BEFORE THE
STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

In the Matter of
NIAGARA MOHAWK POWER CORP $d / b / a$ NATIONAL GRID
Cases 12-E-0201 and 12-G-0202
AUGUST 2012

Prepared Exhibits of:
KWAKU DUAH
Associate Financial Analyst
Office of Accounting \& Finance
State of New York
Department of Public Service Three Empire State Plaza
Albany, New York 12223-1350

Exhibit __(KXD-2)

## No. of Pages

Exhibit __ (KXD-3)
5
7

Description

National Grid plc Corporate Structure

$$
\begin{aligned}
& \text { Exhibit ___(KXD-4 } \\
& \text { Exhibit ___(KXD-5 }
\end{aligned}
$$

Exhibit __(KXD-6)
1

Standard and Poor's Credit Opinion for Niagara Mohawk

Company's derivation of National Grid plc's common equity ratio of 50.7\%
Exhibit __(KXD-7)
2

Example of the Impact of Double leverage on ROE
Exhibit __(KXD-8)
6
Exhibit __(KXD-9)
34

Moody's Credit Opinion for Niagara Mohawk
Exhibit __(KXD-10)
1

Summary of Staff's Rate of Return

Standard \& Poor's May 27, 2009 Credit Methodology
Moody's August 2009 ratings methodology
Niagara Mohawk's Rate Year Credit Metrics
Exhibit __(KXD-11)

June 2012 edition of Mergent Bond Record
Exhibit __(KXD-12)

Rate year cost of Long-Term Debt
Exhibit __(KXD-13)

July 2012 Commercial Paper Rates for A2/P2 non-financial
Exhibit __(KXD-14)

Summary of Staff's Cost of Equity
Exhibit __(KXD-15)

Universe of Electric Holding Companies
Exhibit __(KXD-16)

Staff Proxy Group
Exhibit __(KXD-17)

Three Month Prices for Staff Proxy Companies
Exhibit __(KXD-18)

Discounted Cash Flow calculation for Staff Proxy Group
Exhibit __(KXD-19)

Ambika Prasad Dash's Article: "Security Analysis and Portfolio Management"
Exhibit __(KXD-20)

Merrill Lynch Quantitative Profiles
Exhibit __(KXD-21)

Capital Asset Pricing Model results
Exhibit __(KXD-22)

Steven Kihm's Article:"Rethinking ROE"
Exhibit __(KXD-23)

Michael T. Jacobs and Anil Shivdasani's article: "Do You Know Your Cost Of Capital?"
Exhibit __(KXD-24)

Bernstein and Arnott's Article: "Earnings growth: The two percent dilution"
Bradford Cornell's Article: "Economic Growth and Equity Investing"
Stephen Buell, Carl Beidleman, and R. Charles Moyer Article: "On the Linkage between
Corporate Savings and Earnings Growth"
Recalculation of Mr. Hevert's DCF and CAPM results
H. Kent Baker and Gerald S. Martin's Article on Beta comparison

Diana Harrington's Article: "Whose Beta is Best?"

| Cases 12-E-0201 \& 12-G-0202. | Exhibit__(KXD-2) |
| ---: | :--- |
| NIAGARA MOHAWK POWER CORPORATION |  |
|  | Forecast Capital Structure and Cost Rates |
| For Rate Year Ending December 31, 2014 |  |


|  | Percent of Capital | Cost <br> Rate | Weighted Cost | Pre-tax <br> Weighted cost |
| :---: | :---: | :---: | :---: | :---: |
| Long Term Debt | 49.70\% | 3.95\% | 1.96\% | 1.96\% |
| Short-term debt | 1.00\% | 0.46\% | 0.00\% | 0.00\% |
| Total Debt | 50.70\% |  | 1.96\% |  |
| Customer Deposits | 0.70\% | 1.65\% | 0.01\% | 0.01\% |
| Preferred Stock | 0.60\% | 3.66\% | 0.02\% | 0.03\% |
| Common Equity | 48.00\% | 8.90\% | 4.27\% | 7.07\% |
|  | 100.0\% |  | 6.26\% | 9.07\% |

FIGURE 6
Corporate Structure


[^0]
# STANDARD <br> \&POOR'S <br> <br> GIobal Credit Portal <br> <br> GIobal Credit Portal RatingsDirect ${ }^{\circ}$ 

 RatingsDirect ${ }^{\circ}$}

## Summary: <br> Niagara Mohawk Power Corp.

Primary Credit Analyst:
Barbara A Esseman, New York (1) 212-438-7666; barbara_eiseman@standardandpoors.com

## Secondary Contacts:

Michela Barilett, London (44) 20.7176-3804: michela_bariletti@standardandpoors. com
Matthew O'Neill, New York (1) 212-438-4295; mathew_oneill@standardandpoors com
Table Of Contents
Rationale
Outlook
Related Criteria And Research

# Summary: <br> Niagara Mohawk Power Corp. 

Credit Rating: A-/Stable/A-2

## Rationale

Standard \& Poor's Ratings Services bases its ratings on Niagara Mohawk Power Corp. on the consolidated credit profile of ultimate parent U.K.-based gas and electricity network operator National Grid PLC (NG) and its family of companies. Niagara Mohawk is a wholly owned subsidiary of U.S.-based utility holding company National Grid USA, which is in turn a wholly owned subsidiary of NG. National Grid USA is also a subsidiary of intermediate holding company National Grid Holdings Inc. National Grid USA's main operating subsidiaries include Niagara Mohawk, KeySpan Corp. and its units, New England Power Co., Narragansett Electric Co., Massachusetts Electric Co., Boston Gas Co., and Colonial Gas Co.

The ratings on U.K.-based gas and electricity network operator NG and its subsidiaries reflect Standard \& Poor's Ratings Services' view of the strong and predictable cash flows from the group's low-risk electricity and gas network operations in the U.K. and the U.S.; regulatory regimes in each of those countries that we consider to be broadly supportive of credit quality; a consistently applied strategic and financial policy; and a proven track record of managing large acquisitions.

These strengths are offset by NG's relatively high financial leverage; a substantial capital expenditures (capex) program and the current dividend policy (subject to change in 2013), which together will likely result in negative free cash flows over the medium term; regulatory reset risk in the U.S. and the U.K.; and exposure to foreign exchange risks and inflation, which add volatility to Standard $\&$ Poor's-adjusted credit measures.

National Grid USA delivers electric service and natural gas service to more than 3 million customers in New York, Massachusetts, Rhode Island, and New Hampshire. National Grid USA's consolidated business risk profile is "excellent" (as our criteria define the term), reflecting a focus on relatively low-risk regulated electric and natural gas transmission and distribution operations and regulatory, market, and operating diversification, offset by the riskier nonregulated generation business at KeySpan Generation.

Niagara Mohawk provides electric and gas service in New York. The company also has an "excellent" business risk position, characterized by relatively low-risk operations, offset by New York regulation, which we view as less credit supportive.

Historically, regulation in National Grid USA's service territory has been reasonably supportive of creditworthiness, but long-term rate plans, rate moratoriums, and regulatory lag have resulted in earned returns around $8 \%$, which is below the national average in some jurisdictions. However, with full realization of rate relief and authorization of various rate mechanisms and trackers, earned returns for certain subsidiaries have improved. NG's regional focused cost reduction program is on track to deliver targeted annualized cost saving of $\$ 200$ million by March 31, 2012. The cost cuts, future rate relief, and mechanisms such as decoupling, capital trackers, and true-ups for commodity-related bad debt and pensions and other postretirement benefits should help to lift financial metrics and allow the utilities to earn closer to their allowed returns.

In late 2011, the New York Public Service Commission (NYPSC) approved the company's request to recover certain deferred electric costs and a portion of recent storm costs. The NYPSC approved a total recovery of $\$ 240$ million, including $\$ 211$ million out of the $\$ 236$ million of deferred costs that Niagara Mohawk filed for in July 2011, relating to pensions, environmental costs, capital outlays, and other costs incurred over several years. The commission also approved early recovery of about $\$ 25$ million of storm costs associated with Hurricane Irene in August 2011, subject to review and confirmation of actual costs. Recovery of the deferred costs will occur over 15 months from Jan. 1, 2012, along with a net $\$ 4$ million of carrying charges and other adjustments on the deferred balance. The commission is expected to issue an order on the deferral in December 2012.

In March 2011, Overland Consulting on behalf of the NYPSC began its audit of service company transactions for the test period that served as the basis for determining current 2011 base rates at Niagara Mohawk. The audit is ongoing. As part of the company's last electric rate case, the commission established $\$ 50$ million of the $\$ 119.3$ million rate hike as temporary, subject to refund pending the outcome of the audit.

Niagara Mohawk expects to file new file electric and gas rate applications in 2012.
In light of National Grid USA's heavy capital expenditure phase and escalating cost pressures, timely and sufficient rate relief and alternative-cost-recovery rate mechanisms, as well as credit-supportive action by management, will be important to enhance cash flow and earnings protection. Certain state regulators, however, will be reviewing prospective rate requests at a time of economic weakness, so the subsidiaries' ability to manage regulatory risk will be critical to credit quality.

## S\&P base-case operating scenario

We anticipate that NG's results will return to more moderate levels of growth in the next financial year compared with 2010-2011. In our view, the increase in inflation in 2010-2011 will be reflected in higher inflation-linked regulated revenues in 2011-2012, which will be partially offset by an increase in financing costs on inflation-linked debt.

NG's business risk has not materially changed over the past 12 months, in our view. The group remains focused on owning and operating regulated network assets in the U.K. and U.S., which account for more than $97 \%$ of consolidated operating profit. NG faces some regulatory reset risk in the U.S., and U.S. revenues remain subject to an element of volume risk, although this has significantly diminished as rate plans that protect NG from fluctuations in volumes sold have been renewed.

The group also remains exposed to risks arising from regulatory reset in the U.K. (currently every five years). The next price control period starts in April 2013, is expected to last for eight years, and is currently under consultation at the industry regulator, the Office of Gas and Electricity Markets (Ofgem).

## S\&P base-case cash flow and capital-structure scenario

We anticipate NG's cash flow and debt coverage measures will weaken slightly in the financial year ending March 31, 2012, compared with NG's adjusted funds from operations ( FFO ) to debt ratio of about $17 \%$ in the 12 months to March 31, 2011, as the company continues to implement its capex program.

Based on the current regulatory remuneration framework, we anticipate the adjusted FFO to debt ration to remain above $12 \%$ in 2011-2012 and 2012-2013, which, in our opinion, is commensurate with the current rating.

Following NG's $£ 3.2$ billion rights issue in May 2010, we believe NG is positioned more comfortably within the
existing ratings, and will maintain a degree of headroom in its financial metrics that was previously lacking. In our opinion, the rights issue also underlines NG 's stated commitment of maintaining an 'A' category rating for its U.K. operating subsidiaries.

## Liquidity

The short-term rating on NG, National Grid USA, and subsidiaries is 'A-2'. This largely reflects our long-term corporate credit ratings on the companies and our view of the group's "adequate" liquidity under our criteria. Projected sources of liquidity (mainly operating cash flow and available bank lines), exceed projected uses (mainly necessary capex, debt maturities, and dividends) by more than 1.2 x . NG's ability to absorb high-impact, low-probability events and retain a limited need for refinancing; its flexibility to reduce capital spending or sell assets; its sound bank relationships; its solid standing in credit markets; and its generally prudent risk management further support our opinion of liquidity as adequate.

Our assessment of NG's adequate liquidity is also underpinned by its:

- Access to unrestricted short-term cash and short-term marketable securities of about $£ 2.0$ billion as of Dec. 31, 2011;
- Undrawn $£ 1.7$ billion committed credit facilities with a maturity longer than 12 months. This does not include $£ 0.9$ billion of committed facilities, the use of which has been suspended until July 27, 2012, when they will become available for five years; and
- Our expectation that NG will generate modest and slightly higher adjusted funds from operations (FFO) in 2011-2012 than in 2010-2011, when it was about $€ 3.6$ billion.

This compares with our forecast that, in 2011-2012, NG faces:

- About $£ 3.6$ billion in capex;
- Dividend payments of about $£ 1.0$ billion; and
- $£ 1$ billion in short-term debt maturing over the next 12 months as of Dec. 31, 2011.

We understand that there are no restrictive covenants in the documentation attached to the group's debt.

## Recovery analysis

We assign recovery ratings to first mortgage bonds (FMBs) issued by investment-grade U.S. utilities, which can result in issue ratings being notched above a corporate credit rating (CCR) on a utility depending on the CCR category and the extent of the collateral coverage. We base the investment-grade FMB recovery methodology on the ample historical record of nearly $100 \%$ recovery for secured bondholders in utility bankruptcies and on our view that the factors that supported those recoveries (limited size of the creditor class, and the durable value of utility rate-based assets during and after a reorganization, given the essential service provided and the high replacement cost) will persist. Under our notching criteria, when assigning issue ratings to utility FMBs, we consider the limitations of FMB issuance under the utility's indenture relative to the value of the collateral pledged to bondholders, management's stated intentions on future FMB issuance, as well as the regulatory limitations on bond issuance. FMB ratings can exceed a CCR on a utility by up to one notch in the ' A ' category, two notches in the 'BBB' category, and three notches in speculative-grade categories.

Niagara Mohawk's FMBs benefit from a first-priority lien on substantially all of the utility's real property owned or subsequently acquired. Collateral coverage of more than 1.5 x supports a recovery rating of ' $1+$ ' and an issue rating
one notch above the CCR.

## Outlook

The stable rating outlook on Niagara Mohawk Power mirrors our outlook on ultimate parent NG and reflects our view that the group's operational and financial performances will continue to be solid. It also reflects our belief that NG will continue to focus on its regulated gas and electricity network businesses in the U.K. and the U.S., while maintaining consolidated, adjusted FFO to total debt of more than $12 \%$.

Ratings downside could occur if NG's financial performance were to deviate materially from our forecasts without the implementation of offsetting measures, or if the group were to undertake a significant acquisition. In that regard, if consolidated FFO to total debt were to decline to $10 \%-11 \%$ due to higher capital outlays and acquisitions, and associated debt financing, we could lower the ratings.

Although we view the May 2010 rights issue as providing a more comfortable degree of headroom than existed previously at the current rating level, we continue to view ratings upside as unlikely because of NG's ambitious capex plans and our forecast for its financial performance.

## Related Criteria And Research

- Liquidity Descriptors For Global Corporate Issuers, Sept. 28, 2011
- Credit FAQ: How The Proposed RIIO Regulatory Framework Could Affect Ratings On U.K. Energy Utilities, Sept. 13, 2011
- Principles Of Credit Ratings, Feb. 16, 2011
- Use Of CreditWatch And Outlooks, Sept. 14, 2009
- Business Risk/Financial Risk Matrix Expanded, May 27, 2009
- Analytical Methodology, April 15, 2008.
- Assessing U.S. Utility Regulatory Environments, Nov. 7, 2007
- Principles Of Corporate And Government Ratings, June 26, 2007
- Parent/Subsidiary Links; General Principles; Subsidiaries/Joint Ventures/Nonrecourse Projects; Finance Subsidiaries; Rating Link To Parent, Oct. 28, 2004


# Moody's <br> INVESTORS SERVICE 

## Credit Opinion: Niagara Mohawk Power Corporation

Global Credit Research - 15 Aug 2012
Syracuse, New York, United States

## Ratings

| Category | Moody's Rating |
| :--- | ---: |
| Outlook | Stable |
| Issuer Rating | A3 |
| Senior Secured | A2 |
| Senior Unsecured | A3 |
| Pref. Stock | Baa2 |
| Ult Parent: National Grid Plc | Stable |
| Outlook | Baa1 |
| Issuer Rating | Baa1 |
| Senior Unsecured | P-2 |
| Commercial Paper | (P)P-2 |
| Other Short Term | Stable |
| Parent: National Grid USA | Baa1 |
| Outlook | Baa1 |
| Issuer Rating | $\mathrm{P}-2$ |

## Contacts

| Analyst | Phone |
| :--- | ---: |
| Neil Griffiths-Lambeth/London | 44.20 .7772 .5454 |
| Ryan Wobbrock/New York City | 1.212 .553 .1653 |
| Monica Merli/London | 44.20 .7772 .5454 |

## Key Indicators

## Niagara Mohawk Power Corporation[1]

|  | $3 / 31 / 2011$ | $3 / 31 / 2010$ | $3 / 31 / 2009$ | $3 / 31 / 2008$ | $3 / 31 / 2007$ |
| :--- | ---: | ---: | ---: | ---: | ---: |
| CFO pre-WC + Interest/ Interest | $7.2 x$ | $13.6 x$ | $5.4 x$ | $4.9 x$ | $5.7 x$ |
| CFO pre-WC / Debt | $34.9 \%$ | $42.0 \%$ | $27.9 \%$ | $27.5 \%$ | $31.1 \%$ |
| CFO pre-WC - Dividends / Debt | $14.3 \%$ | $24.0 \%$ | $27.9 \%$ | $27.6 \%$ | $31.1 \%$ |
| Debt / Capitalization | $31.5 \%$ | $32.4 \%$ | $29.8 \%$ | $34.5 \%$ | $36.5 \%$ |

[1] All ratios are calculated using Moody's Standard Adjustments.

Note: For definitions of Moody's most common ratio terms please see the accompanying User's Guide.

## Opinion

## Corporate Profile

Niagara Mohawk ("NiMo") is a wholly owned direct subsidiary of National Grid USA ("NG USA" rated Baa1) which is in turn a subsidiary of National Grid plc ("National Grid" rated Baa1/Prime-2), a holding company headquartered in the United Kingdom for a range of largely regulated businesses operating in the United Kingdom and United States.

NiMo is a regulated energy delivery business operating in New York State. The company provides electric service to approximately 1.6 million electric customers in the areas of eastern, central, northern and western New York and sells, distributes and transports natural gas to approximately 0.6 million gas customers in the areas of central, northern and eastern New York.

The outlook on all of the ratings is stable.

## Recent Developments

National Grid reported its preliminary results for 2011/12 on 17 May 2012. Excluding an adverse timing impact of GBP256 million, operating profit for the group grew by GBP172 million, or $5 \%$, on a constant currency basis. The higher earnings were largely driven by the UK regulated businesses which benefitted from high retail price index (RPI) inflation, but also a GBP68 million (57\%) increase in profit from the Grain LNG, property and UK metering businesses.

On a constant currency basis and excluding timing differences of GBP183 million, operating profit for the US businesses declined by GBP12 million, or $1 \%$, with the benefit of higher regulated income and cost reductions offset by GBP116 million of storm costs. Including storm costs and timing effects, operating profit for the group as a whole declined by $2 \%$ in 2011/12 but this must be considered in the context of a $15 \%$ increase in the prior year.

In April 2012, NiMo submitted new one-year rate case filings for both its electric and gas businesses, to take effect from April 2013, with a subsequent 'Corrections and Update' filing in July 2012. The company requested an increase in revenues of USD190 million, based on a $10.55 \%$ return on equity ("ROE"), and the filing includes investments of USD454 million and USD82 million in the electricity and gas businesses respectively. The increase in revenues would, however, be more than offset by approximately USD219 million of rate reductions related to the recovery of certain past deferred costs. The filing is expected to be concluded in March 2013.

## Rating Rationale

Moody's rating assessment of NiMo is based on the rating agency's methodologies for (i) Regulated Electric and Gas Utilities published in August 2009 and (ii) complex European utility groups (see European Regulated Utility Groups: Methodology Update, January 2007). The rating reflects the company's favourable business and operating risk profile as an energy delivery business and the regulatory framework under which it operates but also the level of debt, an ongoing capital investment programme and likely dividend payments to NG USA. NiMo's ratings are also subject to the cap of the overall credit quality of the National Grid group, which we currently assess in the low A range.

## Rating Drivers

The following factors influence NiMo's ratings under the Regulated Electric and Gas Utilities methodology:

## FACTOR 1: REGULATORY FRAMEWORK

NiMo is subject to regulation by the NYPSC and the Federal Energy Regulatory Commission ("FERC") with respect to the rates that the company charges its customers based on a methodology that establishes prices based primarily on costs. The NYPSC regulates retail services, including the distribution and sale of natural gas and electricity to consumers. FERC regulates interstate natural gas transportation and electricity transmission and has jurisdiction over certain wholesale natural gas sales and wholesale electric sales.

Moody's has a generally favourable view of the regulatory environment in which NiMo operates. However, we also consider that the US framework poses a number of challenges for the utilities and is less attractive than that covering National Grid's regulated UK operations.

There are similarities between the regulatory regimes in the US and UK. For example, each is based on a building block approach intended to allow the utility to recover its operating costs, pay tax, receive regulatory depreciation and earn a return on past investments. However, there are important differences: (i) in many states, the system is based on historic rather than prospective costs as in the UK; (ii) returns are determined on a nominal basis in the US
but a real basis in the UK; (iii) US regulators take account of the actual rather than a notional capital structure; and (iv) US utilities are able to make full or partial filings as necessary rather than being bound by a fixed regulatory timetable as in the UK. Finally, the US system is quasi-judicial with multiple parties including government bodies and officials, consumer advocacy groups and various energy consumers, who have differing concerns, but generally a common objective of limiting rate increases.

Whilst the regulatory framework in the US is, in general, well developed, it can be politically charged and challenging for the utility. This is not helped by the fact that transmission/distribution utilities often bill customers for both the cost of transmission/distribution and the energy that they consume and regulators look at the total impact on bills of each decision that they make. Particularly when general economic conditions are difficult, it can be hard for regulated US utilities to achieve support for planned investments and what they may consider an adequate level of returns in new rate case applications.

We assign NiMo a score of Baa for the Regulatory Framework sub-factor under the Regulated Electric and Gas Utilities methodology recognising the established framework but also the associated challenges for the regulated companies. This is in line with the score assigned to many of the rated US utilities for this sub-factor but below the Aa assigned to the parent company, National Grid plc. The parent company score reflects the regulatory framework for the US subsidiaries and also Moody's favourable view of the regime which applies to the group's UK operations.

## FACTOR 2: ABILITY TO RECOVER COSTS AND EARN RETURNS

NiMo is subject to a retail gas rate plan and a retail electricity rate plan.
In January 2010, NiMo filed a rate proposal for its electricity business which included a revenue increase of USD369 million and a ROE of 11.1\% effective from 1 January 2011. In January 2011, the NYPSC granted an increase in revenue of approximately USD112 million, including recovery of USD40 million in competitive transition charges, with a $9.1 \%$ ROE. The company subsequently accepted the option of receiving a $9.3 \%$ return, which would result in a revenue requirement increase of approximately USD119 million, which was subject to it not submitting a new filing before January 2012.

In December 2011, NYPSC approved NiMo's request for the recovery of USD240 million of deferred expenses, capex and pension expenses and this amount will be recovered over the 15 months from January 2012. At the same time, NYPSC approved the removal of USD573 million from NiMo's rates related to stranded cost recoveries, which will not impact reported earnings under US GAAP (as the revenue was offset by amortisation of the regulatory asset) but will reduce cashflow by around USD340 million (after adjusting for tax) equivalent to $40 \%$ of CFO Pre-W/C for the year to March 2011.

As mentioned, NiMo has submitted a one year rate plan filing for both its electricity and gas businesses to take effect from April 2013. The filing included a request for an increase in electricity and gas revenues of USD145 million and USD44 million respectively. These increases will, however, be more than offset by USD219 million of rate reductions relating to past deferred costs, implying a net annual revenue reduction of USD29 million. The filing is based on an ROE of $10.55 \%$.

For 2011, NiMo achieved a ROE of 5.6\% for its electric business, as compared to $6.1 \%$ in the prior year and an allowed return of $9.3 \%$. Achieved ROE for the gas business was $6.5 \%$, down from $7.6 \%$ in the prior year and some way below the allowed $10.20 \%$ return.

We assign a score of Baa for this sub-factor under the Regulated Electric and Gas Utilities methodology, recognising that rate reviews for NiMo are conducted within an established framework but are nevertheless prone to political interference and challenge resulting in a degree of uncertainty about the company's ability to recover its costs and earn the targeted level of returns. This scoring is in line with that for many other rated US utilities but below the A assigned to other NG USA subsidiaries, which benefit from higher returns under recent rate cases.

## FACTOR 3: DIVERSIFICATION

Diversification is considered under the Methodology as, in general, a balance among several different businesses, geographic regions or regulatory regimes reduces the risk that a company will experience a sudden or rapid deterioration in its overall creditworthiness because of an adverse development specific to any one part of its operation.

We assign a score of Baa to NiMo under this sub-factor recognising the scale of the business but also the geographic and regulatory concentration. This scoring is in line with that assigned to a number of the larger US utilities but below the Aa scoring for National Grid as a group.

## FACTOR 4: FINANCIAL STRENGTH AND LIQUIDITY

Moody's ratings for NiMo acknowledge the historical strength of its key financial metrics. We note, however, that cashflow, and hence Moody's CFO metrics, will suffer due to the reduction in rates associated with stranded cost recoveries but also that the loss will be offset by any increase in returns towards what is allowed. NiMo maps to a score in the A range for financial strength and liquidity.

## Liquidity

NiMo maintains a sufficient level of liquidity primarily by supplementing its internally generated cashflow and debt issuance through participation in the NG USA money pool, the purpose of which is to utilise family cash resources more effectively and reduce the need for external short-term borrowing. Participating subsidiary companies and the parent contribute their excess cash to the pool which is first used to meet the short-term borrowing needs of eligible subsidiaries. Companies borrowing from the pool pay rates linked to A1/P-1 30-day commercial paper rates. Any remaining cash is typically invested into Aaa rated money funds with same day liquidity. As a measure of additional security, NG USA's parent, the UK-based National Grid plc, has the ability to increase the amount of cash in the pool through direct loans to NG USA. Alternatively, NG USA can also issue commercial paper and medium term notes in lieu of or to supplement direct loans from the UK parent.

As of 31 March 2012, NiMo had about USD2 million of unrestricted cash on hand. The company had short-term moneypool investments of USD98 million, as compared to borrowings of USD166 million at March 31 2011, but also had net accounts payable to affiliates of USD30 million in respect of certain shared services. NiMo's next long-term debt maturity is in October 2013 and a USD500 million bond falls due in October 2014.

## Rating Outlook

The outlook for NiMo's ratings is stable reflecting Moody's outlook on the credit quality of the National Grid group as a whole.

## What Could Change the Rating - Up

Moody's considers upward rating pressure is unlikely in the medium term. The 2010 rights issue left National Grid and its subsidiaries better positioned in their rating categories but Moody's notes that the group's large capital investment programme for the UK and the possibility of additional investment in the US (above and beyond what is currently planned) will most likely reduce financial flexibility over time. The rating agency further considers that the group will favour using free cash flow to fund shareholder distributions and/or support growth rather than to reduce gearing. We note, as a positive, that the group intends to increase dividends for the current year by $4 \%$ as compared to the $8 \%$ annual growth over recent years.

## What Could Change the Rating - Down

A deterioration in the consolidated credit quality of the National Grid group, even if unrelated to NiMo, which resulted in the consolidated credit profile being viewed as below the A range, would be likely to negatively impact NiMo's ratings. NiMo's ratings could also come under downward pressure if the ratio of CFO Pre-W/C to Debt appeared likely to remain below mid-teens over the medium term.

## Rating Factors

## Niagara Mohawk Power Corporation <br> 550000

| Regulated Electric and Gas Utilities Industry [1][2] | Aaa | Aa | A | Baa | Ba | B |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Factor 1: Regulatory Framework (25\%) <br> a) Regulatory Framework |  |  |  |  |  |  |
| Factor 2: Ability To Recover Costs And Earn Returns (25\%) <br> a) Ability To Recover Costs And Earn Returns |  |  |  |  |  |  |


[1] All ratios are calculated using Moody's Standard Adjustments. [2] As of 3/31/2011; Source: Moody's Financial Metrics

## Moody's

## INVESTORS SERVICE

© 2012 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. ("MIS") AND ITS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT. All information contained herein is obtained by MOODY'S from sources believed by it to be
accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources Moody's considers to be reliable, including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling. NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $\$ 1,500$ to approximately $\$ 2,500,000$. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than $5 \%$, is posted annually at www.moodys.com under the heading "Shareholder Relations - Corporate Governance - Director and Shareholder Affiliation Policy."

Any publication into Australia of this document is by MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61003399 657, which holds Australian Financial Services License no. 336969. This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001.

Notwithstanding the foregoing, credit ratings assigned on and after October 1, 2010 by Moody's Japan K.K. ("MJKK") are MJKK's current opinions of the relative future credit risk of entities, credit commitments, or debt or debt-like securities. In such a case, "MIS" in the foregoing statements shall be deemed to be replaced with "MJKK". MJKK is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO.

This credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on
the equity securities of the issuer or any form of security that is available to retail investors. It would be dangerous for retail investors to make any investment decision based on this credit rating. If in doubt you should contact your financial or other professional adviser.
Case 12-E-0201 \& 12-G-0202Exhibit KXD-6
Company's Derivation of $50.7 \%$ Common Equity Ratio of the Ultimate Parent
FY 201
fm
NG plc consolidated Equity - US GAAP ..... 14,019
NG Gas consolidated reported equity - US GAAP ..... $(9,883)$
NGG intercompany balance ..... 5,61
NGG net debt excluding derivatives ..... $(7,644)$
NGG Derivatives ..... 507
NG Gas equity pre intercompany and net debt ..... $(11,409)$
NGET consolidated reported equity - UK GAAP/IFRS ..... $(1,024)$
NGET US GAAP adjustments ..... 49
NGET intercompany ..... (72)
NGET net det excluding derivatives ..... $(4,662)$
NGET derivatives ..... 92
NGET equity pre intercompany and net debt ..... $(5,617)$
NGG Transmission and Distribution RV (T only post 2005) ..... 4,889
NGG Distribution RV (post 2005) ..... 7,520
NGG Metering and other assets ..... 496
NGET RV ..... 8,388
RAV Adjustment ..... 21,293
NG plc adjusted Equity ..... 18,286
NG plc reported Net Debt ..... 18,942
NG plc derivatives related to debt ..... $(1,144)$
Total Net Debt ..... 17,798
US GAAP unadjusted Equity Ratio ..... 44.06\%
US GAAP Equity Ratio Adjusted for RAV ..... 50.7\%

## AN ILLUSTRATION OF THE EFFECT OF DOUBLE LEVERAGE

Below is an illustration of how the use of double leverage in the ratemaking process leads to returns in excess of the cost of capital. First, let's assume a hypothetical subsidiary called XYZ with a total capitalization of $\$ 500$ with $50 \%$ equity and $50 \%$ debt shown in Table $A$.

|  | Table A |  |
| :--- | :--- | :--- |
|  | SUBSIDIARY-ONLY |  |
|  | CAPITAL <br> STRUCTURE |  |
|  | Amount | Percent |
| Common Equity | $\$ 250$ | $50 \%$ |
| Subsidiary Debt | $\$ 250$ | $50 \%$ |
| Totals | $\$ 500$ | $100 \%$ |

Let's further assume that the parent, ABC , provides the $\$ 250$ common equity (at a cost rate of $10.0 \%$ ) by issuing debt of $\$ 125$ (assuming debt cost rate of $6.0 \%$ ) and common equity of $\$ 125$, the capital structure of the parent will be $50 \% / 50 \%$ debt/equity as shown in Table B.

|  | Table B |  |
| :--- | :---: | :---: |
|  | PARENT-ONLY |  |
|  | CAPITAL <br> STRUCTURE |  |
|  | $\underline{\text { Amount }}$ | Percent |
| Parent Equity | $\$ 125$ | $50 \%$ |
| Parent Debt | $\$ 125$ | $50 \%$ |
| Totals | $\$ 250$ | $100 \%$ |

As shown in Table C, the consolidated capital structure of the holding company will show $\$ 125$ of parent's common equity and $\$ 375$ of debt consisting of $\$ 125$ of parent's debt and $\$ 250$ of subsidiary's debt.

|  | Table C |  |
| :--- | :---: | :---: |
|  | PARENT COMPANY <br> CONSOLIDATED |  |
|  | CAPITAL STRUCTURE |  |
|  | $\underline{\text { Amount }}$ | $\underline{\text { Percent }}$ |
| Parent Equity | $\$ 125$ | $25 \%$ |
| Parent Debt | $\$ 125$ | $25 \%$ |
| Subsidiary Debt | $\underline{\$ 250}$ | $50 \%$ |
| Totals | $\$ 500$ | $100 \%$ |

With XYZ's 5.0\% cost of debt, a 9.0\% cost of equity, and tax rate of 35\%, the subsidiary's after tax and pre-tax cost of capital will be $7.0 \%$ and $9.42 \%$ respectively as shown in Table D.

|  | Table D |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| SUBSIDIARY PRE-TAX OVERALL COST OF CAPITAL |  |  |  |  |  |  |
|  | $\underline{\text { Amount }}$ | $\underline{\text { Percent }}$ | $\underline{\text { Cost }}$ | $\underline{\underline{\text { Wt. Cost }}}$ | $\frac{\underline{\text { Pre-tax }}}{\underline{\text { Cost }}}$ |  |
| Common Equity | $\$ 250$ | $50 \%$ | $9.00 \%$ | $4.50 \%$ | $6.92 \%$ |  |
| Subsidiary Debt | $\underline{\$ 250}$ | $50 \%$ | $5.00 \%$ | $2.50 \%$ | $\underline{2.50 \%}$ |  |
| Totals | $\$ 500$ | $100 \%$ |  | $7.0 \%$ | $9.42 \%$ |  |

Given the after-tax return of $7.0 \%$, the subsidiary will earn $\$ 35$ after tax ( $7.0 \%$ * $\$ 500$ ). The subsidiary will then pay its own interest expenses of $\$ 13(5 \% * 250)$, leaving $\$ 23$ as dividends. When the $\$ 23$ is paid to the parent as dividend, the parent will pay its debt expense of $\$ 8(6 \% * \$ 125)$. After paying its debt cost, the parent is left with $\$ 15$. When the amount of profit of $\$ 15$ is measured against the parent's actual equity investment of $\$ 125$, the rate of return on shareholders' equity is $12.0 \%$ as shown in Table E below.

Table E

| Return on rate base | $\$ 35$ |
| :--- | :--- |
| Utility debt expense | $\$ 12.5$ |
| dividend to parent | $\$ 23$ |
| Equity on parent books | $\$ 125$ |
| Amount borrowed by parent | $\$ 125$ |
| Dividend to parent | $\$ 23$ |
| debt cost rate (assuming) | $6 \%$ |
| Interest on the \$100 debt | $\$ 8$ |
| Profit after interest payment | $\$ 15$ |
| Profit as a \% of parent's equity | $12.00 \%$ |
| ROE of parent | $12.00 \%$ |
| ROE of subsidiary | $9.42 \%$ |

## STANDARD POOR'S

## RatingsDirect

# Criteria | Corporates | General: <br> Criteria Methodology: Business Risk/Financial Risk Matrix Expanded 

## Primary Credit Analysts:

Solomon B Samson, New York (1) 212-438-7653; sol_samson@standardandpoors.com
Emmanuel Bubois-Peierin. Paris (33) 1-4420-6673; ammanuel_duboıs-pelerin@standardandpoors.com
Table Of Contents
Business Risk/Financial Risk Framework
Updated Matrix
Financial Benchmarks
How To Use The Matrix--And Its Limitations
Related Articles

# Criteria | Corporates | General: <br> Criteria Methodology: Business Risk/Financial Risk Matrix Expanded 

(Editor's Note: In the previous version of this article published on May 26, certain of the rating outcomes in the table 1 matrix were missated. A corrected version follows.)

Standard \& Poor's Ratings Services is refining its methodology for corporate ratings related to its business risk/financial risk matrix, which we published as part of 2008 Corporate Ratings Criteria on April 15, 2008, on RatingsDirect at www.ratingsdirect.com and Standard \& Poor's Web site at www.standardandpoors.com.

This article amends and supersedes the criteria as published in Corporate Ratings Criteria, page 21, and the articles listed in the "Related Articles" section at the end of this report.

This article is part of a broad series of measures announced last year to enhance our governance, analytics, dissemination of information, and investor education intiatives. These initiatives are aimed at augmenting our independence, strengthening the rating process, and increasing our transparency to better serve the global markets.

We introduced the business risk/financial risk matrix four years ago. The relationships depicted in rhe matrix represent an essential element of our corporate analytical methodology.

We are now expanding the matrix, by adding one category to both business and financial risks (see table 1). As a result, the matrix allows for greater differentiation regarding companies rated lower than investment grade (i.e., 'BB' and below).

## Table 1

Business And Financial Risk Profile Matrix

| Business Risk Profile | Financial Risk Profile |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Minimal | Modest | Intermediate | Significant | Aggressive | Highly Leveraged |
| Excellent. | AAA | AA | A | A. | BBB | -- |
| Strong | AA | A | A. | B8B | BB | BB- |
| Satisfactory | A. | BBB+ | BBB | 88+ | BB- | B+ |
| Fair | $\cdots$ | BBB- | BB+ | B8 | B8. | $B$ |
| Weak | - | - | B6 | BB- | $8+$ | B. |
| Vulnerable | -- | - | -- | B+ | B | CCC + |

These rating outcomes are shmwn for guidance purposes only Actual rating should be within one notch of indicated rating outcomes
The rating outcomes refer to issuer credit ratings. The ratings indicated in each cell of the matrix are the midpoints of a range of likely tating possibilities. This range would ordinarily span one notch above and below the indicated rating.

## Business Risk/Financial Risk Framework

Our corporate analytical methodology organizes the analytical process according to a common framework, and it divides the task into several categories so that all salient issues are considered. The first categories involve fundamental business analysis; the financial analysis categories follow.

Our ratings analysis starts with the assessment of the business and competitive profile of the company. Two companies with identical finaneial metries can be rated very differently, to the extent that their business challenges and prospects differ. The categories underlying our business and financial risk assessmenrs are:

## Business risk

- Country risk
- Industry risk
- Competitive position
- Profitability/Peer group comparisons


## Financial risk

- Accounting
- Financial governance and policies/risk tolerance
- Cash flow adequacy
- Capital structure/asset protection
- Liquidity/short-term factors

We do not have any predetermined weights for these categories. The significance of specific factors varies from situation to situation.

## Updated Matrix

We developed the matrix to make explicit the rating outcomes that are typical for various business risk/financial risk combinations. It illustrates the relationship of business and financial risk profiles to the issuer credit rating.

We tend to weight business risk slightly more than financial risk when differentiating among investment-grade ratings. Conversely, we place slightly more weight on financial risk for speculative-grade issuers (see table 1, again). There also is a subtle compounding effect when both business risk and financial risk are aligned ar extremes (i.e., excellent/minimal and vulnerable/highly leveraged.)

The new, more granular version of the matrix represents a refinement-not any change in rating criteria or standards--and, consequently, holds no implications for any changes to existing ratings. However, the expanded matrix should enhance the transparency of the analytical process.

## Financial Benchmarks

Table 2
Financial Risk Indicative Ratios (Corporates)

|  | FFa/Debt (\%) | Oebt/EBITDA (x) | Debt/Capital (\%) |
| :--- | :--- | :--- | :--- |
| Minimal | greater than 80 | less than 1.5 | jess than 25 |
| Modest | $45-80$ | $1.5-2$ | $25-35$ |
| Intermediate | $30-45$ | $2-3$ | $35-45$ |
| Significant | $20-30$ | $3-4$ | $45-50$ |
| Aggressive | $12-20$ | $4-5$ | $50-60$ |
| Hignly Leveraged | less than 12 | greatar than 5 | greater than 80 |

## How To Use The Matrix-And Its Limitations

The rating matrix indicative outcomes are what we typically ohserve--but ate not meant to be precise indications or guarantees of future rating opinions. Positive and negative nuances in our analysis may lead to a notch higher or lower than the outcomes indicated in the vatious cells of the matrix.

In certain situations there may be specific, overarching cisks that are outside the standard framework, e.g., a liquidity crisis, major litigation, or large acquisition. This often is the case regarding credits at the lowest end of che credit spectram-i.e., the ' CCC ' category and lower. These ratings, by definition, reflect some impending crisis or acute vulnerability, and the balanced approach that underlies the matrix framework just does not lend itself to such situations.

Similarly, some matrix cells are blank because the underlying combinations are highly unusual-and presumably would involve complicated factors and analysis.

The following hypothetical example illustrates how the tables can be used to better understand our rating process (see tables 1 and 2).

We believe that Company $A B C$ has a satisfactory business risk profile, typical of a low investment-grade industrial issuer. If we believed its financial risk were intermediate, the expected racing outcome should be within one notch of 'BBB'. ABC's catios of cash flow to debr (35\%) and debt leverage (total debt to EBITDA of 2.5 x ) are indeed characteristic of intermediate financial risk.

It might be possible for Company $A B C$ to be upgraded to the ' $A$ ' category by, for example, reducing its debt burden to the point that financial cisk is viewed as minimal. Funds from operations (FFO) to debt of more than $60 \%$ and debt to EBITDA of only $1.5 x$ would, in most cases, indicate minimal.

Conversely, ABC may choose to become more financially aggressive--perhaps it decides to reward shareholders by borrowing ro repurchase its stock. It is possible that the company may fall into the 'BB' category if we view its financial risk as significant. FFO to debt of $20 \%$ and debt to EBITDA $4 x$ would, in our view, rypify the significant financial risk category.

Still, it is essential to realize thar the financial benchmarks are guidelines, neither gospel nor guaranrees. They can vary in nonstandard cases: For example, if a company's financial measures exhibit very little volatility, benchmarks may be somewhat more relaxed.

Moreover, our assessment of financial risk is not as simplistic as looking at a few ratios. It encompasses:

- a view of accounting and disclosure practices;
- a view of corporate governance, financial policies, and risk tolerance;
- the degree of capital intensity, flexibility regarding capital expenditures and other cash needs, including acquisitions and shareholder distributions; and
- various aspects of liquidity-including the risk of refinancing near-term maturities.

The matrix addresses a company's standalone credit profile, and does not take account of external influences, which would pertain in the case of government-related entities or subsidiaries that in our view may benefit or suffer from affiliation with a stronger or weaker group. The matrix refers only to local-currency ratings, rather than foreign-currency ratings, which incorporate additional transfer and convertibility risks. Finally, the matrix does not apply to project finance or corporate securitizations.

## Related Articles

Industrials' Business Risk/Financial Risk Matrix-A Fundamental Perspeetive On Corporate Ratings, published April 7,2005, on RatingsDirect.

Copyright © 2009 by Standard \& Poors Financial Services LLC (S\&P). a subsidtary of The McGraw-Hill Companies, Inc. All nghis reserved No part of this information may be reprodaced or distributed in any farm or by any means, or stored in a database of retrieval system, without the prior written permission of S\&P S\&P, its affiliates, and/or their third-party providers have exclusive prognelary rights in the information, including ratings, credit-related analyses and data, provided heretn this information shati not be used for any unlawful or unauthonzed purposes Nerther S\&P, ner its affiliates, nor their third-party providers guarantee the accuracy, completeness, limeliness or availability of any information S\&P. its affilates or their third-party providers and their directors, officers, sharehalders, employees or agenis are not responsible for any ecrors or omissiuns, regardless of the cause, or for the results oblaned from the use of such information. S\&P, ITS AFFILLAIES AND THER THIRO-PARTY PROVIOERS OISCLAIM ANY ANO ALL EXPRESS OR IMPLIEO WARRANIIES, INCLUOING, BUT NOT LIMITEO TO, ANY WARRANTIES OF MERCHANTABILTY OR FITNESS FOR A PAFTICULAR PURPDSE OR USE In no event shall S\&P, its aifiliates or their third-party providers and their directors, officers, shareholders, employees or agents be liable to any party for any direct, indirect, incidearal, exemplary, comperisatory, punitive, special or consequential damages, costs, expenses, legal fees, of losses fincluding, without himitation, lost income or lost profits and opportunity costsi in connection with any use of the information contamed herein even if advised of the possibitity of such damages.

The ratings and credit-related analyses of S\&P and its affilates and the observations contamed herein are statements of opinion as of the date they are expressed and not statements of fact or recommendalions to purchase, hoid. or sell eny securities or make any invesiment dacisions S\&P assumes no obligation to update any information following publication. Users of the information contaned herein should not rely on any of it in making any investment decision S\&P's opinions and analyses do not address the snitability of any securly S\&P does not act as a fiduciary or an investment advisar While S\&P has abiained information from sources it believes to be reliable, S\&P does not parform an audit and undertakes no duty of due diligence or indepandent verification of any infornation it receives. S\&P keeps certain activitres of its business unts separate from each other in order to preserve the independence and objectivity of aach of these activities As a result. certain husiness units of S\&P may have information that is not avalaole to other S\&P business units. S\&P has estabished policies and procedures to mantain the confidentiality of cerain non-public information received in connection with each analytical process

S\&P's Hatings Services busmess may receive compensation for its ratings and credit-related analyses, normally from issuers or undenwiters of securites or from obligors S\&P reserves the right to disseminate its opinions and anaiyses. S\&i's public ratings and analyses are made availabte on its Web sites, www.standardendpoors.com Ifree of charge) and www, ratingsdirect.com (subscription), and may be distributed through other means, including via S\&P publications and third-party redistributors. Additional ifformation about our ratings lees is available at www standariandpoors com/usratıngsfees

Any Passwords/usei IDs issued by S\&P to users are single user-dedicated and may ONLY be used by the individual to whom they have been assigned. No sharing of passwords/user IDs and no simuitaneous access via the same passward/user 10 is permited To reprint, translate, or use the data or information other than as provided herein, contact Client Services, 55 Water Street, New York. NY 10041; 112124387280 or by e-mail to; research requestgstandardandpoors com.

Copyright (c) 1994-2009 by Standard \& Poors Financral Services LLC; a subsidiary of The McGraw-Hill Companies, inc. All Rights Heserved.

## Rating Methodology

## Table of Contents:

| Summary | 1 |
| :--- | ---: |
| About the Rated Universe | 2 |
| About this Rating Methodology | 4 |
| The Key Rating Factors <br> Rating Factor 1: Regulatory Framework <br> (25\%) | 6 |
| Rating Factor 2: Ability to Recover Costs |  |
| and Earn Returns (25\%) |  |$\quad 7$

## Analyst Contacts:

New York<br>1.212.553.1653<br>Michael G. Haggarty<br>Vice President - Senior Credit Officer<br>Mitchell Moss<br>Associate Analyst<br>W. Larry Hess<br>Team Managing Director<br>Thomas Keller<br>Group Managing Director<br>Bart Oosterveld<br>Chief Credit Officer, Public, Project \& Infrastructure Finance

(Continued on back page)

## Moody's Global <br> Infrastructure Finance

August 2009

## Regulated Electric and Gas Utilities

## Summary

This rating methodology provides guidance on Moody's approach to assigning credit ratings to electric and gas utility companies worldwide whose credit profile is influenced to a large degree by the presence of regulation. It replaces the Global Regulated Electric Utilities methodology published in March 2005 and the North American Regulated Gas Distribution Industry (Local Distribution Companies) methodology published in October 2006. While reflecting similar core principles as these previous methodologies, this updated framework incorporates refinements that better reflect the changing dynamics of the regulated electric and gas industry and the way Moody's applies its industry methodologies.

The goal of this rating methodology is to assist investors, issuers, and other interested parties in understanding how Moody's arrives at company-specific ratings, what factors we consider most important for this sector, and how these factors map to specific rating outcomes. Our objective is for users of this methodology to be able to estimate a company's ratings (senior unsecured ratings for investment-grade issuers and Corporate Family Ratings for speculative-grade issuers) within two alpha-numeric rating notches.

Regulated electric and gas companies are a diverse universe in terms of business model (ranging from vertically integrated to unbundled generation, transmission and/or distribution entities) and regulatory environment (ranging from stable and predictable regulatory regimes to those that are less developed or undergoing significant change). In seeking to differentiate credit risk among the companies in this sector, Moody's analysis focuses on four key rating factors that are central to the assignment of ratings for companies in the sector. The four key rating factors encompass nine specific elements (or sub-factors), each of which map to specific letter ratings (see Appendix A). The four factors are as follows:

1. Regulatory Framework
2. Ability to Recover Costs and Earn Returns
3. Diversification
4. Financial Strength and Liquidity

## Regulated Electric and Gas Utilities

This methodology pertains to regulated electric and gas utilities and excludes regulated electric and gas networks (companies primarily engaged in the transmission and/or distribution of electricity and/or natural gas that do not serve retail customers) and unregulated utilities and power companies, which are covered by separate rating methodologies. Municipal utilities and electric cooperatives are also excluded and covered by separate rating methodologies.

In Appendix A of this methodology, we have included a detailed rating grid for the companies covered by the methodology. For each company, the grid maps each of these key rating factors and shows an indicated alpha-numeric rating based on the results from the overall combination of the factors (see Appendix B). We note, however, that many companies will not match each dimension of the analytical framework laid out in the rating grid exactly and that from time to time a company's performance on a particular rating factor may fall outside the expected range for a company at its rating level. These companies are categorized as "outliers" for that rating factor. We discuss some of the reasons for these outliers in this methodology as well as in published credit opinions and other company-specific analysis.

The purpose of the rating grid is to provide a reference tool that can be used to approximate credit profiles within the regulated electric and gas utility sector. The grid provides summarized guidance on the factors that are generally most important in assigning ratings to the sector. While the factors and sub-factors within the grid are designed to capture the fundamental rating drivers for the sector, this grid does not include every rating consideration and does not fit every business model equally. Therefore, we outline additional considerations that may be appropriate to apply in addition to the four rating factors. Moody's also assesses other rating factors that are common across all industries, such as event risk, off-balance sheet risk, legal structure, corporate governance, and management experience and credibility. Furthermore, most of our subfactor mapping uses historical financial results to illustrate the grid while our ratings also consider forward looking expectations. As such, the grid-indicated rating is not expected to always match the actual rating of each company. The text of the rating methodology provides insights on the key rating considerations that are not represented in the grid, as well as the circumstances in which the rating effect for a factor might be significantly different from the weight indicated in the grid.

Readers should also note that this methodology does not attempt to provide an exhaustive list of every factor that can be relevant to a utility's ratings. For example, our analysis covers factors that are common across all industries (such as coverage metrics, debt leverage, and liquidity) as well as factors that can be meaningful on a company or industry specific basis (such as regulation, capital expenditure needs, or carbon exposure).

This publication includes the following sections:

- About the Rated Universe: An overview of the regulated electric and gas industries
- About the Rating Methodology: A description of our rating methodology, including a detailed explanation of each of the key factors that drive ratings
- Assumptions and Limitations: Comments on the rating methodology's assumptions and limitations, including a discussion of other rating considerations that are not included in the grid

In the appendices, we also provide tables that illustrate the application of the methodology grid to 30 representative electric and gas utility companies with explanatory comments on some of the more significant differences between the grid-implied rating and our actual rating (Appendix C). We also provide definitions of key ratios (Appendix D), an industry overview (Appendix E) and a discussion of the key issues facing the industry over the intermediate term (Appendix F) and regional considerations (Appendix G).

## About the Rated Universe

The rating methodology covers investor-owned and commercially oriented government owned companies worldwide that are engaged in the production, transmission, distribution and/or sale of electricity and/or natural gas. It covers a wide variety of companies active in the sector, including vertically integrated utilities, transmission and distribution companies, some U.S. transmission-only companies, and local gas distribution companies (LDCs). For the LDCs, we note that this methodology is concerned principally with operating utilities regulated by their local jurisdictions and not with gas companies that have significant non-utility

## Regulated Electric and Gas Utilities

businesses ${ }^{1}$. In addition, this methodology includes both holding companies as well as operating companies. For holding companies, actual ratings may be lower than methodology grid-implied ratings due to the structural subordination of the holding company debt to the operating company debt. In order for a utility to be covered by this methodology, the company must be an investor-owned or commercially oriented government owned entity and be subject to some degree of government regulation or oversight. This methodology excludes regulated electric and gas networks, electric generating companies ${ }^{2}$ and independent power producers operating predominantly in unregulated power markets, municipally owned utilities, electric cooperative utilities, and power projects, which are covered in separate rating methodologies.

The rated universe includes approximately 250 entities that are either utility operating companies or a parent holding company with one or more utility company subsidiaries that operate predominantly in the electric and gas utility business. They account for about US $\$ 650$ billion of total outstanding long-term debt instruments. In general, ratings used in this methodology are the Senior Unsecured ("SU") rating for investment grade companies, the Corporate Family Rating ("CFR") for non-investment grade companies, and the Baseline Credit Assessment ("BCA") for Government Related Issuers (GRI). A subset of 30 of these entities is included in the methodology, representing a sampling of the universe to which this methodology applies.

Geographically, this methodology covers companies in the Americas, Europe, Middle East, Africa, Japan, and the Asia/Pacific region. The ratings spectrum for the sector ranges from Aaa to B3, with the actual rating distribution of the issuers included (both holding companies and operating companies) shown on the following table:


Although all of these companies are affected to some degree by government regulation or oversight, country-by-country regulatory differences and cultural and economic characteristics are also important credit considerations. There is little consistency in the approach and application of regulatory frameworks around the world. Some regulatory frameworks are highly supportive of the utilities in their jurisdictions, in some cases offering implied sovereign support to ensure reliability of electric supply. Other regulatory frameworks are less supportive, more unpredictable or affected by political influence that can increase uncertainty and negatively affect overall credit quality.
${ }^{1}$ These companies are assessed under the rating methodology "North American Diversified Natural Gas Transmission and Distribution Companies", March 2007.
2 The six Korean generation companies are included in this methodology as they are subject to regulation and Moody's views them and their $100 \%$ parent and sole off-taker KEPCO on a consolidated basis. The Brazilian generation companies are included as they are also subject to regulatory intervention.

## About this Rating Methodology

Moody's approach to rating companies in the regulated electric and gas utility sector, as outlined in this rating methodology, incorporates the following steps:

## 1. Identification of the Key Rating Factors

In general, Moody's rating committees for the regulated electric and gas utility sector focus on a number of key rating factors which we identify and quantify in this methodology. A change in one or more of these factors, depending on its weighting, is likely to influence a utility's overall business and financial risk. We have identified the following four key rating factors and nine sub-factors when assigning ratings to regulated electric and gas utility issuers:

Rating Factor / Sub-Factor Weighting - Regulated Utilities

| Broad Rating Factors | Broad Rating Factor Weighting | Rating Sub-Factor | Sub-Factor Weighting |
| :---: | :---: | :---: | :---: |
| Regulatory Framework | 25\% |  | 25\% |
| Ability to Recover Costs and Earn Returns | 25\% |  | 25\% |
| Diversification | 10\% | Market Position | 5\%* |
|  |  | Generation and Fuel Diversity | 5\%** |
| Financial Strength, Liquidity and Key Financial Metrics | 40\% | Liquidity | 10\% |
|  |  | CFO pre-WC + Interest/ Interest | 7.5\% |
|  |  | CFO pre-WC / Debt | 7.5\% |
|  |  | CFO pre-WC - Dividends / Debt | 7.5\% |
|  |  | Debt/ Capitalization or Debt / Regulated Asset Value | 7.5\% |
| Total | 100\% |  | 100\% |

These factors are critical to the analysis of regulated electric and gas utilities and, in most cases, can be benchmarked across the industry. The discussion begins with a review of each factor and an explanation of its importance to the rating.

## 2. Measurement of the Key Rating Factors

We next explain the elements we consider and the metrics we use to measure relative performance on each of the four factors. Some of these measures are quantitative in nature and can be specifically defined. However, for other factors, qualitative judgment or observation is necessary to determine the appropriate rating category.

Moody's ratings are forward looking and attempt to rate through the industry's characteristic volatility, which can be caused by weather variations, fuel or commodity price changes, cost deferrals, or reasonable delays in regulatory recovery. The rating process also makes extensive use of historic financial statements. Historic results help us understand the pattern of a utility's financial and operating performance and how a utility compares to its peers. While rating committees and the rating process use both historical and projected financial results, this document makes use only of historic data, and does so solely for illustrative purposes. All financial measures incorporate Moody's standard adjustments to income statement, cash flow statement, and balance sheet amounts for (among other things) underfunded pension obligations and operating leases.

## 3. Mapping Factors to Rating Categories

After identifying the measurement criteria for each factor, we match the performance of each factor and subfactor to one of Moody's broad rating categories (Aaa, Aa, A, Baa, Ba, and B). In this report, we provide a

## Regulated Electric and Gas Utilities

range or description for each of the measurement criteria. For example, we specify what level of CFO pre-WC plus Interest/Interest is generally acceptable for an A credit versus a Baa credit, etc.

## 4. Mapping I ssuers to the Grid and Discussion of Grid Outliers

For each factor and sub-factor, we provide a table showing how a subset of the companies covered by the methodology maps within the specific factors and sub-factors. We recognize that any given company may perform higher or lower on a given factor than its actual rating level will otherwise indicate. These companies are identified as "outliers" for that factor. A company whose performance is two or more broad rating categories higher than its rating is deemed a positive outlier for that factor. A company whose performance is two or more broad rating categories below is deemed a negative outlier. We also discuss the general reasons for such outliers for each factor.

## 5. Discussion of Assumptions, Limitations and Other Rating Considerations

This section discusses limitations in the use of the grid to map against actual ratings as well as limitations and key assumptions that pertain to the overall rating methodology.

## 6. Determining the Overall Grid-I ndicated Rating

To determine the overall rating, each of the factors and sub-factors is converted into a numeric value based on the following scale:

Ratings Scale

| Aaa | Aa | A | Baa | Ba | B |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 3 | 6 | 9 | 12 | 15 |

Each sub-factor's numeric value is multiplied by an assigned weight and then summed to produce a composite weighted-average score. The total sum of the factors is then mapped to the ranges specified in the table below, and the indicated alpha-numeric rating is determined based on where the total score falls within the ranges.

Factor Numerics

## Composite Rating

Indicated Rating

## Aaa

## Aal

Aa2
Aa3
A1
A2
A3
Baal
Baa2
Baa3
Ba1
Ba2
Ba3
B1
B2
B3

Aggregate Weighted Factor Score

## $<1.5$

$1.5<2.5$
$2.5<3.5$
$3.5<4.5$
$4.5<5.5$
$5.5<6.5$
$6.5<7.5$
$7.5<8.5$
$8.5<9.5$
$9.5<10.5$
$10.5<11.5$
$11.5<12.5$
$12.5<13.5$
$13.5<14.5$
$14.5<15.5$
$15.5<16.5$

## Regulated Electric and Gas Utilities

For example, an issuer with a composite weighting factor score of 8.2 would have a Baa1 grid-indicated rating. We use a similar procedure to derive the grid-indicated ratings in the tables embedded in the discussion of each of the four broad rating categories.

## The Key Rating Factors

Moody's analysis of electric and gas utilities focuses on four broad factors:

1. Regulatory Framework
2. Ability to Recover Costs and Earn Returns
3. Diversification
4. Financial Strength and Liquidity

## Rating Factor 1: Regulatory Framework (25\%)

## Why it Matters

For a regulated utility, the predictability and supportiveness of the regulatory framework in which it operates is a key credit consideration and the one that differentiates the industry from most other corporate sectors. The most direct and obvious way that regulation affects utility credit quality is through the establishment of prices or rates for the electricity, gas and related services provided (revenue requirements) and by determining a return on a utility's investment, or shareholder return. The latter is largely addressed in Factor 2, Ability to Recover Cost and Earn Returns, discussed below. However, in addition to rate setting, there are numerous other less visible or more subtle ways that regulatory decisions can affect a utility's business position. These can include the regulators' ability to pre-approve recovery of investments for new generation, transmission or distribution; to allow the inclusion of generation asset purchases in utility rate bases; to oversee and ultimately approve utility mergers and acquisitions; to approve fuel and purchased power recovery; and to institute or increase ring-fencing provisions.

## How We Measure It for the Grid

For a regulated utility company, we consider the characteristics of the regulatory environment in which it operates. These include how developed the regulatory framework is; its track record for predictability and stability in terms of decision making; and the strength of the regulator's authority over utility regulatory issues. A utility operating in a stable, reliable, and highly predictable regulatory environment will be scored higher on this factor than a utility operating in a regulatory environment that exhibits a high degree of uncertainty or unpredictability. Those utilities operating in a less developed regulatory framework or one that is characterized by a high degree of political intervention in the regulatory process will receive the lowest scores on this factor. Consideration is given to the substance of any regulatory ring fencing provisions, including restrictions on dividends; restrictions on capital expenditures and investments; separate financing provisions; separate legal structures; and limits on the ability of the regulated entity to support its parent company in times of financial distress. The criteria for each rating category are outlined in the factor description within the rating grid.

For regulated electric utilities with some unregulated operations, consideration will be given to the competitive and business position of these unregulated operations ${ }^{3}$. Moody's views unregulated operations that have minimal or limited competition, large market shares, and statutorily protected monopoly positions as having substantially less risk than those with smaller market shares or in highly competitive environments. Those businesses with the latter characteristics usually face a higher likelihood of losing customers, revenues, or market share. For electric utilities with a significant amount of such unregulated operations, a lower score could be assigned to this factor than would be if the utility had solely regulated operations.

Moody's views the regulatory risk of U.S. utilities as being higher in most cases than that of utilities located in some other developed countries, including Japan, Australia, and Canada The difference in risk reflects our view that individual state regulation is less predictable than national regulation; a highly fragmented market in the U.S. results in stronger competition in wholesale power markets; U.S. fuel and power markets are more

[^1]
## Regulated Electric and Gas Utilities

volatile; there is a low likelihood of extraordinary political action to support a failing company in the U.S.; holding company structures limit regulatory oversight; and overlapping or unclear regulatory jurisdictions characterize the U.S. market. As a result, no U.S. utilities, except for transmission companies subject to federal regulation, score higher than a single $A$ in this factor.

The scores for this factor replace the classifications we had been using to assess a utility's regulatory framework, namely, the Supportiveness of Regulatory Environment (SRE) framework, outlined in our previous rating methodology (Global Regulated Electric Utilities, March 2005), which we are phasing out. Generally speaking, an SRE 1 score from our previous methodology would roughly equate to Aaa or Aa ratings in this methodology; an SRE 2 score to A or high Baa; an SRE 3 score to low Baa or Ba, and an SRE 4 score to a B. For U.S. and Canadian LDCs, this factor corresponds to the "Regulatory Support" and "Ring-fencing" factors in our previous methodology (North American Regulated Gas Distribution, October 2006).

## Factor 1 - Regulatory Framework (25\%)

Regulatory framework is Regulatory framework is Regulatory framework fully developed, has a long-track record of being predictable and stable, and is highly supportive of utilities. Utility regulatory body is a highly rated sovereign or strong independent regulator with unquestioned authority over utility regulation that is national in scope.
fully developed, has is fully developed, has been mostly predictable and stable in recent years, and is mostly supportive of utilities. Utility regulatory body is a sovereign, sovereign agency, provincial, or independent regulator with authority over most utility regulation that is national in scope. sometimes less supportive of utilities. Utility regulatory body may be a state commission or national, state, provincial or independent regulator.

Regulatory framework is
a) well-developed, with evidence of some inconsistency or unpredictability in the way framework has been applied, or framework is new and untested, but based on well-developed and established precedents, or b) jurisdiction has history of independent and transparent regulation in other sectors. Regulatory environment may sometimes be challenging and politically charged.

Regulatory framework is Regulatory framework is developed, but there is less developed, is a high degree of inconsistency or unpredictability in the way the framework has been applied. Regulatory environment is consistently challenging and politically charged. There has been a history of difficult or less supportive regulatory decisions, or regulatory authority has been or may be challenged or erod by political or legislative action.
unclear, is undergoing substantial change or has a history of being unpredictable or adverse to utilities. Utility regulatory body lacks a consistent track record or appears unsupportive, uncertain, or highly unpredictable. May be high risk of nationalization or other significant government intervention in utility operations or markets.
$\qquad$

# Rating Factor 2: Ability to Recover Costs and Earn Returns (25\%) 

## Why It Matters

Unlike Factor 1, which considers the general regulatory framework under which a utility operates and the overall business position of a utility within that regulatory framework, this factor addresses in a more specific manner the ability of an individual utility to recover its costs and earn a return. The ability to recover prudently incurred costs in a timely manner is perhaps the single most important credit consideration for regulated utilities as the lack of timely recovery of such costs has caused financial stress for utilities on several occasions. For example, in four of the six major investor-owned utility bankruptcies in the United States over the last 50 years, regulatory disputes culminated in insufficient or delayed rate relief for the recovery of costs and/or capital investment in utility plant. The reluctance to provide rate relief reflected regulatory commission concerns about the impact of large rate increases on customers as well as debate about the appropriateness of the relief being sought by the utility and views of imprudency. Currently, the utility industry's sizable capital expenditure requirements for infrastructure needs will create a growing and ongoing need for rate relief for recovery of these expenditures at a time when the global economy has slowed.

## How We Measure It for the Grid

For regulated utilities, the criteria we consider include the statutory protections that are in place to insure full and timely recovery of prudently incurred costs. In its strongest form, these statutory protections provide unquestioned recovery and preclude any possibility of legal or political challenges to rate increases or cost recovery mechanisms. Historically, there should be little evidence of regulatory disallowances or delays to

## Regulated Electric and Gas Utilities

rate increases or cost recovery. These statutory protections are most often found in strongly supportive and protected regulatory environments such as Japan, for example, where the utilities in that country receive a score of Aa for this factor.

More typically, however, and as is characteristic of most utilities in the U.S., the ability to recover costs and earn authorized returns is less certain and subject to public and sometimes political scrutiny. Where automatic cost recovery or pass-through provisions exist and where there have been only limited instances of regulatory challenges or delays in cost recovery, a utility would likely receive a score of A for this factor. Where there may be a greater tendency for a regulator to challenge cost recovery or some history of regulators disallowing or delaying some costs, a utility would likely receive a Baa rating for this factor. Where there are no automatic cost recovery provisions, a history of unfavorable rate decisions, a politically charged regulatory environment, or a highly uncertain cost recovery environment, lower scores for this factor would apply.

For regulated electric utilities that have some unregulated operations, we assess the likelihood that the utility will be able to pass on costs of its unregulated businesses to unregulated customers. Among the criteria we use to judge this factor include the number and types of different businesses the company is in; its market share in these businesses; whether there are significant barriers to entry for new competitors; and the degree to which the utility is vertically integrated. Those utilities with several businesses with large market shares are generally in a better position to pass on their costs to unregulated customers. Those utilities that have lower market shares in their unregulated activities or are in businesses with few barriers to entry will likely be more at risk in passing on costs, and thus would receive lower scores. A high proportion of unregulated businesses or a higher risk of passing on costs to unregulated customers could result in a lower score for this factor than would apply if the business was completely regulated.

For U.S. and Canadian LDCs, this factor addresses the "Sustainable Profitability" and "Regulatory Support" assessments in the previous LDC rating methodology. While LDCs' authorized returns are comparable to those for their electric counterparts, the smaller, more mature LDCs tend to face less regulatory challenges. Purchased Gas Adjustment mechanisms are the norm and they have made strides in implementing alternative rate designs that decouple revenues from volumes sold.

| Factor 2 - Ability to Recover Costs and Earn Returns (25\%) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Aaa | Aa | A | Baa | Ba | B |
| Rate/tariff formula allows unquestioned full and timely cost recovery, with statutory provisions in place to preclude any possibility of challenges to rate increases or cost recovery mechanisms. | Rate/ tariff formula generally allows full and timely cost recovery. Fair return on all investments. Minimal challenges by regulators to companies' cost assumptions; consistent track record of meeting efficiency tests. | Rate/ tariff reviews and cost recovery outcomes are fairly predictable (with automatic fuel and purchased power recovery provisions in place where applicable), with a generally fair return on investments. <br> Limited instances of regulatory challenges; although efficiency tests may be more challenging; limited delays to rate or tariff increases or cost recovery. | Rate/ tariff reviews and cost recovery outcomes are usually predictable, although application of tariff formula may be relatively unclear or untested. Potentially greater tendency for regulatory intervention, or greater disallowance (e.g. challenging efficiency assumptions) or delaying of some costs (even where automatic fuel and purchased power recovery provisions are applicable). | Rate/tariff reviews and cost recovery outcomes are inconsistent, with some history of unfavorable regulatory decisions or unwillingness by regulators to make timely rate changes to address market volatility or higher fuel or purchased power costs. <br> AND/ OR <br> Tariff formula may not take into account all cost components; investment are not clearly or fairly remunerated. | Difficult or highly uncertain rate and cost recovery outcomes. Regulators may engage in second-guessing of spending decisions or deny rate increases or cost recovery needed by utilities to fund ongoing operations, or high likelihood of politically motivated interference in the rate/ tariff review process. <br> AND/ OR <br> Tariff formula may not cover return on investments, only cash operating costs may be remunerated. |

## Rating Factor 3 - Diversification (10\%)

## Why It Matters

Diversification of overall business operations helps to mitigate the risk that any one part of the company will have a severe negative impact on cash flow and credit quality. In general, a balance among several different businesses, geographic regions, regulatory regimes, generating plants, or fuel sources will diminish concentration risk and reduce the risk that a company will experience a sudden or rapid deterioration in its overall creditworthiness because of an adverse development specific to any one part of its operations.

## How We Measure It For the Grid

For transmission and distribution utilities, local gas distribution companies, and other companies without significant generation, the key criterion we use is the diversity of their operations among various markets, geographic regions or regulatory regimes. For these utilities, the first set of criteria, labeled market diversification, account for the full $10 \%$ weighting for this factor. A predominately T\&D utility with a high degree of diversification in terms of market and/or regulatory regime is less likely to be affected by adverse or unexpected developments in any one of these markets or regimes, and thus will receive the highest scores for this factor. Smaller T\&D utilities operating in a limited market area or under the jurisdiction of a single regulatory regime will score lower on the factor, with those that are concentrated in an emerging market or riskier environment receiving the lowest scores.

For vertically integrated utilities with generation, the diversification factor is broadened to include not only the criteria discussed above, but also takes into consideration the diversity of their generating assets and the type of fuel sources which they rely on. An additional but somewhat related consideration is the degree to which the utility is exposed to (or insulated from) commodity price changes. A utility with a highly diversified fleet of generating assets using different types of fuels is generally better able to withstand changes in the price of a particular fuel or additional costs required for particular assets, such as more stringent environmental compliance requirements, and thus would receive a higher rating for this sub-factor. Those utilities with more limited diversification or that are more reliant on a single type of generation and fuel source (measured by energy produced) will be scored lower on this sub-factor. Similarly, those utilities with a high reliance on coal and other carbon emitting generating resources will be scored lower on this factor due to their vulnerability to potential carbon regulations and accompanying carbon costs.

Generally, only the largest vertically integrated utilities or transmission companies with substantial operations that are multinational or national in scope, or whose operations encompass a substantial region within a single country, will receive scores in the highest Aaa or Aa categories for this factor. In the U.S., most of the largest multi-state or multi-regional utilities are scored in the A category, most of the larger single state utilities are scored Baa, and smaller utilities operating in a single state or within a single city are scored Ba. A utility may also be scored higher if it is a combination electric and gas utility, which enhances diversification.

The diversification factor was not included in the previous North American LDC methodology. Most LDCs are small and tend to have little geographic and regulatory diversity. However, they tend to be highly stable due to their customer base and margins that comprise primarily of a large number of residential and small commercial customers that are captive to the utility. This customer composition tends to result in a more stable operating performance than those that have concentrations in certain industrial customers that are prone to cyclicality or to bypassing the LDC to obtain gas directly from a pipeline. Pure LDCs are scored under the "Market Position" sub-factor for a full $100 \%$ under this factor. As with transmission and distribution utilities, no scores are given for "Fuel/Generation Diversification" as this sub-factor would not be applicable.

## Regulated Electric and Gas Utilities

Factor 3: Diversification (10\%)

|  | Aaa | Aa | A | Baa | Ba | B | Sub- <br> Factor Weighting |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Market Position | A high degree of multinational/ regional diversification in terms of market and/ or regulatory regime. | Material operations in more than three nations or geographic regions providing diversification of market and/ or regulatory regime. | Material operations in two or three states, nations, or geographic regions and exhibits some diversification of market and/ or regulatory regime. | Operates in a single state, nation, or economic region with low volatility with some concentration of market and/ or regulatory regime. | Operates in a limited market area with material concentration in market and/ or regulatory regime. | Operates in a single market which may be an emerging market or riskier environment, with high concentration risk. | 5\%* |
|  | For LDCs, extremely low reliance on industrial customers and/ or exceptionally large residential and commercial customer base and well above average growth. | For LDCs, very low reliance on industrial customers and/ or very large residential and commercial customer base with very high growth. | For LDCs, Iow reliance on industrial customers and/ or high residential and commercial customer base with high growth. | For LDCs, moderate reliance on industrial customers in defensive sectors, moderate residential and customer base. | For LDCs, high reliance on industrial customers in somewhat cyclical sectors, small residential and commercial customer base. | For LDCs, very high reliance on industrial customers in cyclical sectors, very small residential and commercial customer base. |  |
| Generation and Fuel Diversity | A high degree of diversification in terms of generation and/ or fuel source, well insulated from commodity price changes, no generation concentration, or 0-20\% of generation from carbon fuels. | Some diversification in terms of generation and/ or fuel source, affected only minimally by commodity price changes, little generation concentration, or $20-40 \%$ of generation from carbon fuels. | May have some concentration in one particular type of generation or fuel source, although mostly diversified, modest exposure to commodity price changes, or 40-55\% of generation from carbon fuels. | Some reliance on a single type of generation or fuel source, limited diversification, moderate exposure to commodity prices, or 55$70 \%$ of generation from carbon fuels. | Operates with little diversification in terms of generation and/ or fuel source, high exposure to commodity price changes, or 7085\% of generation from carbon fuels. | High concentration in a single type of generation or highly reliant on a single fuel source, little diversification, may be exposed to commodity price shocks, or 85-100\% of generation from carbon fuels. | 5\%** |
| *10\% weight for issuers that lack generation **0\% weight for issuers that lack generation |  |  |  |  |  |  |  |

## Rating Factor 4 - Financial Strength and Liquidity (40\%)

## Why It Matters

Since most electric and gas utilities are highly capital intensive, financial strength and liquidity are key credit factors supporting their long-term viability. Financial strength and liquidity are also important to the maintenance of good relationships with regulators, to assure adequate regulatory responsiveness to rate increase requests and for cost recovery, and to avoid the need for sudden or unexpected rate increases to avoid financial problems. Financial strength is also important due to the ongoing need to invest in generation, transmission, and distribution assets that often require substantial amounts of debt financing. Utilities are among the largest debt issuers in the world and typically require consistent access to the capital markets to assure adequate sources of funding and to maintain financial flexibility.

Although ratio analysis is a helpful way of comparing one company's performance to that of another, no single financial ratio can adequately convey the relative credit strength of these highly diverse companies. The relative strength of a company's financial ratios must take into consideration the level of business risk associated with the more qualitative factors in the methodology. Companies with a lower business risk can have weaker credit metrics than those with higher business risk for the same rating category.

## Regulated Electric and Gas Utilities

Given the long-term nature of many of the capital intensive projects undertaken in the industry and the need to obtain regulatory recovery over an often multi-year time period, it is important to analyze both a utility's historical financial performance as well as its prospective future performance, which may be different from the historic measures. Scores under this factor may be higher or lower than what might be expected from historical results, depending on our view of expected future performance.

## How We Measure It For the Grid

In addition to assigning a score for a utility's overall liquidity position and relative access to funding sources and the capital markets, we have identified four key core ratios that we consider the most useful in the analysis of regulated electric and gas utilities. The four ratios are the following:

- Cash from Operations (CFO) pre-Working Capital Plus Interest / Interest
- Cash from Operations (CFO) pre-Working Capital / Debt
- Cash from Operations (CFO) pre-Working Capital - Dividends / Debt
- Debt/Capitalization or Debt / Regulated Asset Value (RAV)

The use of Debt / Capitalization or Debt / Regulated Asset Value will depend largely on the regulatory regime in which the utility operates, as explained below. These credit metrics incorporate all of the standard adjustments applied by Moody's when analyzing financial statements, including adjustments for certain types of off-balance sheet financings and certain other reclassifications in the income statement and cash flow statement.

These cash flow based ratios replace the earnings based metrics in the previous "North American Local Gas Distribution Company" rating methodology, reducing the impact on the grid results from non-cash items, such as pension expense.

The ratio calculations utilized and published for the companies covered by this methodology (including the 30 representative electric and gas utility companies highlighted) are historical three-year averages for the years 2006-2008. Three-year averages are used in part to smooth out some of the year to year volatility in financial performance and financial statement ratios.

## Measurement Criteria

## Liquidity

Liquidity analysis is a key element in the financial analysis of electric and gas utilities and encompasses a company's ability to generate cash from internal sources, as well as the availability of external sources of financings to supplement these internal sources. Sources of funds are compared to a company's cash needs and other obligations over the next twelve months. The highest "Aaa" and "Aa" scores under this sub-factor would be assigned to those utilities that are financially robust under all or virtually all scenarios, with little to no need for external funding and with unquestioned or superior access to the capital markets. Most utilities, however, receive more moderate scores of between "A" and "Baa" in this sub-factor as most need to rely to some degree on external funding sources to finance capital expenditures and meet other capital needs. Below investment grade scores on the sub-factor are assigned to utilities with weak liquidity or those that rely heavily on debt to finance investments.

## CFO pre-Working Capital Plus Interest/Interest or Cash Flow Interest Coverage

The cash flow interest coverage ratio is a basic measure of a utility's ability to cover the cost of its borrowed capital and is an important analytical tool in this highly capital intensive industry. The numerator in the ratio calculation is a measure of cash flow excluding working capital movements plus interest expense, which can vary in significance depending on the utility. The use of CFO pre-WC is more comprehensive than Funds from Operations (FFO) under U.S. Generally Accepted Accounting Principles (GAAP) since it also captures the changes in long-term regulatory assets and liabilities. However, under International Financial Reporting Standards (IFRS), the two measures are essentially the same. The denominator in the ratio calculation is interest expense, which incorporates our standard adjustments to interest expense, such as including

## Regulated Electric and Gas Utilities

capitalized interest and re-classifying the interest component of operating lease rental expense. In Brazil, the cash interest amount is adjusted by the variation of non-cash financial expenses derived from foreign exchange and inflation denominated debt.

## CFO pre-Working Capital / Debt

This metric measures the cash generating ability of a utility compared to the aggregate level of debt on the balance sheet. This ratio is useful in comparing utilities, many of which maintain a significant amount of leverage in their capital structure. The debt calculation takes into consideration Moody's standard adjustments to balance sheet debt, such as for operating leases, underfunded pension liabilities, basket-adjusted hybrids, guarantees, and other debt-like items.

## CFO pre-Working Capital - Dividends / Debt

This ratio is a measure of financial leverage as well as an indicator of the strength of a utility's cash flow after dividend payments are made. Dividend obligations of utilities are often substantial and can affect the ability of a utility to cover its debt obligations. The higher the level of retained cash flow relative to a utility's debt, the more cash the utility has to support its capital expenditure program. Moody's expects that even the financially strongest utilities will need to issue debt on a regular basis to maintain a target capital structure if their asset bases are growing. If a utility with an expanding asset base funds all of its capital expenditures with internally generated cash flow then, in the extreme, the utility's debt to capitalization will trend toward zero.

## Debt/Capitalization or Debt/Regulated Asset Value or RAV

This ratio is a traditional measure of leverage and can be a useful way to gauge a utility's overall financial flexibility in light of its overall debt load. High debt to capitalization levels are not only an indicator of higher interest obligations, but can also limit the ability of a utility to raise additional financing if needed and can lead to leverage covenant violations in bank credit facilities or other financing agreements. The denominator of the debt / capitalization ratio includes Moody's standard adjustments, the most important of which for some utilities is the inclusion of deferred taxes in capitalization, which tempers the impact of our debt adjustment.

While debt/capitalization is used predominantly in the Americas, other regions may use a variation of this ratio, namely, debt/regulated asset value or RAV ratio. The regulated asset base is comprised of the physical assets that are used to provide regulated distribution services and the RAV represents the value on which the utility is permitted to earn a return. RAV can be calculated in various ways, using different rules that can be revised periodically, depending on the regulatory regime. Where RAV is calculated using consistent rules (i.e. Australia and Japan), debt/RAV is viewed as superior to debt / capitalization as a credit measure and will be used for this sub-factor. Where RAV does not exist (i.e. North America and most Asian countries) or the method of calculation is subject to arbitrary or unpredictable revisions, we use debt/capitalization.

## Regulated Electric and Gas Utilities

Factor 4: Financial Strength, Liquidity and Key Financial Metrics (40\%)

|  | Aaa | Aa | A | Baa | Ba | B | Sub-Factor Weighting |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Liquidity | Financially robust under all scenarios with no need for external funding, unquestioned access to the capital markets, and excellent liquidity. | Financially robust under virtually all scenarios with little to no need for external funding, superior access to the capital markets, and very strong liquidity. | Financially strong under most scenarios with some reliance on external funding, solid access to the capital markets, and strong liquidity. | Some reliance on external funding and liquidity is more likely to be affected by external events, good access to the capital markets, and adequate liquidity under most scenarios. | Weak liquidity with more susceptibility to external shocks or unexpected events. Significant reliance on debt funding. Bank financing may be secured and there may be limited headroom under covenants. | Very weak liquidity with limited ability to withstand external shocks or unexpected events. Must use debt to finance investments. Bank financing is normally secured and there may be a high likelihood of breaching one or more covenants. | 10\% |
| CFO pre-WC + Interest/ Interest | >8.0x | $6.0 x-8.0 x$ | $4.5 \mathrm{x}-6.0 \mathrm{x}$ | $2.7 x-4.5 x$ | $1.5 x-2.7 x$ | <1.5x | 7.5\% |
| $\begin{aligned} & \text { CFO pre-WC/ } \\ & \text { Debt } \end{aligned}$ | > 40\% | 30\%-40\% | 22\%-30\% | 13\%-22\% | 5\%-13\% | < $5 \%$ | 7.5\% |
| CFO pre-WC Dividends/ Debt | >35\% | 25\%-35\% | 17\%-25\% | 9\%-17\% | 0\%-9\% | <0\% | 7.5\% |
| Debt/ Capitalization Debt/ RAV | $\begin{aligned} & <25 \% \\ & <30 \% \end{aligned}$ | $\begin{aligned} & 25 \%-35 \% \\ & 30 \%-45 \% \end{aligned}$ | $\begin{aligned} & 35 \%-45 \% \\ & 45 \%-60 \% \end{aligned}$ | $\begin{aligned} & 45 \%-55 \% \\ & 60 \%-75 \% \end{aligned}$ | $\begin{aligned} & 55 \%-65 \% \\ & 75 \%-90 \% \end{aligned}$ | $\begin{aligned} & >65 \% \\ & >90 \% \end{aligned}$ | $\begin{aligned} & 7.5 \% \\ & 7.5 \% \end{aligned}$ |

## Rating Methodology Assumptions and Limitations, and other Rating Considerations

The rating methodology grid incorporates a trade-off between simplicity that enhances transparency and greater complexity that would enable the grid to map more closely to actual ratings. The four rating factors in the grid do not constitute an exhaustive treatment of all of the considerations that are important for ratings of companies in the regulated electric and gas utility sector. In addition, our ratings incorporate expectations for future performance, while the financial information that is used to illustrate the mapping in the grid is mainly historical. In some cases, our expectations for future performance may be impacted by confidential information that we cannot publish. In other cases, we estimate future results based upon past performance, industry trends, and other factors. In either case, we acknowledge that estimating future performance is subject to the risk of substantial inaccuracy.

In choosing metrics for this rating methodology grid, we did not include certain important factors that are common to all companies in any industry, such as the quality and experience of management, assessments of corporate governance, financial controls, and the quality of financial reporting and information disclosure. The assessment of these factors can be highly subjective and ranking them by rating category in a grid would in some cases suggest too much precision in the relative ranking of particular issuers against all other issuers that are rated in various industry sectors.

Ratings may include additional factors that are difficult to quantify or that only have a meaningful effect in differentiating credit quality in some cases. Such factors include environmental obligations, nuclear decommissioning trust obligations, financial controls, and emerging market risk, where ratings might be

## Regulated Electric and Gas Utilities

constrained by the uncertainties associated with the local operating, political and economic environment, including possible government interference.

Actual assigned ratings may also reflect circumstances in which the weighting of a particular factor will be different from the weighting suggested by the grid. For example, although Factors 1 and 2 address regulation and cost recovery, in some instances the effect of a company's financial strength and liquidity in Factor 4 will be given greater consideration in an assigned rating than what is indicated by the weighting in the grid.

## Conclusion: Summary of the Grid-Indicated Rating Outcomes

For the 30 representative utilities highlighted, the methodology grid-indicated ratings map to current assigned ratings as follows (see Appendix $B$ for the details):

- $30 \%$ or 9 companies map to their assigned rating
- $50 \%$ or 15 companies have grid-indicated ratings that are within one alpha-numeric notch of their assigned rating
- $20 \%$ or 6 companies have grid-indicated ratings that are within two alpha-numeric notches of their assigned rating

| Grid-I ndicated Rating Outcomes |  |  |
| :--- | :--- | :--- |
| Map to Assigned Rating | Map to Within One Notch | Map to Within Two Notches |
| American Electric Power Company, Inc. | Cemig Distribuicao S. A. | Duke Energy Corporation |
| Arizona Public Service Company | Consolidated Edison Company of New York | Eesti Energia AS |
| CLP Holdings Limited | Dominion Resources, Inc. | Eskom Holdings Ltd |
| Consumers Energy Company | EDP - Energias do Brasil S.A. | Korea Electric Power Corporation |
| Florida Power \& Light Company | Emera Incorporated | Northern Illinois Gas Company |
| PG\&E Corporation | The Empire District Electric Company | Tokyo Electric Power Company |
| Piedmont Natural Gas Company, Inc. | FirstEnergy Corp. |  |
| The Southern Company | Indianapolis Power \& Light Company |  |
| Xcel Energy Inc. | Kyushu Electric Power Company |  |
|  | Oklahoma Gas and Electric Co. |  |
|  | PECO Energy Company |  |
|  | Progress Energy Carolinas, Inc. |  |
|  | Southern California Edison Company |  |
|  | Westar Energy, Inc. |  |
|  | Wisconsin Power and Light Company |  |

## Appendix A: Regulated Electric and Gas Utilities Methodology Factor Grid

## Factor 1: Regulatory Framework

| Weighting: 25\% | Aəa | Aa | A | Baa | Ba | B | Sub-Factor Weighting |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Regulatory framework is fully developed, has a long-track record of being predictable and stable, and is highly supportive of utilities. Utility regulatory body is a highly rated sovereign or strong independent regulator with unquestioned authority over utility regulation that is national in scope. | Regulatory framework is fully developed, has been mostly predictable and stable in recent years, and is mostly supportive of utilities. Utility regulatory body is a sovereign, sovereign agency, provincial, or independent regulator with authority over most utility regulation that is national in scope. | Regulatory framework is fully developed, has above average predictability and reliability, although is sometimes less supportive of utilities. Utility regulatory body may be a state commission or national, state, provincial or independent regulator. | Regulatory framework is a) well-developed, with evidence of some inconsistency or unpredictability in the way framework has been applied, or framework is new and untested, but based on well-developed and established precedents, or b) jurisdiction has history of independent and transparent regulation in other sectors. Regulatory environment may sometimes be challenging and politically charged. | Regulatory framework is developed, but there is a high degree of inconsistency or unpredictability in the way the framework has been applied. Regulatory environment is consistently challenging and politically charged. There has been a history of difficult or less supportive regulatory decisions, or regulatory authority has been or may be challenged or eroded by political or legislative action. | Regulatory framework is less developed, is unclear, is undergoing substantial change or has a history of being unpredictable or adverse to utilities. Utility regulatory body lacks a consistent track record or appears unsupportive, uncertain, or highly unpredictable. May be high risk of nationalization or other significant government intervention in utility operations or markets. | 25\% |

## Factor 2: Ability to Recover Costs and Earn Returns

Weighting:
25\%

Aaa
Rate/ tariff formula allows unquestioned full and timely cost recovery, with statutory provisions in place to preclude any possibility of challenges to rate increases or cost recovery mechanisms.

## Aa

Rate/ tariff formula generally allows full and timely cost recovery. Fair return on all investments. Minimal challenges by regulators to companies' cost assumptions; consistent track record of meeting efficiency tests

A
Rate/ tariff reviews and cost recovery outcomes are fairly predictable (with automatic fuel and purchased power recovery provisions in place where
applicable), with a generally fair return on investments. Limited instances of regulatory challenges; although efficiency tests may be more challenging: limited delays to rate or tariff increases or cost recovery.

## Baa

Rate/ tariff reviews and cost recovery outcomes are usually predictable, although application of tariff formula may be relatively unclear or untested. Potentially greater tendency for regulatory intervention, or greater disallowance (e.g. challenging efficiency assumptions) or delaying of some costs (even where automatic fuel and purchased power recovery provisions are applicable).

## Ba

Rate/ tariff reviews and cost recovery outcomes are inconsistent, with some history of unfavorable regulatory decisions or unwillingness by regulators to make timely rate changes to address market volatility or higher fuel or purchased power costs. AND/ OR Tariff formula may not take into account all cost components; investment are not clearly or fairly remunerated.

## B

Difficult or highly uncertain rate and cost recovery outcomes. Regulators may engage in second-guessing of spending decisions or deny rate increases or cost recovery needed by utilities to fund ongoing operations, or high likelihood of politically motivated interference in the rate/ tariff review process.

AND/ OR
Tariff formula may not cover return on investments, only cash operating costs may be remunerated.

## Regulated Electric and Gas Utilities

## Factor 3: Diversification

| Weighting: 10\% | A®a | Aa | A | Baa | Ba | B | Sub-Factor Weighting |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Market <br> Position | A high degree of multinational/ regional diversification in terms of market and/ or regulatory regime. | Material operations in more than three nations or geographic regions providing diversification of market and/ or regulatory regime. | Material operations in two or three states, nations, or geographic regions and exhibits some diversification of market and/ or regulatory regime. | Operates in a single state, nation, or economic region with low volatility with some concentration of market and/ or regulatory regime. | Operates in a limited market area with material concentration in market and/ or regulatory regime. | Operates in a single market which may be an emerging market or riskier environment, with high concentration risk. | 5\%* |
|  | For LDCs, extremely low reliance on industrial customers and/ or exceptionally large residential and commercial customer base and well above average growth. | For LDCs, very low reliance on industrial customers and/ or very large residential and commercial customer base with very high growth. | For LDCs, low reliance on industrial customers and/ or high residential and commercial customer base with high growth. | For LDCs, moderate reliance on industrial customers in defensive sectors, moderate residential and customer base. | For LDCs, high reliance on industrial customers in somewhat cyclical sectors, small residential and commercial customer base. | For LDCs, very high reliance on industrial customers in cyclical sectors, very small residential and commercial customer base. |  |
| Generation and Fuel Diversity | A high degree of diversification in terms of generation and/ or fuel source, well insulated from commodity price changes, no generation concentration, or 0-20\% of generation from carbon fuels. | Some diversification in terms of generation and/ or fuel source, affected only minimally by commodity price changes, little generation concentration, or 2040\%of generation from carbon fuels. | May have some concentration in one particular type of generation or fuel source, although mostly diversified, modest exposure to commodity price changes, or 4055\%of generation from carbon fuels. | Some reliance on a single type of generation or fuel source, limited diversification, moderate exposure to commodity prices, or 55$70 \%$ of generation from carbon fuels. | Operates with little diversification in terms of generation and/ or fuel source, high exposure to commodity price changes, or $70-85 \%$ of generation from carbon fuels. | High concentration in a single type of generation or highly reliant on a single fuel source, little diversification, may be exposed to commodity price shocks, or 85-100\% of generation from carbon fuels. | 5\%** |

## Regulated Electric and Gas Utilities

Factor 4: Financial Strength, Liquidity and Key Financial Metrics

| Weighting: 40\% | Aaa | Aa | A | Baa | Ba | B | Sub-Factor Weighting |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Liquidity | Financially robust under all scenarios with no need for external funding, unquestioned access to the capital markets, and excellent liquidity. | Financially robust under virtually all scenarios with little to no need for external funding, superior access to the capital markets, and very strong liquidity. | Financially strong under most scenarios with some reliance on external funding, solid access to the capital markets, and strong liquidity. | Some reliance on external funding and liquidity is more likely to be affected by external events, good access to the capital markets, and adequate liquidity under most scenarios. | Weak liquidity with more susceptibility to external shocks or unexpected events. Significant reliance on debt funding. Bank financing may be secured and there may be limited headroom under covenants. | Very weak liquidity with limited ability to withstand external shocks or unexpected events. Must use debt to finance investments. Bank financing is normally secured and there may be a high likelihood of breaching one or more covenants. | 10\% |
| CFO pre-WC <br> + Interest/ <br> Interest | >8.0x | 6. $0 x-8.0 x$ | $4.5 x-6.0 x$ | 2. $7 x-4.5 x$ | 1.5x-2.7x | $<1.5 \mathrm{x}$ | 7.5\% |
| ```CFO pre-WC/ Debt``` | >40\% | 30\%-40\% | 22\%-30\% | 13\%-22\% | 5\%-13\% | < $5 \%$ | 7.5\% |
| CFO pre-WC <br> - Dividends/ <br> Debt | >35\% | 25\%-35\% | 17\%-25\% | 9\%-17\% | 0\%-9\% | <0\% | 7.5\% |
| Debt/ <br> Capitalization <br> Debt/ RAV | $\begin{aligned} & <25 \% \\ & <30 \% \end{aligned}$ | $\begin{aligned} & 25 \%-35 \% \\ & 30 \%-45 \% \end{aligned}$ | $\begin{aligned} & 35 \%-45 \% \\ & 45 \%-60 \% \end{aligned}$ | $\begin{aligned} & 45 \%-55 \% \\ & 60 \%-75 \% \end{aligned}$ | $\begin{aligned} & 55 \%-65 \% \\ & 75 \%-90 \% \end{aligned}$ | $\begin{aligned} & >65 \% \\ & >90 \% \end{aligned}$ | $\begin{aligned} & 7.5 \% \\ & 7.5 \% \end{aligned}$ |

## Regulated Electric and Gas Utilities

## Appendix B: Methodology Grid-I ndicated Ratings

| Sub-Factor Weights |  |  | Factor 1: <br> Regulatory <br> Framework | Factor 2: Returns and Cost Recovery | Factor 3: Diversification |  |  | Factor 4: Financial Strength |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 25\% | 25\% |  | 5\% | 5\% |  | 10\% | 7.5\% | 7.5\% |  | 7.5\% |
|  | Current Rating/BCA | Indicated Rating | Regulatory Supportiveness | Rate <br> Adjustment and Cost Recovery Mechanisms | Indicated Factor 3 Rating | Market Position | Fuel or Generation Diversification | Indicated Factor 4 Rating | Liquidity | 3 Year Average CFO pre-WC + Interest/ Interest | 3 Year <br> Average CFO pre-wC / Debt | 3 Year Average CFO preW/C Dividencls / Debt | 3 Year Average Debt / Cap or Debt/RAV |
| Kyushu Electric Power Company, Incorporated | Aa2 | Aa3 | Aaa | Aa | Aa | A | Aaa | A | Aa | Aa | Ba | Ba | Baa |
| Tokyo Electric Power Company, Incorporated | Aa2 | A1 | Aaa | Aa | Aa | A | Aaa | Baa | Aa | A | Ba | Ba | Ba |
| Eesti Energia AS | A1/ [8] | A3 | Baa | Baa | B | B | B | Aa | Baa | Aaa | Aaa | Aaa | Aa |
| Florida Power \& Light Company | A1 | A1 | A | A | Baa | Baa | Baa | Aa | A | Aa | Aa | Aa | A |
| Korea Electric Power Corporation | A2/ [6] | Baal | Baa | Baa | Baa | Baa | A | A | Baa | Aa | A | A | A |
| CLP Holdings Limited | A2 | A2 | A | A | A | A | A | A | A | Aa | A | Baa | A |
| Northern Illinois Gas Company | A2 | Baal | Baa | Baa | A | A | N/ A | Baa | Baa | A | A | Baa | Baa |
| Oklahoma Gas and Electric Company | A2 | A3 | Baa | A | Baa | Baa | Baa | A | A | A | A | A | A |
| Wisconsin Power and Light Company | A2 | A3 | A | A | Baa | Baa | Baa | A | Baa | A | A | Baa | A |
| Consolidated Edison Company of New York | A3 | Baal | Baa | A | Baa | Baa | N/ A | Baa | A | Baa | Baa | Ba | A |
| PECO Energy Company | A3 | Baal | Baa | Baa | Baa | Baa | N/ A | A | A | A | A | Baa | Baa |
| Piedmont Natural Gas Company, Inc. | A3 | A3 | A | A | A | A | N/ A | Baa | Baa | A | Baa | Baa | Baa |
| Progress Energy Carolinas, Inc. | A3 | A2 | A | A | Baa | Baa | A | A | Baa | A | A | A | Baa |
| Southern California Edison Company | A3 | Baal | Baa | Baa | Baa | Baa | A | A | A | A | A | A | Baa |
| The Southern Company | A3 | A3 | A | A | Baa | A | Ba | Baa | A | A | Baa | Baa | Baa |
| PG\&E Corporation | Baal | Baal | Baa | Baa | A | Baa | Aa | Baa | Baa | A | A | A | Baa |
| Xcel Energy Inc. | Baal | Baal | Baa | A | A | A | A | Baa | Baa | Baa | Baa | Baa | Baa |
| American Electric Power Company, Inc. | Baa2 | Baa2 | Baa | Baa | Baa | A | Ba | Baa | Baa | Baa | Baa | Baa | Ba |

3

## Regulated Electric and Gas Utilities

|  |  |  | Factor 1: <br> Regulatory <br> Framework | Factor 2: Returns and Cost Recovery | Factor 3: Diversification |  |  | Factor 4: Financial Strength |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sub-Factor Weights |  |  | 25\% | 25\% |  | 5\% | 5\% |  | 10\% | 7.5\% | 7.5\% | 7.5\% | 7.5\% |
|  | Current Rating/BCA | Indicated Rating | Regulatory Supportiveness | Rate <br> Adjustment and Cost Recovery Mechanisms | Indicated Factor 3 Rating | Market Position | Fuel or Generation Diversification | Indicated Factor 4 Rating | Liquidity | 3 Year Average CFO pre-WC + Interest/ Interest | 3 Year <br> Average CFO pre-wC / Debt | 3 Year Average CFO preW/C Dividends / Debt | 3 Year Averaga Dabt / Cap or Debt/RAV |
| Arizona Public Service Company | Baa2 | Baa2 | Ba | Baa | Baa | Baa | Baa | Baa | Baa | A | Baa | Baa | Baa |
| Consumers Energy Company | Baa2 | Baa2 | Baa | Baa | Baa | Baa | Baa | Baa | Baa | Baa | Baa | Baa | Ba |
| Dominion Resources, Inc. | Baa2 | Baal | Baa | A | A | A | A | Baa | Baa | Baa | Baa | Ba | Baa |
| Duke Energy Corporation | Baa2 | A3 | Baa | A | Baa | A | Baa | A | Baa | A | A | Baa | A |
| Emera Incorporated | Baa2 | Baal | A | A | Ba | Ba | Ba | Ba | Baa | Baa | Ba | Baa | B |
| The Empire District Electric Company | Baa2 | Baa3 | Ba | Baa | Baa | Baa | Baa | Baa | Baa | Baa | Baa | Baa | Baa |
| Eskom Holdings Ltd | Baa2[13] | Bal | Ba | Ba | B | Ba | B | Baa | Ba | Ba | A | A | A |
| Indianapolis Power \& Light Company | Baa2 | Baal | Baa | A | Ba | Baa | Ba | Baa | Baa | A | A | Baa | Baa |
| Cemig Distribuição S.A. | Baa3 | Baa2 | Ba | Ba | Ba | Ba | N/ A | A | Baa | Aa | Aaa | Aa | Ba |
| FirstEnergy Corp. | Baa3 | Baa2 | Baa | Baa | Baa | A | Baa | Baa | Baa | Baa | Baa | Baa | Ba |
| Westar Energy, Inc. | Baa3 | Baa2 | Baa | Baa | Ba | Baa | Ba | Baa | Baa | Baa | Baa | Baa | Baa |
| EDP - Energias do Brasil S.A. | Bal | Baa3 | Ba | Ba | Baa | Baa | Baa | Baa | Ba | Baa | Aa | A | A |
|  |  |  |  |  |  |  |  |  |  |  |  | ositive Outlier gative Outlier |  |

## Appendix C: Observations and Outliers for Grid Mapping

## Results of Mapping Factor 1

| Factor 1: Regulatory Framework |  |  |
| :---: | :---: | :---: |
| Factor Weight |  | 25\% |
|  | Current Rating /BCA | Regulatory Supportiveness |
| Kyushu Electric Power Company, Incorporated | Aa2 | Aaa |
| Tokyo Electric Power Company, Incorporated | Aa2 | Aaa |
| Eesti Energia AS | A1/ [8] | Baa |
| Florida Power \& Light Company | A1 | A |
| Korea Electric Power Corporation | A2/ [6] | Baa |
| CLP Holdings Limited | A2 | A |
| Northern Illinois Gas Company | A2 | Baa |
| Oklahoma Gas and Electric Company | A2 | Baa |
| Wisconsin Power and Light Company | A2 | A |
| Consolidated Edison Company of New York | A3 | Baa |
| PECO Energy Company | A3 | Baa |
| Piedmont Natural Gas Company, Inc. | A3 | A |
| Progress Energy Carolinas, Inc. | A3 | A |
| Southern California Edison Company | A3 | Baa |
| The Southern Company | A3 | A |
| PG\&E Corporation | Baal | Baa |
| Xcel Energy Inc. | Baal | Baa |
| American Electric Power Company, Inc. | Baa2 | Baa |
| Arizona Public Service Company | Baa2 | Ba |
| Consumers Energy Company | Baa2 | Baa |
| Dominion Resources, Inc. | Baa2 | Baa |
| Duke Energy Corporation | Baa2 | Baa |
| Emera Incorporated | Baa2 | A |
| The Empire District Electric Company | Baa2 | Ba |
| Eskom Holdings Ltd | Baa2/ [13] | Ba |
| Indianapolis Power \& Light Company | Baa2 | Baa |
| Cemig Distribuição S.A. | Baa3 | Ba |
| FirstEnergy Corp. | Baa3 | Baa |
| Westar Energy, Inc. | Baa3 | Baa |
| EDP - Energias do Brasil S.A. | Ba1 | Ba |

## Observations and Outliers

As a utility's regulatory framework is one of the most important drivers of ratings, there are no outliers for this factor among the 30 issuers highlighted for this methodology.

## Regulated Electric and Gas Utilities

## Results of Mapping Factor 2

Factor 2: Ability to Recover Costs and Earn Returns

| Factor Weight | 25\% |  |
| :---: | :---: | :---: |
|  | Current Rating/BCA | Rate Adjustment and Cost Recovery Mechanisms |
| Kyushu Electric Power Company, Incorporated | Aa2 | Aa |
| Tokyo Electric Power Company, Incorporated | Aa2 | Aa |
| Eesti Energia AS | A1/ [8] | Baa |
| Florida Power \& Light Company | A1 | A |
| Korea Electric Power Corporation | A2/ [6] | Baa |
| CLP Holdings Limited | A2 | A |
| Northern Illinois Gas Company | A2 | Baa |
| Oklahoma Gas and Electric Company | A2 | A |
| Wisconsin Power and Light Company | A2 | A |
| Consolidated Edison Company of New York | A3 | A |
| PECO Energy Company | A3 | Baa |
| Piedmont Natural Gas Company, Inc. | A3 | A |
| Progress Energy Carolinas, Inc. | A3 | A |
| Southern California Edison Company | A3 | Baa |
| The Southern Company | A3 | A |
| PG\&E Corporation | Baal | Baa |
| Xcel Energy Inc. | Baal | A |
| American Electric Power Company, Inc. | Baa2 | Baa |
| Arizona Public Service Company | Baa2 | Baa |
| Consumers Energy Company | Baa2 | Baa |
| Dominion Resources, Inc. | Baa2 | A |
| Duke Energy Corporation | Baa2 | A |
| Emera Incorporated | Baa2 | A |
| The Empire District Electric Company | Baa2 | Baa |
| Eskom Holdings Ltd | Baa2/[13] | Ba |
| Indianapolis Power \& Light Company | Baa2 | A |
| Cemig Distribuição S.A. | Baa3 | Ba |
| FirstEnergy Corp. | Baa3 | Baa |
| Westar Energy, Inc. | Baa3 | Baa |
| EDP - Energias do Brasil S.A. | Ba1 | Ba |

## Observations and Outliers

Like Factor 1, Regulatory Framework, the ability to recover costs and earn returns is also an important ratings driver for regulated utilities, and it is not surprising that there are no outliers among the 30 issuers highlighted. For this factor, most of the issuers score exactly at their current rating levels, with the remainder scoring within one notch of their actual rating.

## Regulated Electric and Gas Utilities

## Results of Mapping Factor 3

Factor 3: Diversification

| Sub-Factor Weights |  Indicated <br> Current Factor 3 <br> Rating/BCA Rating |  | 5\%* <br> Market <br> Position | $5 \% * *$ <br> Generation and Fuel Diversification |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Kyushu Electric Power Company, Incorporated | Aa2 | Aa | A | Aaa |
| Tokyo Electric Power Company, Incorporated | Aa2 | Aa | A | Aaa |
| Eesti Energia AS | A1/[8] | B | B | B |
| Florida Power \& Light Company | A1 | Baa | Baa | Baa |
| Korea Electric Power Corporation | A2/[6] | Baa | Baa | A |
| CLP Holdings Limited | A2 | A | A | A |
| Northern Illinois Gas Company | A2 | A | A | N/A |
| Oklahoma Gas and Electric Company | A2 | Baa | Baa | Baa |
| Wisconsin Power and Light Company | A2 | Baa | Baa | Baa |
| Consolidated Edison Company of New York | A3 | Baa | Baa | N/A |
| PECO Energy Company | A3 | Baa | Baa | N/A |
| Piedmont Natural Gas Company, Inc. | A3 | A | A | N/A |
| Progress Energy Carolinas, Inc. | A3 | Baa | Baa | A |
| Southern California Edison Company | A3 | Baa | Baa | A |
| The Southern Company | A3 | Baa | A | Ba |
| PG\&E Corporation | Baa1 | A | Baa | Aa |
| Xcel Energy Inc. | Baa1 | A | A | A |
| American Electric Power Company, Inc. | Baa2 | Baa | A | Ba |
| Arizona Public Service Company | Baa2 | Baa | Baa | Baa |
| Consumers Energy Company | Baa2 | Baa | Baa | Baa |
| Dominion Resources, Inc. | Baa2 | A | A | A |
| Duke Energy Corporation | Baa2 | Baa | A | Baa |
| Emera Incorporated | Baa2 | Ba | Ba | Ba |
| The Empire District Electric Company | Baa2 | Baa | Baa | Baa |
| Eskom Holdings Ltd | Baa2/[13] | B | Ba | B |
| Indianapolis Power \& Light Company | Baa2 | Ba | Baa | Ba |
| Cemig Distribuição S.A. | Baa3 | Ba | Ba | N/A |
| FirstEnergy Corp. | Baa3 | Baa | A | Baa |
| Westar Energy, Inc. | Baa3 | Ba | Baa | Ba |
| EDP - Energias do Brasil S.A. | Ba1 | Baa | Baa | Baa |

## Observations and Outliers

Of the 30 issuers highlighted, there are three outliers, including PG\&E Corporation as a positive outlier, due to their high degree of generation diversification and the lack of coal in their generation mix, and both Eesti Energia AS and The Southern Company as negative outliers. As an Estonian vertically integrated dominant electric utility, Eesti Energia is exposed to considerably high concentration risk as it operates in one of the smallest CEE emerging markets. The concentration risk is further worsened by the company's high reliance on one fuel source as its generation is fully based on internationally rare oil shale. Furthermore, as the oil shale generation is relatively CO 2 intensive, Eesti Energia is further exposed to the development of CO2 allowance prices. The Southern Company is one of the largest coal generating utility systems in the U.S., with a high percentage of its generation from carbon fuels.

## Results of Mapping Factor 4

Factor 4: Financial Strength, Liquidity and Key Financial Metrics

| Sub-Factor Weights |  |  | 10\% | 7.5\% | 7.5\% | 7.5\% | 7.5\% |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Current Rating/BCA | Indicated Factor 4 Rating | Liquidity | 3 Year Average CFO preWC + Interest/ Interest | 3 Year Average CFO pre-WC / Debt | 3 Year Average CFO pre-WC / Debt | 3 Year Average Debt / Cap or Debt/RAV |
| Kyushu Electric Power Company, Incorporated | Aa2 | A | Aa | Aa | Ba | Ba | Baa* |
| Tokyo Electric Power Company, Incorporated | Aa2 | Baa | Aa | A | Ba | Ba | Ba* |
| Eesti Energia AS | A1/[8] | Aa | Baa | Aaa | Aaa | Aaa | Aa |
| Florida Power \& Light Company | A1 | Aa | A | Aa | Aa | Aa | A |
| Korea Electric Power Corporation | A2/[6] | A | Baa | Aa | A | A | A |
| CLP Holdings Limited | A2 | A | A | Aa | A | Baa | A |
| Northern Illinois Gas Company | A2 | Baa | Baa | A | A | Baa | Baa |
| Oklahoma Gas and Electric Company | A2 | A | A | A | A | A | A |
| Wisconsin Power and Light Company | A2 | A | Baa | A | A | Baa | A |
| Consolidated Edison Company of New York | A3 | Baa | A | Baa | Baa | Ba | A |
| PECO Energy Company | A3 | A | A | A | A | Baa | Baa |
| Piedmont Natural Gas Company, Inc. | A3 | Baa | Baa | A | Baa | Baa | Baa |
| Progress Energy Carolinas, Inc. | A3 | A | Baa | A | A | A | Baa |
| Southern California Edison Company | A3 | A | A | A | A | A | Baa |
| The Southern Company | A3 | Baa | A | A | Baa | Baa | Baa |
| PG\&E Corporation | Baa1 | Baa | Baa | A | A | A | Baa |
| Xcel Energy Inc. | Baa1 | Baa | Baa | Baa | Baa | Baa | Baa |
| American Electric Power Company, Inc. | Baa2 | Baa | Baa | Baa | Baa | Baa | Ba |
| Arizona Public Service Company | Baa2 | Baa | Baa | A | Baa | Baa | Baa |
| Consumers Energy Company | Baa2 | Baa | Baa | Baa | Baa | Baa | Ba |
| Dominion Resources, Inc. | Baa2 | Baa | Baa | Baa | Baa | Ba | Baa |
| Duke Energy Corporation | Baa2 | A | Baa | A | A | Baa | A |
| Emera Incorporated | Baa2 | Ba | Baa | Baa | Ba | Baa | B |
| The Empire District Electric Company | Baa2 | Baa | Baa | Baa | Baa | Baa | Baa |
| Eskom Holdings Ltd | Baa2/[13] | Baa | Ba | Ba | A | A | A |
| Indianapolis Power \& Light Company | Baa2 | Baa | Baa | A | A | Baa | Baa |
| Cemig Distribuição S.A. | Baa3 | A | Baa | Aa | Aaa | Aa | Ba |
| FirstEnergy Corp. | Baa3 | Baa | Baa | Baa | Baa | Baa | Ba |
| Westar Energy, Inc. | Baa3 | Baa | Baa | Baa | Baa | Baa | Baa |
| EDP - Energias do Brasil S.A. | Ba1 | Baa | Ba | Baa | Aa | A | A |
| *Debt/RAV |  |  |  |  |  |  |  |
|  |  |  |  |  | Posititer Negativer | Outlier <br> Outlier |  |

## Regulated Electric and Gas Utilities

## Observations and Outliers

This factor takes into account historic financial statements. Historic results help us to understand the pattern of a utility's financial and operating performance and how a utility compares to its peers. While Moody's rating committees and the rating process use both historical and projected financial results, this document makes use only of historic data, and does so solely for illustrative purposes.

While the vast majority of utilities' key financial metrics map fairly closely to their ratings, there are several significant outliers, which generally fall into two broad groups. The first group is composed of negative outliers and include several utilities located in stable and supportive regulatory environments and are characterized by very low business risk. In these cases, the utilities may have lower financial ratios and higher leverage than most peer companies on a global basis, but still maintain higher overall ratings. In short, the certainty provided by regulatory stability and low business risk offsets any risks that may result from lower financial ratios. Examples of such negative outliers on the financial strength factor include most of the major Japanese utilities, including Tokyo Electric Power and Kyushu Electric Power.

The second group of outliers is composed of positive outliers, whereby several financial ratios are stronger than the overall Moody's rating. These include several utilities in Latin America, such as Cemig Distribuicao, EDP-Energias do Brasil, and European Eesti Energia, which exhibit strong financial coverage ratios and low debt levels, but where ratings are constrained by a more difficult regulatory or business environment or a sovereign rating ceiling.

## Appendix D: Definition of Ratios

## Cash Flow Interest Coverage

(Cash Flow from Operations - Changes in Working Capital + Interest Expense) / (Interest Expense + Capitalized Interest Expense)

## CFO pre-WC / Debt

(Cash Flow from Operations - Changes in Working Capital) / (Total debt + operating lease adjustment + underfunded pension liabilities + basket-adjusted hybrids + securitizations + guarantees + other debt-like items)

## CFO pre-WC - Dividends / Debt

(Cash Flow from Operations - Changes in Working Capital - Common and Preferred Dividends) / (Total debt + operating lease adjustment + under-funded pension liabilities + basket-adjusted hybrids + securitizations + guarantees + other debt-like items)

## Debt / Capitalization or Regulated Asset Value

(Total debt + operating lease adjustment + under-funded pension liabilities + basket-adjusted hybrids + securitizations + guarantees + other debt-like items) / (Shareholders' equity + minority interest + deferred taxes + goodwill write-off reserve + Total debt + operating lease adjustment + under-funded pension liabilities + basket-adjusted hybrids + securitizations + guarantees + other debt-like items) or RAV

## Appendix E: Industry Overview

The electric and gas utility industry consists of companies that are engaged in the generation, transmission, and distribution of electricity and/or natural gas. While many utilities remain vertically integrated with operations in all three segments, others have functionally or legally unbundled these functions due to legislatively mandated market restructuring or other deregulation initiatives and may be engaged in just one or two of these activities.

The generation of electricity is the first step in the process of producing and delivering electricity to end use customers and typically the most capital intensive, with the largest portion of the industry's assets consisting of generating plants and related hard assets. Electricity is generated from a variety of fuel sources, including coal, natural gas, or oil; nuclear energy; and renewable sources such as hydro, wind, solar, geothermal, wood, and waste.

Transmission is the high voltage transfer of electricity over long distances from its source, usually the location of a generating plant, to substations closer to end use customers in population or industrial centers. Although many utilities own and operate their own transmission systems, there are also several independent transmission companies included in this methodology.

The distribution of electricity is the process whereby voltage is reduced and delivered from a high voltage transmission system through smaller wires to the end-users, which consist of industrial, commercial, government, or retail customers of the utility. Most of the utilities covered by this methodology are engaged to some degree in the distribution of electricity through "poles and wires" to their end customers. The distribution of natural gas entails the transport of gas from delivery points along major pipelines to customers in their service territory through distribution pipes.

## Regulation Plays a Major Role in the Industry

Because of the essential nature of the utility's end products (electricity and gas), the public policy implications associated with their provision, the demands for high levels of reliability in their delivery, the monopoly status of most service territories, and the high capital costs associated with its infrastructure, the utility industry is generally subject to a high degree of government regulation and oversight. This regulation can take many forms and may include setting or approving the rates or other cost recovery mechanisms that utilities charge for their services (revenue), determining what costs can be recovered through base rates, authorizing returns that utilities earn on their investments, defining service territories, mandating the level and reliability of electricity and gas service that must be provided and enforcing safety standards. From a credit standpoint, the regulators' ability to set and control rates and returns is perhaps the most important regulatory consideration in determining a rating.

In the U.S., the most important utility regulator for most companies is the individual state agency generally known as the Public Utility Commission or the Public Service Commission. The commissions are comprised of elected or appointed officials in each state who determine, among other things, whether utility expenditures are reasonable and/or prudent and how they should be passed on to consumers through their utility rates. While some states have legislatively mandated certain market restructuring or deregulation initiatives with regard to the generation segment of their electricity markets, the majority of states remain fully regulated, and some states that had deregulated are in the process of "re-regulating" their electricity markets.

The key federal agency governing utilities in the U.S. is the Federal Energy Regulatory Commission (FERC), an independent agency that regulates, among other things, the interstate transmission of electricity and natural gas. The FERC's responsibilities include the approval of rates for the wholesale sale and transmission of electricity on an interstate basis by utilities, power marketers, power pools, power exchanges, and independent system operators. The Energy Policy Act of 2005 increased the FERC's regulatory authority in a wide range of areas including mergers and acquisitions, transmission siting, market practices, price transparency, and regional transmission organizations.

## Regulated Electric and Gas Utilities

In Europe, following the implementation of specific policies relating to the liberalization of energy supply within the European Union (EU), the electric utility sector has been evolving toward a model targeting complete separation between network activities, regulated in light of their monopoly nature, and supply and production of energy, fully liberalized and hence unregulated. As a result of this process, most Western European utilities currently operate either as fully regulated entities in the networks segment, or largely unregulated integrated companies (albeit some may still maintain some regulated network activity), and are therefore excluded from the scope of this methodology. Nevertheless, there are countries in Europe where regulatory evolution and transition to competition remain at an earlier stage (Central and Eastern European countries and the Baltic states in particular) and/or are characterized by the remoteness and isolation of their systems (the islands in the Azores and Madeira regions for example). In these countries, Governments and/or Regulators maintain greater influence on the bulk of the utilities' revenues, thus supporting their inclusion in this methodology.

In Japan, regulation has been an important positive factor supporting utility credit quality. Japan's regulator makes the maintenance of supply its primary policy objective, followed in priority by environmental protection and finally, allowing market conditions to work. This approach preserves the utilities' integrated operations and makes them responsible for final supply to users in the liberalized market. The Japanese government is gradually deregulating the utility industry and expanding the liberalized market. However, the pace of deregulation has been moderate so that the regulator can monitor the risks and the effects on the power companies, especially in the context of generation supply security.

In Australia, stable and predictable regulatory regimes continue to underpin the investment-grade characteristics of the sector. So far, regulators - which operate independently from the governments - have not adopted an aggressive stance to revenues and returns as they seek a balance between: appropriate returns for utilities; ongoing incentives for network investments; and appropriate prices for consumers. The supportiveness of the regimes will become increasingly important over the medium term as the sector undertakes investments to expand network capacity and replace ageing assets to meet rising demand.

In Asia Pacific (ex-Japan), regulation of electric utilities is overseen by government regulatory bodies in their respective countries. As such, the stability and regulatory framework can vary to a large extent by country with a few utilizing automatic cost pass through mechanisms while the majority operate with ad hoc tariff adjustments. However, power security remains a key policy objective and regulators continue to seek to ensure stability in regulatory and operating environments. Such regulatory environments are critical to attracting investments for both privatizations and for funding expanding electricity projects. Reform of the power industry in Asia remains slow paced and competition is well contained. Regulators have shown that they will reform in a prudent manner and allow tariff adjustment to minimize any material negative impact on the credit profiles of their power utilities. Such a supportive approach enhances stability and provides a stable regulatory regime which in turn remains a key driver in supporting the cash flows of Asia Pacific (ex-Japan) utilities.

In Canada, regulation of electric and gas utilities is overseen by independent, quasi-judicial provincial or territorial regulatory bodies. Accordingly, the transparency and stability of regulation and the timeliness of regulatory decisions can vary by jurisdiction. However, generally the regulatory frameworks in each jurisdiction are well established and there is a high expectation of timely recovery of cost and investments. Furthermore, Moody's considers the overall business environment in Canada to be relatively more supportive and less litigious than that of the U.S. Moody's views the supportiveness of the Canadian business and regulatory environments to be positive for regulated utility credit quality and believes that these factors, to some degree, offset the relatively lower ROEs and higher deemed debt components typically allowed by Canadian regulatory bodies for rate-making purposes. As a result of the relatively low ROEs and higher deemed debt levels that are generally characteristic of Canadian utilities, for a given rating category, these entities often have weaker credit metrics than their international peers.

## Regulated Electric and Gas Utilities

In Latin America, there is a perceived lower level of regulatory supportiveness than in other regions. In Argentina, although the generation industry is deregulated, the government continues to intervene in the process of setting prices and tariffs. In addition, collections from sales to the spot market have only been partial and have depended on the government's discretion. Moody's views the current regulatory framework as a relatively high risk factor given the government's interference, the unclear regulations, the lack of support for the companies' profitability, and the lack of incentives for much needed long-term investment. Brazil's power generation companies could also be affected by unfavorable regulatory decisions, since about $75 \%$ of its electricity currently goes to the regulated market, but Moody's last year noted improvements in Brazil's regulatory environment, which led to several issuer upgrades. Brazil's regulatory model provides a more supportive environment for acceptable rates of return since the current rules for electric utilities are more transparent and technically driven. Nonetheless, there is a lower assurance of timely recovery of costs and investments in Brazil since the new framework has not yet experienced the stress of high inflation, exchange rate devaluation or electricity rationing. Recent distribution tariff review reductions have typically been in the high-single-digit range, which is considered modest, particularly compared to Moody's rated issuers in El Salvador ( $14 \%$ reduction) and Guatemala ( $45 \%$ reduction) both of which led to downgrades last year. The regulatory framework in Chile, in Moody's opinion, comes closest to the United States in terms of regulatory supportiveness.

# Appendix F: Key Rating Issues Over the I ntermediate Term 

## Global Climate Change and Environmental Awareness


#### Abstract

Electric and gas utilities will continue to be affected by growing concerns over global climate change and greenhouse gas emissions, which are particularly important in the electricity generation segment which continues to rely on a large number of coal and natural gas fired power plants. There have been significant increases in environmental expenditure estimates among utilities with significant coal fired generation in recent years as policymakers have mandated pollution control measures and emissions limitations in response to public concerns over carbon. These expenditures are likely to continue to increase with the imposition of new and sometimes uncertain requirements with respect to carbon emissions. Utilities may have to implement substantial additional reductions in power plant emissions and could experience progressively higher capital expenditures over the next decade. In the U.S., the planned construction of several new coal plants has been cancelled as a result of opposition from regulators, political leaders, and the public or because cheaper alternatives appeared more compelling due to higher coal plant construction costs.


## Large Capital Expenditures and Rising Costs for New Generation and Transmission


#### Abstract

While the global recession may have reduced electric demand in certain regions in the short-term, longer-term worldwide demand for electricity is expected to continue to grow and many utilities will incur substantial capital expenditures for new generation, as well as for upgrades and expansions to transmission systems. In the U.S., the Edison Electric Institute projects annual capacity additions among investor-owned utilities to increase to over 15,000 megawatts (MW) in 2009 compared with less than $6,000 \mathrm{MW}$ in 2006. Some of the new plants announced include large, highly capital intensive nuclear plants, which have not been built in the U.S. in many years. In Indonesia, the Fast Track program calls for the addition of $9,000 \mathrm{MW}$ of coal-fired power plants while India plans to build eight ultra-mega power projects (each under 4,000 MW). Similar large nuclear plants are being constructed worldwide in countries as diverse as Bulgaria, China, India, Russia, South Korea, Taiwan and Ukraine. Because of this construction boom, international demand for certain construction materials, plant components and skilled labor has driven up the cost of new nuclear. More recently, the global economic slowdown may relieve some of this cost pressure.


## Political and Regulatory Risk

As the utility industry faces higher operating costs, rising environmental compliance expenditures, large capital expenditures for new generation, as well as fuel and commodity price risks, the need for rate relief and other regulatory support will continue to be a key rating factor. In the U.S., political intervention in the regulatory process following particularly large rate increase requests increased risk and negatively affected the credit ratings of utilities in Illinois and Maryland in recent years. In Europe, rising electricity prices two years ago resulted in widespread criticism of utilities in several countries, increasing regulatory and political risk for some of them. In Australia, the transition from state based regulation to a national regulatory framework could pose a moderate level of uncertainty to current regulatory thinking over the longer term. In Asia Pacific (ex-Japan) and Latin America, the governments face political pressure regarding tariff adjustments given their need to balance socio-economic targets and inflationary concerns against the objective of ensuring reliable electricity supply over the long term.

## Economic and Financial Market Conditions

Although electric and gas utilities are somewhat resistant (although not immune) to unsettled economic and financial market conditions due partly to the essential nature of the service provided, a protracted or severe recession could negatively affect credit profiles over the intermediate term in several ways. Falling demand for electricity or natural gas could negatively impact margins and debt service protection measures. Poor economic conditions could make it more difficult for regulators to approve needed rate increases or provide timely cost recovery for utilities, resulting in higher cost deferrals and longer regulatory lag. Finally,
constrained capital market conditions could severely limit the availability of credit necessary to finance needed capital expenditures, or make such financing plans more expensive.

# Appendix G: Regional and Other Considerations 

## Notching Considerations - Structural Subordination and Holding Company Ratings

Utility corporate structures often include multiple legal entities within a single consolidated organization under an unregulated parent holding company. The holding company typically has one or more regulated operating subsidiaries and may have one or more unregulated subsidiaries as well. Most utility families issue debt at several of these legal entities within the organizational family including the parent holding company and the utility subsidiaries. In such cases, our approach is to assess each issuer on a standalone basis as well as to evaluate the creditworthiness of the consolidated entity. We also consider the interdependent relationships that may exist among affiliates and the degree to which a management team operates its utility subsidiaries as a system. We then assess the degree of legal and regulatory insulation that exists between the generally lower-risk regulated entities and the generally higher-risk unregulated entities.

The degree of notching (or rating differential) between entities in a single family of companies depends on the degree of insulation that exists between the regulated and unregulated entities, as well as the amount of debt at the holding company in comparison to the consolidated entity. If there is minimal insulation or ring-fencing between the parent and subsidiary and little to no debt at the parent, there is typically a one notch differential between the two to reflect structural subordination of the parent company debt compared to the operating subsidiary debt. If there is substantial insulation between the two and/or debt at the parent company is a material percentage of the overall debt, there could be two or more notches between the ratings of the parent and the subsidiary.

## U.S. Securitization

Since the late 1990s, legislatively approved stranded cost and other regulatory asset securitization has become an increasingly utilized financing technique among some investor-owned electric utilities. In its simplest form, a stranded cost securitization isolates and dedicates a stream of cash flow into a separate special purpose entity (SPE). The SPE uses that stream of revenue and cash flow to provide annual debt service for the securitized debt instrument. Securitizations were originally done to reimburse utilities for stranded costs following deregulation, which was primarily related to the actual lower market values of the legacy generation compared to its book value. More recently, securitizations have been done to reimburse utilities for storm restoration costs following two active hurricane seasons in the U.S. in 2004 and 2005, with additional securitizations planned following an active 2008 hurricane season, as well as for environmental equipment. In 2007, Baltimore Gas \& Electric used securitization to fund supply cost deferrals. Securitization could also be used to help fund the next generation of nuclear plants to be built in the U.S.

Although it often addresses a major credit overhang and provides an immediate source of cash, Moody's treats securitization debt of utilities as being on-credit debt. In calculating balance sheet leverage, Moody's treats the securitization as being fully recourse to the utility as accounting guidelines require the debt to appear on the utility's balance sheet. In looking at cash flow coverages, Moody's analysis focuses on ratios that include the securitized debt in the company's total debt as being the most consistent with the analysis of comparable companies. Securitizations also entail transition or other charges on ratepayer bills that may limit a utility's flexibility to raise rates for other reasons going forward. While our standard published credit ratios include the securitization debt, we also look at the ratios without the securitization debt and cash flow in our analysis, to distinguish this debt and ensure that the benefits of securitization are not ignored.

# Strong levels of government ownership in Asia Pacific (exJapan) provide rating uplift 

Strong levels of government ownership dominate Asia Pacific (ex-Japan) power utilities and remain one of their key rating drivers. The current majority state ownership levels are expected to remain largely unchanged for the near to medium term, thereby providing rating uplift to a majority of the government-owned Asia Pacific (ex-Japan) utilities under the Joint Default Analysis methodology.

## Appendix H: Treatment of Power Purchase Agreements ("PPA's")


#### Abstract

Although many utilities own and operate power stations, some have entered into PPAs to source electricity from third parties to satisfy retail demand. The motivation for these PPAs may be one or more of the following: to outsource operating risks to parties more skilled in power station operation, to provide certainty of supply, to reduce balance sheet debt, or to fix the cost of power. While Moody's regards these risk reduction measures positively, some aspects of PPAs may negatively affect the credit of utilities.

Under most PPAs, a utility is obliged to pay a capacity charge to the power station owner (which may be another utility or an Independent Power Producer - IPP); this charge typically covers a portion of the IPP's fixed costs in relation to the power available to the utility. These fixed payments usually help to cover debt service and are made irrespective of whether the utility requires the IPP to generate and deliver power. When the utility requires generation, a further energy charge, to cover the variable costs of the IPP, will also be paid by the utility. Some other similar arrangements are characterized as tolling agreements, or long-term supply contracts, but most have similar features to PPAs and are thus analyzed by Moody's as PPAs. ${ }^{4}$


## Factors determining the treatment of PPAs

Because PPAs have a wide variety of financial and regulatory characteristics, each particular circumstance may be treated differently by Moody's. The most conservative treatment would be to treat the PPA as a debt obligation of the utility as, by paying the capacity charge, the utility is effectively providing the funds to service the debt associated with the power station. At the other end of the continuum, the financial obligations of the utility could also be regarded as an ongoing operating cost, with no long-term capital component recognized. Factors which determine where on the continuum Moody's treats a particular PPA are as follows:

- Risk management: An overarching principle is that PPAs have been used by utilities as a risk management tool and Moody's recognizes that this is the fundamental reason for their existence. Thus, Moody's will not automatically penalize utilities for entering into contracts for the purpose of reducing risk associated with power price and availability. Rather, we will look at the aggregate commercial position, evaluating the risk to a utility's purchase and supply obligations. In addition, PPAs are similar to other long-term supply contracts used by other industries and their treatment should not therefore be fundamentally different from that of other contracts of a similar nature.
- Pass-through capability: Some utilities have the ability to pass through the cost of purchasing power under PPAs to their customers. As a result, the utility takes no risk that the cost of power is greater than the retail price it will receive. Accordingly Moody's regards these PPA obligations as operating costs with no long-term debt-like attributes. PPAs with no pass-through ability have a greater risk profile for utilities. In some markets, the ability to pass through costs of a PPA is enshrined in the regulatory framework, and in others can be dictated by market dynamics. As a market becomes more competitive, the ability to pass through costs may decrease and, as circumstances change, Moody's treatment of PPA obligations will alter accordingly.
- Price considerations: The price of power paid by a utility under a PPA can be substantially below the current spot price of electricity. This will motivate the utility to purchase power from the IPP even if it

[^2]
## Regulated Electric and Gas Utilities

does not require it for its own customers, and to sell excess electricity in the spot market. This can be a significant source of cash flow for some utilities. On the other hand, utilities that are compelled to pay capacity payments to IPPs when they have no demand for the power or when the spot price is lower than the PPA price will suffer a financial burden. Moody's will particularly focus on PPAs that have mark-to-market losses that may have a material impact on the utility's cash flow.

- Excess Reserve Capacity: In some jurisdictions there is substantial reserve capacity and thus a significant probability that the electricity available to a utility under PPAs will not be required by the market. This increases the risk to the utility that capacity payments will need to be made when there is no demand for the power. For example, Tenaga, the major Malaysian utility, purchases a large proportion of its power requirement from IPPs under PPAs. PPA payment totaled $42.0 \%$ of its operating costs in FY2008. In a high reserve margin environment existing in Malaysia, capacity payment under these PPAs are a significant burden on Tenaga, and some account must be made for these payments in its financial metrics.
- Risk-sharing: Utilities that own power plants bear the associated operational, fuel procurement and other risks. These must be balanced against the financial and liquidity risk of contracting for the purchase of power under a PPA. Moody's will examine on a case-by case basis which of these two sets of risk poses greatest concern from a ratings standpoint.
- Default provisions: In most cases, a default under a PPA will not cross-default to the senior facilities of the utility and thus it is inappropriate to add the debt amount of the PPA to senior debt of the entity. The PPA obligations are not senior obligations of the utility as they do not behave in the same way as senior debt. However, it may be appropriate in some circumstances to add the PPA obligation to Moody's debt, in the same way as other off-balance sheet items. ${ }^{5}$
- Accounting: From a financial reporting standpoint, very few PPA's have thus far resulted in IPP's being consolidated by the off taker. Similarly, very few PPA's are treated as lease obligations. Due to upcoming accounting rule changes ${ }^{6}$, however, coupled with many contracts being renegotiated and extended over the next several years, we expect to see an increasing number of projects being consolidated or PPA's accounted for as leases on utility financial statements. Many of the factors assessed in the accounting decision are the same as in our analysis, i.e. risk and control. However, our analysis also considers additional factors that the accountants may not, such as the ability to pass through costs. We will consider the rationale behind the accounting decision and compare it to our own analysis and may not necessarily come to the same conclusion as the accountants.

Each of these factors will be weighed by Moody's analysts and a decision will be made as to the importance of the PPA to the risk analysis of the utility.

## Methods of accounting for PPAs in our analysis

According to the weighting and importance of the PPA to each utility and the level of disclosure, Moody's may analytically assess the total debt obligations for the utility using one of the methods discussed below.

- Operating Cost: If a utility enters into a PPA for the purpose of providing an assured supply and there is reasonable assurance that regulators will allow the costs to be recovered in regulated rates, Moody's may view the PPA as being most akin to an operating cost. In this circumstance, there most likely will be no imputed adjustment to the debt obligations of the utility. In the event operating costs are consolidated, we will attempt to deconsolidate these costs from a utility's financial statements.
- Annual Obligation x 6: In some situations, the PPA obligation may be estimated by multiplying the annual payments by a factor of six (in most cases). This method is sometimes used in the capitalization of operating leases. This method may be used as an approximation where the analyst determines that the obligation is significant but cannot be quantified otherwise due to limited information.

[^3]
## Regulated Electric and Gas Utilities

- Net Present Value: Where the analyst has sufficient information, Moody's may add the NPV of the stream of PPA payments to the debt obligations of the utility. The discount rate used will be the cost of capital of the utility.
- Debt Look-Through: In some circumstances, where the debt incurred by the IPP is directly related to the off-taking utility, there may be reason to allocate the entire debt (or a proportional part related to share of power dedicated to the utility) of the IPP to that of the utility.
- Mark-to-Market: In situations in which Moody's believes that the PPA prices exceed the spot price and thus a liability is arising for the utility, Moody's may use a net mark-to-market method, in which the NPV of the net cost to the utility will be added to its total debt obligations.
- Consolidation: In some instances where the IPP is wholly dedicated to the utility, it may be appropriate to consolidate the debt and cash flows of the IPP with that of the utility. Again, if the utility purchases only a portion of the power from the IPP, then that proportion of debt might be consolidated with the utility.

In some circumstances, Moody's will adopt more than one method to estimate the potential obligations imposed by the PPA. This approach recognizes the subjective nature of analyzing agreements that can extend over a long period of time and can have a different credit impact when regulatory or market conditions change. In all methods the Moody's analyst will account for the revenue from the sale of power bought from the IPP. We will focus on the term to maturity of the PPA obligation, the ability to pass through costs and curtail payments, and the materiality of the PPA obligation to the overall cash flows of the utility in assessing the effect of the PPA on the credit of the utility.

## Moody's Related Research

## Industry Outlooks:

- U.S. Regulated Electric Utilities, Six-Month Update, July 2009 (118776)
- U.S. Investor-Owned Electric Utility Sector, January 2009 (113690)
- EMEA Electric and Gas Utilities, November 2008 (112344)
- North American Natural Gas Transmission \& Distribution, March 2009 (115150)


## Rating Methodologies:

- Unregulated Utilities and Power Companies, August 2009 (118508)
- Regulated Electric and Gas Networks, August 2009 (118786)


## Special Comments:

- Credit Roadmap for Energy Utilities and Power Companies in the Americas, March 2009 (115514)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

## Regulated Electric and Gas Utilities

Analyst Contacts (continued):
London 44.20.7772.5454

Raffaella Altamura
Analyst
Monica Merli
Team Managing Director
Hong Kong 852.3551.3077
Jennifer Wong
Assistant Vice President - Analyst
Gary Lau
Senior Vice President
Sydney
61.2.9270.8100

Clement Chong
Vice President - Senior Analyst
Terry Fanous
Senior Vice President
Brian Cahill
Managing Director/Australia
Tokyo 81.3.5408.4100
Kenji Okamoto
Vice President - Senior Analyst
Report Number: 118481

| Author | Associate Analyst | Production Specialist |
| :--- | :--- | :--- |
| Michael G. Hagaartv | Mitchell Moss | Yelena Ponirovskava |

CREDIT RATINGS ARE MOODY'S INVESTORS SERVICE, INC.'S (MIS) CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MIS DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS DO NOT CONSTITUTE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS ARE NOT RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. CREDIT RATINGS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MIS ISSUES ITS CREDIT RATINGS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.
© Copyright 2009, Moody's Investors Service, Inc., and/or its licensors and affiliates (together, "MOODY'S"). All rights reserved. ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY COPYRIGHT LAW AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT. All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, such information is provided "as is" without warranty of any kind and MOODY'S, in particular, makes no representation or warranty, express or implied, as to the accuracy, timeliness, completeness, merchantability or fitness for any particular purpose of any such information. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The credit ratings and financial reporting analysis observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER. Each rating or other opinion must be weighed solely as one factor in any investment decision made by or on behalf of any user of the information contained herein, and each such user must accordingly make its own study and evaluation of each security and of each issuer and guarantor of, and each provider of credit support for, each security that it may consider purchasing, holding or selling. MOODY'S hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MOODY'S have, prior to assignment of any rating, agreed to pay to MOODY'S for appraisal and rating services rendered by it fees ranging from $\$ 1,500$ to

Cases 12-E-0201 \&12-G-0202
Exhibit $\qquad$
NIAGARA MOHAWK POWER CORPORATION
Comparative Analysis of Niagara Mohawk's Credit Metrics

|  | $\begin{aligned} & \begin{array}{l} \text { Per Company } \\ (x \$ 1000) \end{array} \\ & \hline \end{aligned}$ | Ratings Category | $\begin{array}{\|l\|l\|} \hline \begin{array}{l} \text { Per Staff } \\ (x \$ 1000) \end{array} \\ \hline \end{array}$ | Ratings Category |
| :---: | :---: | :---: | :---: | :---: |
|  | $\underline{2014}$ |  | $\underline{2014}$ |  |
| Net Income | \$305,664 |  | 245,898 |  |
| Depreciation and Amortization | \$231,297 |  | 223,925 |  |
| Amortization of stranded costs and deferrals | \$7 |  | 3,714 |  |
| Pensions, deferrals and other non-cash items | (\$177,071) |  | $(162,690)$ |  |
| Deferred Income Taxes | \$61,667 |  | 63,896 |  |
| Funds From Operation | \$421,564 |  | \$374,743 |  |
| Changes in Working Capital | \$151,070 |  | 151,070 |  |
| Net Income | \$305,664 |  | 245,898 |  |
| Interest Expense | \$76,516 |  | 78,067 |  |
| Income Taxes | \$131,398 |  | 138,896 |  |
| Deferred Income Taxes | \$61,667 |  | 63,896 |  |
| Amortization of stranded costs and deferrals | \$7 |  | 3,714 |  |
| Depreciation and Amortization | \$231,297 |  | 223,925 |  |
| EBITDA | \$806,549 |  | \$754,396 |  |
| Capital Expenditures | \$597,341 |  | 565,566 |  |
| Dividend Payments | \$126,060 |  | 126,060 |  |
| Total Average Debt | \$2,602,589 |  | 2,632,080 |  |
| Total Average Capitalization | \$5,455,913 |  | 5,189,560 |  |
| Standard \& Poor's Credit Metrics |  |  |  |  |
| Funds from Operation/Debt | 16.2\% | Aggressive | 14.2\% | Aggressive |
| Debt/EBITDA (x) | 3.2 | Significant |  | Significant |
| Debt/Capital | 48\% | Significant | 50.7\% | Aggressive |
| Moody's Credit Meterics |  |  |  |  |
| Cash Flow Interest Coverage (x) | 6.5 | Aa | 5.8 | A |
| Cash Flow/Debt | 16.2\% | Baa | 14.2\% | Baa |
| Retained Cash Flow/Debt | 11.4\% | Baa | 9.4\% | Baa |
| Debt/Capital | 36\% | Baa | 38\% | Baa |

# MERGENT 

BOND RECORD

# Corporates Convertibles <br> Governments <br> Municipals 

Includes Global Ratings

June 2012

# MERGENT BOND RECORD MONTHLY UPDATE MERGENT <br> Copyright © 2012 by Mergent, Inc., 477 Madison Ave, New York 10022 

June 2012 Vol. 79 No. 6<br>Mailing Date for Next Month's Publication will be July 10<br>(Information revised through last business day of previous month.)

## Table of Contents

SECTION ..... PAGE
Matured Issues in 2012. ..... 2
Redeemed Issues in 2012 ..... 10
Corporate Bond Yield Averages ..... 12
Corporate Bonds-New ..... 13
Corporate Bonds-Revised ..... 15
Convertible Bonds-New . ..... 19
Convertible Bonds-Revised ..... 20
International Corporate \& Convertible-New ..... 21
International Corporate \& Convertible-Revised ..... 23
Structured Finance Issues-New ..... 29
Structured Finance Issues-Revised ..... 30
Commercial Paper-New ..... 41
Commercial Paper-Revised ..... 42
Medium Term Notes-New ..... 43
Medium Term Notes-Revised ..... 50
Issuer Ratings-New ..... 68
Issuer Ratings-Revised ..... 69
Preferred Stock Ratings-Public Utility Averages ..... 70
Preferred Stock Ratings-New ..... 71
Preferred Stock Ratings-Revised ..... 72
Industrial Development \& Revenue Bonds-New ..... 74
Industrial Development \& Revenue Bonds-Revised ..... 75
Pollution and Environmental Control Revenue Bonds-New ..... 76
Pollution and Environmental Control Revenue Bonds-Revised ..... 77
Municipal Bond Yield Averages ..... 78

# Mergent Bond Record (ISSN 0148-1878) 



Notes: Moody's® Long-Term Corporate Bond Yield Averages have been published daily since 1929. They are derived from pricing data on a regularly-replenished population of nearly 75 seasoned




 July figures were based on 8 business days
Because of the dearth of Aaa rated public utility bond issues, Moody's Aaa public utility bond yield average was discontinued as of December 10, 2001.

## U.S. Corporate Bonds (New)


 Moody's $®$ assignment or change of a rating and your use of this monthly publication, we suggest you tions and symbols, see page 6

# NIAGARA MOHAWK POWER CORPORATION 

Cost Rate of Long-Term Debt for the Rate Year
Exhibit_(KXD-12)

| 1 | 2 | 3 | 4 | 5 | $\begin{gathered} 6 \\ C 2 \times C 5 \end{gathered}$ | 7 | 8 | 9 | $\begin{gathered} 10 \\ C 6+C 8 \end{gathered}$ | $\begin{gathered} 11 \\ \text { C10/C5-C9 } \end{gathered}$ | $\begin{gathered} 12 \\ \mathrm{C} 10^{*}(\mathrm{C} 5 / \mathrm{L} 8 \mathrm{C} 5) \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| General Mortgage Bonds: | Stated Interest Rate | Date of Issue | Date of Maturity | Principal Amt | Yearly Interest Expense | Unamzd Issuance Expense | Yearly <br> Amortiz ation of Issuanc <br> Expens | Rate Year Average Balance of Unamtzd Debt Exp. |  <br> Issuance Expense Amortizatio n | Effective Rate | Weighted Cost Rate |
| 4.881\% Senior Notes | 4.88\% | 8/1/2009 | 8/15/2019 | \$750,000 | \$36,608 | \$390 | \$51 | \$352 | \$36,659 | 4.89\% | 1.53\% |
| 3.553\% Senior Notes | 3.55\% | 10/1/2009 | 10/1/2014 | \$500,000 | \$17,765 | \$360 | \$131 | \$262 | \$17,896 | 3.58\% | 0.75\% |
| 5.15\% Pollution Control Tax Exempt | 5.15\% | 11/1/1998 | 11/1/2025 | \$75,000 | \$3,863 | \$156 | \$11 | \$148 | \$3,874 | 5.18\% | 0.16\% |
| 1985 Series A Pollution Control Revenue Bonds | 0.96\% | 7/1/1985 | 7/1/2015 | \$100,000 | \$957 | \$300 | \$86 | \$236 | \$1,043 | 1.05\% | 0.04\% |
| 1985 Series B Pollution Control Revenue Bonds | 0.74\% | 12/1/1985 | 12/1/2025 | \$37,500 | \$279 | \$90 | \$6 | \$85 | \$285 | 0.76\% | 0.01\% |
| 1985 Series C Pollution Control Revenue Bonds | 0.74\% | 12/1/1985 | 12/1/2025 | \$37,500 | \$277 | \$90 | \$6 | \$85 | \$283 | 0.76\% | 0.01\% |
| 1986 Series A Pollution Control Revenue Bonds | 0.95\% | 12/1/1986 | 12/1/2026 | \$50,000 | \$477 | \$80 | \$5 | \$76 | \$482 | 0.97\% | 0.02\% |
| 1987 Series A Pollution Control Revenue Bonds | 0.73\% | 3/1/1987 | 3/1/2027 | \$25,760 | \$188 | \$51 | \$3 | \$48 | \$191 | 0.74\% | 0.01\% |
| 1987 Series B-1 Pollution Control Revenue Bonds | 0.95\% | 7/1/1987 | 7/1/2027 | \$68,200 | \$650 | \$74 | \$5 | \$70 | \$655 | 0.96\% | 0.03\% |
| 1987 Series B-2 Pollution Control Revenue Bonds | 0.96\% | 7/1/1987 | 7/1/2027 | \$25,000 | \$239 | \$74 | \$5 | \$70 | \$244 | 0.98\% | 0.01\% |
| 1988 Series A Pollution Control Revenue Bonds | 0.94\% | 12/1/1988 | 12/1/2023 | \$69,800 | \$657 | \$134 | \$11 | \$126 | \$668 | 0.96\% | 0.03\% |
| 1991 Series A Pollution Control Revenue Bonds | 0.74\% | 12/1/2003 | 10/1/2013 | \$45,600 | \$337 | \$336 | \$192 | \$192 | \$529 | 1.16\% | 0.02\% |
| 2004 Series A Pollution Control Revenue Bonds | 0.94\% | 7/1/1994 | 7/1/2029 | \$115,705 | \$1,090 | \$301 | \$17 | \$288 | \$1,107 | 0.96\% | 0.05\% |
| Note payable to NMHI (Interco. Note) | 5.21\% | 10/27/2003 | 11/1/2012 | \$500,000 | \$26,050 | \$0 | \$0 | \$0 | \$26,050 | 5.21\% | 1.09\% |
| Amortization of Reaquired Debt, Call Premiums etc |  |  |  |  |  | \$2,716 |  | \$2,716 |  | 0.00\% | 0.00\% |
| Total |  |  |  | \$2,400,065 | \$89,437 | \$5,152 |  | \$4,754 | \$89,967 | 3.76\% | 3.76\% |

Post Test-Year/Pre-Rate Year Repayments and Issuances

Repayments:
Note payable to NMHI (Interco. Note)
5.210\%

11/1/2012 (\$500,000)
$(\$ 26,050)$

1/1/2042 \$500,000
New Issuances:
4.85\% 30-Year Senior Notes Issued Nov 2012
\$0 \$0
$\$ 0$
\$26,050)
5.21\%
-1.09\%

Cases 12-E-0201 \& 12-G-0202
NIAGARA MOHAWK POWER CORPORATION d/b/a NATIONAL GRID ESTIMATED COST OF SENIOR SECURITIES (RATE YEAR) AND RATE OF RETURN
(\$000)
Estimated Cost of Long-Term Debt for 12-months period ending March 31, 2014

|  |  |  | MATURITY DATE | Principal Amount | Effective <br> Rate | Total Interest and Annual Amortization |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| As of March 31, 2013 (Per Schedule 1, Page 1) |  |  |  | 2,400,065 | 3.68\% | \$88,351 |
| Variable Interest Rate Changes: |  |  |  |  |  |  |
| 1985 Series A Pollution Control Revenue Bonds |  |  | 7/1/2015 | 100,000 | 1.00\% | 999 |
| 1985 Series B Pollution Control Revenue Bonds |  |  | 12/1/2025 | 37,500 | 1.00\% | 374 |
| 1985 Series C Pollution Control Revenue Bonds |  |  | 12/1/2025 | 37,500 | 1.00\% | 375 |
| 1986 Series A Pollution Control Revenue Bonds |  |  | 12/1/2026 | 50,000 | 1.00\% | 501 |
| 1987 Series A Pollution Control Revenue Bonds |  |  | 3/1/2027 | 25,760 | 1.01\% | 259 |
| 1987 Series B-1 Pollution Control Revenue Bonds |  |  | 7/1/2027 | 68,200 | 1.00\% | 684 |
| 1987 Series B-2 Pollution Control Revenue Bonds |  |  | 7/1/2027 | 25,000 | 1.00\% | 250 |
| 1988 Series A Pollution Control Revenue Bonds |  |  | 12/1/2023 | 69,800 | 1.00\% | 698 |
| 1991 Series A Pollution Control Revenue Bonds |  |  | 10/1/2013 | 45,600 | 1.00\% | 457 |
| 2004 Series A Pollution Control Revenue Bonds |  |  | 7/1/2029 | 115,705 | 1.00\% | 1,156 |
| Repayments: |  |  |  |  |  |  |
| 1991 \$45.6M Series A Pollution Control Revenue Bonds | 3/31/2014 | 10/1/2013 | 10/1/2013 | $(22,738)$ | 2.48\% | (564) |
| New Issuances: |  |  |  |  |  |  |
| 5.00\% \$45.6M 30-Year Senior Notes Issued August 2013 | 3/31/2014 | 8/1/2013 | 8/1/2043 | 30,358 | 5.00\% | 1,518 |
| Amortization of Reaquired Debt Call Premiums \& DD\&E |  |  |  |  |  | (8) |
| Total Long-Term Debt |  |  |  | \$2,407,686 | 3.95\% | \$95,051 |

Total Interest and Annual
\$88,351

Public Utility Bond Yield Averages By Ratings Categories

| Moody's: <br> S\&P: | Aa2 <br> AA | Aa3 <br> AA- | A1 <br> A+ | A2 <br> A | A3 <br> A- | Baa1 <br> BBB + | Baa2 <br> BBB |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Jan-12 | 4.03 | 4.13 | 4.24 | 4.34 | 4.58 | 4.82 | 5.06 |
| Feb-12 | $\mathbf{4 . 0 2}$ | 4.13 | 4.25 | $\mathbf{4 . 3 6}$ | 4.58 | 4.80 |  |
| Mar-12 | $\mathbf{4 . 1 6}$ | 4.27 | 4.37 | $\mathbf{4 . 4 8}$ | 4.70 | 4.91 |  |
| Apr-12 | $\mathbf{4 . 1 0}$ | 4.20 | 4.30 | $\mathbf{4 . 4 0}$ | 4.64 | 4.87 | $\mathbf{5 . 1 1}$ |
| May-12 | $\mathbf{3 . 9 2}$ | 4.01 | 4.11 | $\mathbf{4 . 2 0}$ | 4.46 | 4.71 | $\mathbf{4 . 9 7}$ |

Estimated Issuance Expense
Yield on A3/A- (\%)
Marginal Cost of Debt for NiMo(\%)

## Commercial Paper

Summary Rates Volume Statistics Outstanding Year-end Maturity Distribution About Announcements

Commercial Paper Rates Derived from data supplied by The Depository Trust \& Clearing Corporation
Data as of July 10, 2012
Posted July 11, 2012

Daily rates for commercial paper are provided for the AA nonfinancial, A2/P2 nonfinancial, AA financial, and AA asset-backed categories. The criteria that determine which issues are included in the rate categories are detailed in the Rate Calculations section of the About page of this release.

| Period | AA nonfinancial |  |  |  |  |  | A2/P2 nonfinancial |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1-day | 7-day | 15-day | 30-day | 60-day | 90-day | 1-day | 7-day | 15-day | 30-day | 60-day | 90-day |
| Annual average |  |  |  |  |  |  |  |  |  |  |  |  |
| 2010 | 0.18 | 0.17 | 0.18 | 0.18 | 0.21 | 0.24 | 0.33 | 0.34 | 0.34 | 0.36 | 0.40 | 0.47 |
| 2011 | 0.09 | 0.09 | 0.11 | 0.12 | 0.15 | 0.17 | 0.31 | 0.34 | 0.35 | 0.37 | 0.41 | 0.46 |
| 2012* | 0.09 | 0.10 | 0.11 | 0.12 | 0.15 | 0.18 | 0.38 | 0.41 | 0.42 | 0.46 | 0.51 | 0.57 |
| Monthly average |  |  |  |  |  |  |  |  |  |  |  |  |
| 2012-Feb. | 0.06 | 0.08 | 0.10 | 0.12 | 0.13 | 0.17 | 0.37 | 0.40 | 0.40 | 0.46 | 0.51 | 0.60 |
| Mar. | 0.09 | 0.12 | 0.13 | 0.13 | 0.16 | 0.18 | 0.37 | 0.41 | 0.41 | 0.45 | 0.51 | 0.59 |
| Apr. | 0.11 | 0.12 | 0.12 | 0.13 | 0.16 | 0.20 | 0.39 | 0.42 | 0.42 | 0.46 | 0.52 | 0.61 |
| May | 0.11 | 0.10 | 0.11 | 0.13 | 0.16 | 0.19 | 0.39 | 0.42 | 0.42 | 0.46 | 0.51 | 0.58 |
| June | 0.13 | 0.13 | 0.13 | 0.14 | 0.17 | 0.21 | 0.39 | 0.41 | 0.43 | 0.46 | 0.52 | 0.57 |
| July* | 0.16 | 0.16 | 0.14 | 0.15 | 0.18 | 0.22 | 0.39 | 0.42 | 0.43 | 0.46 | 0.49 | 0.49 |
| Weekly (Friday) average |  |  |  |  |  |  |  |  |  |  |  |  |
| June 15 | 0.14 | 0.15 | 0.15 | 0.15 | 0.16 | 0.20 | 0.38 | 0.41 | 0.44 | 0.46 | 0.54 | 0.58 |
| June 22 | 0.14 | 0.14 | 0.12 | 0.13 | 0.17 | 0.21 | 0.38 | 0.41 | 0.43 | 0.46 | 0.51 | 0.59 |

# TYPICAL ELECTRIC COMPANY 

Summary of Cost of Equity

Proxy Group DCF ROE ..... 8.40\%
Traditional CAPM ROE ..... 9.36\%
Zero Beta CAPM ROE ..... 10.11\%
Generic (Average) CAPM ROE ..... 9.74\%
2/3 DCF \& 1/3 CAPM Weighting ..... 8.85\% Financial Risk Adjustment 0.00\%Business Risk AdjustmentIssuance Cost Adjustment0.00\%Adjusted ROERecommended ROE8.85\%8.90\%

Cases 12-E-0201 \& 12-G-0202.

|  | Moody's |
| :---: | :---: |
| Company | Rating |
| ALLETE Inc. | Baa1 |
| Alliant Energy Corp. | Baa1 |
| Ameren Corp. | Baa3 |
| American Electric Power Co. Inc. | Baa2 |
| Avista Corp. | Baa2 |
| Black Hills Corp. | Baa3 |
| CenterPoint Energy Inc. | Baa3 |
| Central Vermont Public Service Corp. | A3 |
| CH Energy Group Inc | NR |
| Cleco Corp. | Baa3 |
| CMS Energy Corp. | Ba1 |
| Consolidated Edison Inc. | Baa1 |
| Constellation Energy Group Inc. | Baa3 |
| Dominion Resources Inc. | Baa2 |
| DTE Energy Co. | Baa2 |
| Duke Energy Corp. | Baa2 |
| Edison International | Baa2 |
| El Paso Electric Co. | Baa2 |
| Empire District Electric Co. | Baa2 |
| Entergy Corp. | Baa3 |
| Exelon Corp. | Baa1 |
| FirstEnergy Corp. | Baa3 |
| Great Plains Energy Inc. | Baa3 |
| Hawaiian Electric Industries Inc. | Baa2 |
| IDACORP Inc. | Baa2 |
| Integrys Energy Group Inc. | Baa1 |
| ITC Holdings Corp. | Baa2 |
| Madison Gas \& Electric Co. | A1 |
| NextEra Energy | Baa1 |
| Northeast Utilities | Baa2 |
| NV Energy Inc. | Ba 2 |
| OGE Energy Corp. | Baa1 |
| Otter Tail Corp. | Ba1 |
| Pepco Holdings Inc. | Baa3 |

NIAGARA MOHAWK POWER

|  | 2011 \% of | Dividend |
| :---: | :---: | :---: |
| S\&P Rating | Utility Rev. <br> Paying? |  |
| BBB+ | $91.8 \%$ | Yes |
| BBB+ | $86.6 \%$ | Yes |
| BBB- | $77.2 \%$ | Yes |
| BBB | $93.2 \%$ | Yes |
| BBB | $89.1 \%$ | Yes |
| BBB- | $90.8 \%$ | Yes |
| BBB+ | $75.2 \%$ | Yes |
| NR | $87.3 \%$ | Yes |
| NR | $71.1 \%$ | Yes |
| BBB | $94.2 \%$ | Yes |
| BBB- | $96.2 \%$ | Yes |
| A- | $87.6 \%$ | Yes |
| NR | $21.7 \%$ | Yes |
| A- | $61.9 \%$ | Yes |
| BBB+ | $74.8 \%$ | Yes |
| A- | $78.3 \%$ | Yes |
| BBB- | $82.9 \%$ | Yes |
| BBB | $62.1 \%$ | Yes |
| BBB- | $98.9 \%$ | Yes |
| BBB | $78.7 \%$ | Yes |
| BBB | $51.7 \%$ | Yes |
| BBB- | $65.9 \%$ | Yes |
| BBB | $100.0 \%$ | Yes |
| BBB- | $91.7 \%$ | Yes |
| BBB | $99.6 \%$ | Yes |
| A- | $70.0 \%$ | Yes |
| BBB+ | $100.0 \%$ | Yes |
| AA- | $99.0 \%$ | Yes |
| A- | $69.2 \%$ | Yes |
| A- | $98.7 \%$ | Yes |
| CCC | $100.0 \%$ | Yes |
| BBB+ | $100.0 \%$ | Yes |
| BBB- | $31.8 \%$ | Yes |
| BBB+ | $78.5 \%$ | Yes |
|  |  |  |

(Universe of Electric Utilities ) Exhibit__(KXD-15)
Page 1 of 2

## Not in M\&A Regulated by state

 ActivityYes
Commission Pr

Proxy Group
selected
selected
selected
selected
selected
selected
selected
selected
selected
selected
selected
selected selected
selected
selected
selected selected
selected
selected
selected
selected

| Cases 12-E-0201 \& 12-G-0202. |  |
| :--- | :--- |
| PG\&E Corp. | Baa1 |
| Pinnacle West Capital Corp. | Baa3 |
| PNM Resources Inc. | Ba1 |
| Portland General Electric Co. | Baa2 |
| PPL Corp. | Baa3 |
| Progress Energy Inc. | Baa2 |
| Public Service Enterprise Group Inc. | Baa2 |
| SCANA Corp. | Baa3 |
| Sempra Energy | Baa1 |
| Southern Co. (The) | Baa1 |
| TECO Energy Inc. | Baa3 |
| UIL Holdings Corp. | Baa3 |
| UniSource Energy | Ba1 |
| Vectren Corp. | A3 |
| Westar Energy Inc. | Baa2 |
| Wisconsin Energy Corp. | A3 |
| Xcel Energy Inc. | Baa1 |
| Total Selected |  |


| NIAGARA MOHAWK POWER |  |  |
| :---: | :---: | :---: |
| BBB | $100.0 \%$ | Yes |
| BBB | $99.9 \%$ | Yes |
| BBB- | $74.2 \%$ | Yes |
| BBB | $95.9 \%$ | Yes |
| BBB | $49.4 \%$ | Yes |
| BBB+ | $90.1 \%$ | Yes |
| BBB | $66.1 \%$ | Yes |
| BBB+ | $74.2 \%$ | Yes |
| BBB+ | $82.9 \%$ | Yes |
| A | $88.8 \%$ | Yes |
| BBB+ | $73.9 \%$ | Yes |
| BBB | $100.0 \%$ | Yes |
| NR | $81.5 \%$ | Yes |
| A- | $62.6 \%$ | Yes |
| BBB | $75.8 \%$ | Yes |
| A- | $98.8 \%$ | Yes |
| A- | $99.3 \%$ | Yes |


| (Universe of <br> Yes <br> Electric Utilities ) | Exhibit__(KXD-15) <br> Yes | ses | selected |
| :---: | :---: | :---: | :---: | Page 2 of 2

Case 12-E-0201 \&12-G-0202 $\quad$ Exhibit_(KXD-16)

| PROXY GROUP STATISTICS |  |  |  |  |  |  |  |  |  |  | Moody's |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Ticker | Ratings Moody's | $\begin{aligned} & \text { Ratings } \\ & \text { S\&P } \end{aligned}$ | \% Utility Revenue | $\begin{array}{\|c\|} \hline 2011 \text { Equity } \\ \text { Ratio } \\ \text { Value Line } \\ \hline \end{array}$ | $\begin{gathered} \text { S\&P } \\ \text { Business } \\ \text { Profile } \end{gathered}$ | Numerical <br> Business Risk <br> Weighting | S\&P Financial Profile | Numerical <br> Financial Risk Weighting | Business Category |  |  |
| ALLETE Inc. | ALE | Baa1 | BBB+ | 91.8 | 55.70 | Strong | 2 | Significant | + | Electric | 8 | 8 |
| Alliant Energy Corp | LNT | Baa1 | BBB+ | 86.6 | 50.90 | Excellent | 1 | Significant | 4 | Electric \& Gas Combo | 8 | 8 |
| Ameren Corp. | AEE | Baa3 | BBB- | 77.2 | 53.70 | Strong | 2 | Significant | 4 | Electric \& Gas Combo | 10 | 10 |
| American Electric Power Co. Inc. | AEP | Baa2 | BBB | 93.2 | 48.50 | Excellent | 1 | Significant | 4 | Electric | 9 | 9 |
| Avista Corp. | AVA | Baa2 | BBB | 89.1 | 48.60 | Excellent | 1 | Significant | 4 | Electric \& Gas Combo | 9 | 9 |
| Black Hills Corp. | BKH | Baa3 | BBB- | 90.8 | 48.60 | Strong | 2 | Intermediate | 3 | Electric \& Gas Combo | 10 | 10 |
| CenterPoint Energy Inc. | CNP | Baa3 | BBB+ | 74.0 | 32.80 | Excellent | 1 | Significant | 4 | Electric \& Gas Combo | 10 | 8 |
| Cleco Corp. | CNL | Baa3 | BBB | 94.2 | 51.50 | Excellent | 1 | Aggressive | 5 | Electric \& Gas Combo | 10 | 9 |
| Consolidated Edison Inc. | ED | Baa1 | A- | 87.6 | 52.50 | Excellent | 1 | Aggressive | 5 | Electric | 8 | 7 |
| DTE Energy Co. | DTE | Baa2 | BBB+ | 74.8 | 49.40 | Strong | 2 | Significant | 4 | Electric \& Gas Combo | 9 | 8 |
| Edison International | EIX | Baa2 | BBB- | 82.9 | 40.60 | Strong | 2 | Aggressive | 5 | Electric \& Gas Combo | 9 | 10 |
| Empire District Electric Co. | EDE | Baa2 | BBB- | 98.9 | 50.10 | Excellent | 1 | Aggressive | 5 | Electric | 9 | 10 |
| Entergy Corp. | ETR | Baa3 | BBB | 99.0 | 46.4 | Strong | 1 | Aggressive | 5 | Electric \& Gas Combo | 10 | 9 |
| Great Plains Energy Inc. | GXP | Baa3 | BBB | 100.0 | 51.60 | Excellent | 1 | Aggressive | 5 | Electric \& Gas Combo | 10 | 9 |
| Hawaiian Electric Industries Inc. | HE | Baa2 | BBB- | 91.7 | 53.90 | Strong | 2 | Aggressive | 5 | Electric | 9 | 10 |
| IDACORP Inc. | IDA | Baa2 | BBB | 99.6 | 54.40 | Excellent | 1 | Aggressive | 5 | Electric \& Gas Combo | 9 | 9 |
| Integrys Energy Group Inc. | TEG | Baa1 | A- | 70.0 | 60.60 | Excellent | 1 | Aggressive | 5 | Electric | 8 | 7 |
| Madison Gas \& Electric Co. | MGEE | A1 | AA- | 99.0 | 60.40 | Excellent | 1 | Aggressive | 5 | Electric | 5 | 4 |
| Northeast Utilities | NU | Baa2 |  | 98.7 | 45.30 | Excellent | 1 | Aggressive | 5 | Electric \& Gas Combo | 9 | 7 |
| OGE Energy Corp. | OGE | Baa1 | BBB+ | 100.0 | 48.40 | Strong | 2 | Significant | 4 | Electric \& Gas Combo | 8 |  |
| Pepco Holdings Inc. | NYSE:POM | Baa3 | ${ }^{\text {BBB+ }}$ | 78.5 | 53.30 | Excellent | 1 | Aggressive | 5 | Electric \& Gas Combo | 10 |  |
| PG\&E Corp. | PCG | Baa1 | BBB | 100.0 | 50.20 | Strong | 2 | Aggressive | 4 | Electric \& Gas Combo | 8 | 9 |
| Pinnacle West Capital Corp. Portland General Electric Co. | PNW POR | Baa3 Baa2 |  | 99.9 95.9 | 55.90 50.40 | Excellent | 1 | Significant Significant | 4 | Electric \& Gas Combo | 10 | 9 |
| SCANA Corp. | SCG | Baa3 | BBB+ | 74.2 | 45.70 | Excellent | 1 | Significant | 4 | Electric | 10 | 8 |
| Sempra Energy | SRE | Baa1 | BBB+ | 82.9 | 49.20 | Strong | 2 | Aggressive | 5 | Electric \& Gas Combo | 8 | 8 |
| Southern Co.(The) | So | Baa1 | A | 88.8 | 47.10 | Excellent | 1 | Intermediate | 5 | Electric | 8 | 9 |
| TECO Energy Inc. | TE | Baa3 | ${ }^{\text {BBB+ }}$ | 73.9 | 45.80 | Excellent | 1 | Significant | 4 | Electric \& Gas Combo | 10 | 8 |
| UIL Holdings Corp. | UlL | Baa3 | BBB | 100.0 | 41.40 | Excellent | 1 | Significant | 4 | Electric | 10 | 9 |
| Westar Energy Inc. | WR | Baa2 | BBB | 75.8 | 50.00 | Excellent | 1 | Aggressive | 5 | Electric \& Gas Combo | 9 | 9 |
| Wisconsin Energy Corp. | WEC | A3 | A- | 98.8 | 46.00 | Excellent | 1 | Intermediate | 3 | Electric \& Gas Combo |  |  |
| Xcel Energy Inc. | XEL | Baa1 | A- | 99.3 | 48.90 | Excellent | 1 | Significant | 4 | Electric \& Gas Combo | 8 | 7 |
| Median Average of Proxy Group |  | Baa2 | BBB+ | $\begin{aligned} & 91.75 \\ & 89.60 \\ & \hline \end{aligned}$ | $\begin{aligned} & 49.70 \\ & 49.62 \\ & \hline \end{aligned}$ | Close to Excellent | 1.3 | Significant | 4.4 |  | 8.94 | 8.45 |
| Natiional Grid Plc |  | Baa1 | A- |  |  |  |  |  |  |  |  |  |
| NiMo |  | A3 | A- |  |  |  |  |  |  |  |  |  |

Sources
Latest Credit Ratings from Standard \& Poor's ( May \& June 2012) \& Moody's Credit Reports
\% Utility Revenue from 2011 Annual reports(10K)
Busi
Business \& Financial Profiles From Standard \& Poor's Latest Credit Reports

| Staff Proxy Group <br> 3 Month Average Price Data |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Company | Three-month Price | Apr-12 |  | May-12 |  | Jun-12 |  |
|  |  | High | Low | High | Low | High | Low |
| ALLETE Inc. | \$40.32 | 41.82 | 39.86 | 41.63 | 38.03 | 41.99 | 38.61 |
| Alliant Energy Corp | \$44.20 | 45.38 | 42.00 | 45.67 | 43.00 | 46.00 | 43.15 |
| Ameren Corp. | \$32.47 | 32.91 | 31.15 | 33.11 | 31.69 | 34.04 | 31.93 |
| American Electric Power Co. Inc. | \$38.51 | 38.95 | 36.97 | 39.07 | 37.43 | 40.46 | 38.18 |
| Avista Corp. | \$25.89 | 26.53 | 24.95 | 26.70 | 24.95 | 27.07 | 25.14 |
| Black Hills Corp. | \$32.74 | 34.31 | 32.10 | 33.68 | 31.32 | 33.43 | 31.61 |
| CenterPoint Energy Inc. | \$19.96 | 20.24 | 18.91 | 20.46 | 19.52 | 21.00 | 19.65 |
| Cleco Corp. | \$40.43 | 40.93 | 38.16 | 41.29 | 39.46 | 42.45 | 40.26 |
| Consolidated Edison Inc. | \$59.85 | 59.50 | 57.01 | 60.65 | 58.35 | 63.64 | 59.97 |
| DTE Energy Co. | \$56.54 | 56.78 | 53.70 | 57.38 | 54.95 | 60.25 | 56.18 |
| Edison International | \$44.12 | 44.05 | 41.42 | 45.32 | 43.14 | 46.55 | 44.24 |
| Empire District Electric Co. | \$20.30 | 20.60 | 19.51 | 20.82 | 19.80 | 21.24 | 19.85 |
| Entergy Corp. | \$65.79 | 68.13 | 64.91 | 66.54 | 62.97 | 68.20 | 63.96 |
| Great Plains Energy Inc. | \$20.22 | 20.50 | 19.47 | 20.50 | 19.56 | 21.64 | 19.63 |
| Hawaiian Electric Industries Inc. | \$26.83 | 26.65 | 24.65 | 27.69 | 25.93 | 28.87 | 27.21 |
| IDACORP Inc. | \$40.14 | 41.55 | 39.00 | 41.03 | 38.17 | 42.22 | 38.84 |
| Integrys Energy Group Inc. | \$54.09 | 54.70 | 50.89 | 55.15 | 52.83 | 57.55 | 53.41 |
| Madison Gas \& Electric Co. | \$45.35 | 46.01 | 43.10 | 46.49 | 44.29 | 47.82 | 44.38 |
| Northeast Utilities | \$36.61 | 37.38 | 35.40 | 37.38 | 34.84 | 39.09 | 35.57 |
| OGE Energy Corp. | \$52.88 | 54.03 | 50.87 | 55.31 | 52.40 | 54.46 | 50.23 |
| Pepco Holdings Inc. | \$18.88 | 18.98 | 18.14 | 19.19 | 18.47 | 19.63 | 18.88 |
| PG\&E Corp. | \$43.86 | 44.21 | 41.88 | 44.94 | 43.25 | 45.56 | 43.30 |
| Pinnacle West Capital Corp. | \$48.70 | 48.56 | 45.95 | 49.59 | 47.41 | 52.30 | 48.37 |
| Portland General Electric Co. | \$25.35 | 25.86 | 24.25 | 26.03 | 24.26 | 26.94 | 24.75 |
| SCANA Corp. | \$46.10 | 46.25 | 43.32 | 47.22 | 45.32 | 48.24 | 46.22 |
| Sempra Energy | \$64.37 | 64.92 | 60.04 | 65.50 | 63.02 | 69.46 | 63.30 |
| Southern Co.(The) | \$45.92 | 46.00 | 44.22 | 46.30 | 44.95 | 48.45 | 45.62 |
| TECO Energy Inc. | \$17.62 | 18.06 | 16.90 | 18.17 | 17.18 | 18.33 | 17.10 |
| UIL Holdings Corp. | \$34.16 | 35.28 | 33.00 | 34.68 | 32.56 | 36.04 | 33.39 |
| Westar Energy Inc. | \$28.38 | 28.74 | 26.80 | 28.96 | 27.35 | 30.17 | 28.23 |
| Wisconsin Energy Corp. | \$37.16 | 36.84 | 34.54 | 37.97 | 36.14 | 40.00 | 37.46 |
| Xcel Energy Inc. | \$27.44 | 27.13 | 25.89 | 28.12 | 26.75 | 29.12 | 27.62 |

## Source

CapitallQ

## Capital IQ

|  |  |  |  |  |  |  |  |  |  | Page 1 of 2 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Company | Beta | Price | $\begin{gathered} \text { EPS } \\ \text { 2015-17 } \end{gathered}$ | 2012 | DPS 2013 | 2015-17 | 2012 | 2013 | 2015-17 | \# 0 | hares 2015-17 | DPS Growth 2015-17 |
| ALLETE Inc. | 0.70 | \$40.32 | 3.50 | 1.84 | 1.88 | 2.00 | 29.80 | 30.70 | 34.50 | 38.50 | 40.50 | 2.08\% |
| Alliant Energy Corp | 0.75 | \$44.20 | 3.50 | 1.80 | 1.90 | 2.20 | 29.45 | 30.55 | 32.35 | 112.00 | 116.00 | 5.01\% |
| Ameren Corp. | 0.80 | \$32.47 | 2.50 | 1.61 | 1.68 | 1.80 | 31.75 | 32.20 | 34.00 | 242.65 | 255.00 | 2.33\% |
| American Electric Power Co. Inc. | 0.70 | \$38.51 | 3.75 | 1.90 | 1.96 | 2.15 | 31.65 | 33.00 | 37.50 | 486.00 | 500.00 | 3.13\% |
| Avista Corp. | 0.70 | \$25.89 | 2.25 | 1.16 | 1.22 | 1.40 | 21.10 | 21.75 | 24.00 | 60.00 | 62.00 | 4.69\% |
| Black Hills Corp. | 0.85 | \$32.74 | 2.50 | 1.48 | 1.50 | 1.60 | 27.95 | 28.65 | 31.00 | 44.20 | 45.00 | 2.17\% |
| CenterPoint Energy Inc. | 0.80 | \$19.96 | 1.40 | 0.81 | 0.83 | 0.90 | 10.30 | 10.65 | 12.00 | 427.00 | 431.00 | 2.74\% |
| Cleco Corp. | 0.65 | \$40.43 | 3.25 | 1.25 | 1.40 | 1.90 | 24.55 | 25.70 | 30.00 | 61.00 | 61.00 | 10.72\% |
| Consolidated Edison Inc. | 0.60 | \$59.85 | 4.25 | 2.42 | 2.44 | 2.50 | 40.35 | 41.80 | 47.00 | 293.00 | 293.00 | 0.81\% |
| DTE Energy Co. | 0.75 | \$56.54 | 4.50 | 2.40 | 2.49 | 2.75 | 43.00 | 44.40 | 49.25 | 175.00 | 181.00 | 3.37\% |
| Edison International | 0.80 | \$44.12 | 3.50 | 1.31 | 1.33 | 1.50 | 32.45 | 33.90 | 39.00 | 325.81 | 325.81 | 4.09\% |
| Empire District Electric Co. | 0.70 | \$20.30 | 1.75 | 1.00 | 1.00 | 1.20 | 16.75 | 17.10 | 18.50 | 42.25 | 43.25 | 6.27\% |
| Entergy Corp. | 0.70 | \$65.79 | 5.25 | 3.32 | 3.32 | 3.40 | 50.90 | 52.15 | 57.50 | 177.00 | 171.00 | 0.80\% |
| Great Plains Energy Inc. | 0.75 | \$20.22 | 1.75 | 0.86 | 0.88 | 1.10 | 21.50 | 22.00 | 23.75 | 154.00 | 154.00 | 7.72\% |
| Hawaiian Electric Industries Inc. | 0.70 | \$26.83 | 2.00 | 1.24 | 1.24 | 1.30 | 16.45 | 17.45 | 21.50 | 98.00 | 140.00 | 1.59\% |
| IDACORP Inc. | 0.70 | \$40.14 | 3.55 | 1.32 | 1.40 | 1.90 | 35.35 | 37.55 | 43.20 | 50.00 | 51.00 | 10.72\% |
| Integrys Energy Group Inc. | 0.90 | \$54.09 | 4.25 | 2.72 | 2.72 | 2.80 | 38.45 | 39.50 | 43.75 | 77.90 | 77.90 | 0.97\% |
| Madison Gas \& Electric Co. | 0.60 | \$45.35 | 3.15 | 1.55 | 1.62 | 1.84 | 25.00 | 26.20 | 30.65 | 23.20 | 23.50 | 4.34\% |
| Northeast Utilities | 0.70 | \$36.61 | 3.25 | 1.32 | 1.44 | 1.70 | 29.10 | 30.30 | 34.75 | 314.00 | 314.00 | 5.69\% |
| OGE Energy Corp. | 0.80 | \$52.88 | 4.25 | 1.59 | 1.66 | 1.90 | 28.05 | 30.15 | 37.00 | 99.00 | 101.00 | 4.60\% |
| Pepco Holdings Inc. | 0.75 | \$18.88 | 1.70 | 1.08 | 1.12 | 1.16 | 19.40 | 19.70 | 21.50 | 235.00 | 255.00 | 1.18\% |
| PG\&E Corp. | 0.55 | \$43.86 | 3.75 | 1.82 | 1.82 | 2.00 | 30.15 | 31.25 | 36.00 | 427.00 | 435.00 | 3.19\% |
| Pinnacle West Capital Corp. | 0.70 | \$48.70 | 3.75 | 2.10 | 2.18 | 2.40 | 36.15 | 37.35 | 41.25 | 110.00 | 118.50 | 3.26\% |
| Portland General Electric Co. | 0.75 | \$25.35 | 2.25 | 1.08 | 1.11 | 1.25 | 22.90 | 23.70 | 26.50 | 75.50 | 76.50 | 4.04\% |
| SCANA Corp. | 0.70 | \$46.10 | 3.75 | 1.98 | 2.02 | 2.15 | 31.70 | 33.80 | 39.50 | 137.00 | 160.00 | 2.10\% |
| Sempra Energy | 0.80 | \$64.37 | 5.75 | 2.40 | 2.50 | 2.80 | 42.80 | 44.50 | 52.00 | 241.00 | 246.00 | 3.85\% |
| Southern Co.(The) | 0.55 | \$45.92 | 3.25 | 1.94 | 2.02 | 2.25 | 21.15 | 22.25 | 26.25 | 875.00 | 940.00 | 3.66\% |
| TECO Energy Inc. | 0.85 | \$17.62 | 1.75 | 0.88 | 0.92 | 1.10 | 10.90 | 11.35 | 13.25 | 217.00 | 221.00 | 6.14\% |
| UIL Holdings Corp. | 0.70 | \$34.16 | 2.45 | 1.73 | 1.73 | 1.73 | 21.95 | 22.55 | 25.50 | 51.00 | 51.00 | 0.00\% |
| Westar Energy Inc. | 0.75 | \$28.38 | 2.40 | 1.32 | 1.36 | 1.48 | 23.45 | 25.00 | 28.15 | 128.00 | 135.00 | 2.86\% |
| Wisconsin Energy Corp. | 0.65 | \$37.16 | 2.75 | 1.20 | 1.36 | 1.80 | 17.95 | 18.15 | 20.25 | 230.00 | 223.00 | 9.79\% |
| Xcel Energy Inc. | 0.65 | \$27.44 | 2.25 | 1.06 | 1.11 | 1.35 | 18.15 | 19.25 | 21.75 | 490.00 | 515.00 | 6.74\% |

Median Beta

### 0.70

Data Source Value Line Investment Survey for June 22,2012, May 25, 2012, \& May 4, 2012 Editions

NIAGARA MOHAWK POWER CORPORATION
STAFF DCF APPROACH - GENERIC FINANCE METHOD
Page 2 of 2

| Company | Retention <br> Rate <br> 2016 | Return on Equity 2016 | B $\times$ R | Increase in Shares | $\begin{aligned} & \text { PBR } \\ & 2015 \\ & \hline \end{aligned}$ | S Factor | V Factor | S x V | $\begin{aligned} & \text { Sustainable } \\ & \text { Growth } \end{aligned}$ | Long-Form ROE |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ALLETE Inc. | 42.86\% | 10.34\% | 4.43\% | 1.27\% | 1.35 | 0.02 | 0.26 | 0.45\% | 4.88\% | 9.21\% |
| Alliant Energy Corp | 37.14\% | 10.92\% | 4.06\% | 0.88\% | 1.50 | 0.01 | 0.33 | 0.44\% | 4.50\% | 8.85\% |
| Ameren Corp. | 28.00\% | 7.42\% | 2.08\% | 1.25\% | 1.02 | 0.01 | 0.02 | 0.03\% | 2.11\% | 7.31\% |
| American Electric Power Co. Inc. | 42.67\% | 10.21\% | 4.36\% | 0.71\% | 1.22 | 0.01 | 0.18 | 0.15\% | 4.51\% | 9.42\% |
| Avista Corp. | 37.78\% | 9.53\% | 3.60\% | 0.82\% | 1.23 | 0.01 | 0.19 | 0.19\% | 3.79\% | 8.61\% |
| Black Hills Corp. | 36.00\% | 8.17\% | 2.94\% | 0.45\% | 1.17 | 0.01 | 0.15 | 0.08\% | 3.02\% | 7.50\% |
| CenterPoint Energy Inc. | 35.71\% | 11.90\% | 4.25\% | 0.23\% | 1.94 | 0.00 | 0.48 | 0.22\% | 4.47\% | 8.43\% |
| Cleco Corp. | 41.54\% | 11.11\% | 4.62\% | 0.00\% | 1.65 | 0.00 | 0.39 | 0.00\% | 4.62\% | 8.67\% |
| Consolidated Edison Inc. | 41.18\% | 9.22\% | 3.80\% | 0.00\% | 1.48 | 0.00 | 0.33 | 0.00\% | 3.80\% | 7.55\% |
| DTE Energy Co. | 38.89\% | 9.29\% | 3.61\% | 0.85\% | 1.31 | 0.01 | 0.24 | 0.27\% | 3.88\% | 8.22\% |
| Edison International | 57.14\% | 9.18\% | 5.25\% | 0.00\% | 1.36 | 0.00 | 0.26 | 0.00\% | 5.25\% | 8.16\% |
| Empire District Electric Co. | 31.43\% | 9.58\% | 3.01\% | 0.59\% | 1.21 | 0.01 | 0.18 | 0.12\% | 3.14\% | 8.48\% |
| Entergy Corp. | 35.24\% | 9.28\% | 3.27\% | -0.86\% | 1.29 | -0.01 | 0.23 | -0.25\% | 3.02\% | 7.77\% |
| Great Plains Energy Inc. | 37.14\% | 7.46\% | 2.77\% | 0.00\% | 0.94 | 0.00 | -0.06 | 0.00\% | 2.77\% | 7.72\% |
| Hawaiian Electric Industries Inc. | 35.00\% | 9.63\% | 3.37\% | 9.33\% | 1.63 | 0.15 | 0.39 | 5.89\% | 9.26\% | 13.02\% |
| IDACORP Inc. | 46.48\% | 8.41\% | 3.91\% | 0.50\% | 1.14 | 0.01 | 0.12 | 0.07\% | 3.98\% | 8.13\% |
| Integrys Energy Group Inc. | 34.12\% | 9.88\% | 3.37\% | 0.00\% | 1.41 | 0.00 | 0.29 | 0.00\% | 3.37\% | 8.09\% |
| Madison Gas \& Electric Co. | 41.59\% | 10.55\% | 4.39\% | 0.32\% | 1.81 | 0.01 | 0.45 | 0.26\% | 4.65\% | 8.19\% |
| Northeast Utilities | 47.69\% | 9.57\% | 4.56\% | 0.00\% | 1.26 | 0.00 | 0.21 | 0.00\% | 4.56\% | 8.61\% |
| OGE Energy Corp. | 55.29\% | 11.88\% | 6.57\% | 0.50\% | 1.89 | 0.01 | 0.47 | 0.44\% | 7.01\% | 9.94\% |
| Pepco Holdings Inc. | 31.76\% | 8.02\% | 2.55\% | 2.06\% | 0.97 | 0.02 | -0.03 | -0.06\% | 2.49\% | 8.22\% |
| PG\&E Corp. | 46.67\% | 10.66\% | 4.98\% | 0.47\% | 1.45 | 0.01 | 0.31 | 0.21\% | 5.19\% | 9.12\% |
| Pinnacle West Capital Corp. | 36.00\% | 9.24\% | 3.33\% | 1.88\% | 1.35 | 0.03 | 0.26 | 0.65\% | 3.98\% | 8.37\% |
| Portland General Electric Co. | 44.44\% | 8.65\% | 3.84\% | 0.33\% | 1.11 | 0.00 | 0.10 | 0.04\% | 3.88\% | 8.28\% |
| SCANA Corp. | 42.67\% | 9.74\% | 4.16\% | 3.96\% | 1.45 | 0.06 | 0.31 | 1.80\% | 5.95\% | 9.90\% |
| Sempra Energy | 51.30\% | 11.34\% | 5.82\% | 0.51\% | 1.50 | 0.01 | 0.34 | 0.26\% | 6.08\% | 9.73\% |
| Southern Co.(The) | 30.77\% | 12.72\% | 3.91\% | 1.81\% | 2.17 | 0.04 | 0.54 | 2.12\% | 6.03\% | 10.16\% |
| TECO Energy Inc. | 37.14\% | 13.55\% | 5.03\% | 0.46\% | 1.62 | 0.01 | 0.38 | 0.28\% | 5.31\% | 10.65\% |
| UIL Holdings Corp. | 29.39\% | 9.80\% | 2.88\% | 0.00\% | 1.56 | 0.00 | 0.36 | 0.00\% | 2.88\% | 7.57\% |
| Westar Energy Inc. | 38.33\% | 8.69\% | 3.33\% | 1.34\% | 1.21 | 0.02 | 0.17 | 0.28\% | 3.61\% | 8.31\% |
| Wisconsin Energy Corp. | 34.55\% | 13.83\% | 4.78\% | -0.77\% | 2.07 | -0.02 | 0.52 | -0.82\% | 3.95\% | 8.21\% |
| Xcel Energy Inc. | 40.00\% | 10.56\% | 4.22\% | 1.25\% | 1.51 | 0.02 | 0.34 | 0.64\% | 4.86\% | 9.11\% |
| Average |  |  |  |  |  |  |  |  | 4.40\% | 8.74\% |
| Median |  |  |  |  |  |  |  |  | 4.22\% | 8.40\% |



## THE MARKET YORTFOLIO

An investor might chouse to invest a proportion of his or her weath an a portfolio of risky assets with tir remander in cash-eaming merest at the rish free rate for indeed in, borrow money to fuad his or her purchase of risky assets m which ase there is a negative ash weightingl. Here, the ratio of risky assets to rish free asset determines overall reburn-this rehtionshap is clearly linear. It is thus possible to achieve a particular return in one of two ways:

1. By investing all of one's wealth mat nsky portfolo,
2. By investing a proportion in a risky portfolio and the remander in cash leither browed or invested).

Fur a given level of return, however, onk one of these portfolion will be optimal lin the sense of lowest risk. Since the risk free asset is, by definition, uncormated with duy other asset, opton 2 , will generally have the lower variance and hence be the more efficient of tise two.

This relationship atso holds for portfolios along the efficient frontier a hegher return portfolio phas ash is mone efficient than a lower retum portfolio alone for that lower level of retars. For a given risk free rate, there is only one optimal fortfolio whinh can the combined with cash to atheve lhe lowest tevel of risk for wy possible return. This is tim markel portfolo.

## ASSUMPTIONS OF CAPM

* All investors have rational expectations.
* There are no arbirrage opportunities.
- Retums are nomully distributed.
- Fixed quantity of assets.
- Perfectly pfficient enpital markets.
- Separation of fimancial and production sectors.
- Thus production plans are fixed.
* Risk-free rates exist with limitess borrowing capacty and miversal acoess.
- He Risk-jree borrowing and lending rates are equal.
* No inflation and no change in the level of interest rate exists.
* Perfert information, hence all investors have the same expectations athout security returns for any given tme period.
from the mean occur $m$ the market more frequently thab fire nomal distribution assumption woule expect.
- The mutel assumes that the bariance of nefom: is an adequate measurement of risk. This might be fustified under the assumption of nomally distributed thtumto, but for general return distributions other risk measures thike coherent rish measures! will likeh reflect the invegtors' preferences more adequatels.
- The mosdel does not appear tio adequately exphain the vatiation in stack tyturth. Emparical studies show that fow beta streks may ofter tather renums than the
 conference in Buflalo, New York a a paper ba Farhan Mukadam, Fischer Black, Whehael lensen, and Myron Sholes. Either that fact is itself rational which saves the efficient markets hypothesis EMH but makes CAPM wrong; or it is imational (which saves CAPM, but makes EbHH wrong - indeed, this possibility makes volatility arbitrage a strategy for milably beating the marketi.
 risk (lower varime) to hugtee risk and romersely given a sertan level of risk will prefer bigher seturn to lower omes It does not dlow for investors who will accept kower raturn for hupher rask. Casmo gamblers clearly pay for risk, and it is possible that some stock traders will pay for rish as well.
- The model assumes that all investors have access to the same information and agree about the risk and expected retum of all assets. Homogeneous expectations issumption
* The aratel assumes that there are wo taxes or transaction costs, although this assumption mm , be relaxed wath more complicated versions of the model.
- The market portiolio consists of all assets in all markets, where each asset is weighted by its market capitalization. This assumes no preference between markets and assets for individual investors, and that investor choose assets solely as a function of their riskreturn profile. It also assumes that all assets are infinitely divisible as tos the amount which mors be beld or tramsacted.
- The market porffolio should in theory inchode all types of assets that are held by anyone as an investment (including works of art, real esbate, human capital...) in practice, such a market portiolio is unobservable and people usually substitute a stock index as a proxy for the tue market portiolio. Linfortunately, it has been shown that this substitution is not imocuous and can lead to false inferences as to the validity of the CAPM. and it has been said that due to the inobservability of the true market portfolio, the CAPM might not be empirically testable. This was presented in greater depth in a paper by Richard Roll in 1977, and is generally referred to as Roll's Critazue. Theormes sum as the Arbitenge Pricing Theory (APT: fave sime been fommatad an circmavent this problem.


## Monthly insights for equity management

## Big reversal in strategies from 1Q

"Bird in the hand" strategies, or strategies that align with our expectation of companies returning cash to shareholders, were the best-performing group in April after underperforming in 1Q. In contrast, Value and Risk strategies-the top performing strategies of 1Q—underperformed the most in April. Stocks with the lowest EV/EBITDA and P/E ratios were the worst performers, down 4.6\% and $4.1 \%$ respectively. Low Price, a risk factor that enjoyed outperformance in the 1Q beta rally, was also among bottom five factors in April (-3.7\%).

## Long-term trend factors came back in April

Price momentum, or technical strategies, led market returns in April, with the top six factors by performance being longer-term momentum factors. This suggests that leadership in April was very similar to that of last year. Relative Strength (30wk/75wk moving average) was the best-performing factor overall, returning $2.8 \%$ in a month when the S\&P 500 was down $0.8 \%$.

## Stick with quality, growth \& cash deployment for 2012

While valuation strategies normally generate alpha over longer time horizons, we have found that valuation may not matter as much as quality and growth during periods of profits deceleration. So despite their underperformance in the year to date, we expect Quality and Growth measures to lead for the remainder of the year. We also expect that corporate cash deployment strategies (Dividend Yield, Dividend Growth, and Share Repurchase) continue to outperform for both cyclical and secular reasons, and prefer dividend growth over simply high dividend yield. Dividend Growth has actually been one of the most consistent strategies we follow despite the risk-on/risk-off nature of the market the last few years, and has outperformed the market every month in 2012, and in seven of the last eight quarters.

Chart 1: Average performance by strategy group (top decile) - April 2012


Equity \& Quant Strategy | United States 10 May 2012 (Corrected)

# Bank of America Merrill Lynch 

| Savita Subramanian | +16468553878 |
| :--- | ---: |
| Equity \& Quant Strategist |  |
| MLPF\&S |  |
| savita.subramanian@baml.com |  |
| Dan Suzuki, CFA | +16468552827 |
| Equity Strategist |  |
| MLPF\&S |  |
| dan.suzuki@baml.com | +16468553327 |
| Jill Carey |  |
| Equity Strategist |  |
| MLPF\&S |  |
| jill.carey@baml.com |  |


| Top 5 screens in April | Perf |
| :--- | :--- |
| Relative Strength (30wk/75wk) | $2.8 \%$ |
| Price Returns (12-Month plus 1-Month) | $2.0 \%$ |
| Price Returns (9-Month) | $1.8 \%$ |
| Price Returns (11-Month since 1 year ago) | $1.6 \%$ |
| Price Returns (12-Month) | $1.5 \%$ |
| S\&P 500 | $-0.8 \%$ |
| Source: BofA Meriil Lynch US Equity and Us Quant Strategy |  |


| Btm 5 screens in April | Perf |
| :--- | :--- |
| Low EV/EBITDA | $-4.6 \%$ |
| Forward Earnings Yield | $-4.1 \%$ |
| Price Returns (3-Month) | $-3.7 \%$ |
| Low Price | $-3.7 \%$ |
| Low Price to Cash Flow | $-3.5 \%$ |
| S\&P 500 | $-0.8 \%$ |
| Sourc:: BofA Merrill Lynch US Equity and Us Quant Strategy |  |

Disclaimer: The valuations and screens contained herein are useful in assessing comparative valuations and comparative earnings prospects and are not intended to recommend transactions relating to any specific security. These indicators should be used in investment decisions only with other factors including financial risk, investment risk, management strategies and operating and financial outlooks.

Source: BofA Merrill Lynch US Equity \& US Quant Strategy

BofA Merrill Lynch does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.
Refer to important disclosures on page 63 to 64. Link to Definitions on page 62.

## Contents

Performance Table ..... 4
Advances and Declines ..... 5
MLQS Financial Confidence \& Thematic Indicators ..... 6
GARP STRATEGIES:
Alpha Surprise Model ..... 7
P/E-to-Growth ..... 8
VALUATION STRATEGIES:
Dividend Discount Model Alpha ..... 9
Earnings Yield ..... 10
Forward Earnings Yield ..... 11
Price/Book Value ..... 12
Price/Cash Flow ..... 13
Price/Free Cash Flow ..... 14
Price/Sales ..... 15
EV / EBITDA ..... 16
Free Cash Flow / EV ..... 17
CASH DEPLOYMENT STRATEGIES:
Dividend Yield ..... 18
Dividend Growth ..... 19
Share Repurchase ..... 20
TECHNICAL STRATEGIES:
Relative Strength -30wk/75wk Moving Average ..... 21
Relative Strength - 5wk/30wk Moving Average ..... 22
Relative Strength - 10wk/40wk Moving Average ..... 23
Price to Moving Average (200 -Day) ..... 24
Price Return - 12-Month Performance ..... 25
Price Return - 9-Month Performance ..... 26
Price Return - 3-Month Performance ..... 27
Price Return - 11-Month Performance ..... 28
Price Return - 12-Month and 1-Month Performance ..... 29
Price Return - 12-Month and 1-Month Reversal ..... 30
Most Active ..... 31
GROWTH STRATEGIES:
Earnings Momentum ..... 32
Projected Five-Year EPS Growth ..... 33
Positive Earnings Surprise ..... 34
Earnings Estimate Revision ..... 35
Equity Duration ..... 36
GROWTH (NEGATIVE) STRATEGIES:
Earnings Torpedo ..... 37
Negative Earnings Surprise ..... 38
QUALITY STRATEGIES:
One-Year Return On Equity ..... 39
Five-Year Return on Equity ..... 40
One-Year Return on Equity (Adjusted for Debt) ..... 41
Five-Year Return on Equity (Adjusted by Debt) ..... 42
Return on Assets ..... 43
Return on Capital ..... 44
RISK STRATEGIES:
Beta ..... 45
Variability of Earnings ..... 46
Estimate Dispersion ..... 47
Low Price ..... 48
MISCELLANEOUS STRATEGIES:
Neglect-Institutional Ownership ..... 49
Neglect-Analyst Coverage ..... 50
Size ..... 51
Foreign Exposure ..... 52
Valuation Backdrop ..... 53
Performance Calculation Methodology ..... 59
Definitions ..... 60

Cases 12-E-0201 \& 12-G-0202

Quantitative Strategies Performance as of 4/30/2012

| Quantitative Strategies | Category | 1 M | 3 M | 6 M | 12 M | YTD | $5 \mathrm{Yr}{ }^{\dagger}$ | Inception Date |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Relative Strength (30wk/75wk) | Technical | 2.8 | 12.4 | 10.9 | -3.7 | 15.0 | -38.1 | 8/31/1995 |
| Price Returns (12-Month plus 1-Month) | Technical | 2.0 | 10.7 | 11.6 | 0.6 | 12.8 | 35.2 | 1/31/2010 |
| Price Returns (9-Month) | Technical | 1.8 | 10.2 | 9.7 | -0.2 | 10.8 | 33.3 | 1/31/2010 |
| Price Returns (11-Month since 1 year ago) | Technical | 1.6 | 10.4 | 10.5 | -1.5 | 11.8 | 32.4 | 1/31/2010 |
| Price Returns (12-Month) | Technical | 1.5 | 11.6 | 11.0 | 2.5 | 12.8 | 37.8 | 1/31/2010 |
| Price Returns (12-Month plus 1-Month Reversal) | Technical | 1.0 | 6.6 | 7.8 | -7.3 | 9.3 | 33.1 | 1/31/2010 |
| Dividend Yield (Total Return) | Corp Cash Deployment | 0.8 | 5.2 | 8.2 | 13.2 | 4.0 | -2.1 | 12/31/1988 |
| Stock Repurchase | Corp Cash Deployment | 0.7 | 5.9 | 14.9 | 6.0 | 11.3 | 0.5 | 12/31/2004 |
| Dividend Yield (Price Return) | Corp Cash Deployment | 0.7 | 3.9 | 5.5 | 7.8 | 2.6 | -26.4 | 12/31/1988 |
| High Projected 5-Yr Growth | Growth | -0.1 | 8.2 | 10.9 | -3.7 | 17.4 | 1.1 | 12/31/1988 |
| Institutional Neglect | Miscellaneous | -0.3 | 3.4 | 6.6 | 0.1 | 6.7 | -10.9 | 12/31/1988 |
| DDM Valuation | Value | -0.3 | 5.0 | 13.1 | 5.6 | 10.8 | -21.6 | 12/31/1988 |
| ROA | Quality | -0.4 | 8.2 | 17.1 | 11.8 | 17.7 | 15.9 | 4/30/1997 |
| High Dividend Growth (Total Return) | Corp Cash Deployment | -0.5 | 9.9 | 15.4 | 7.2 | 17.5 | 26.1 | 12/31/2004 |
| ROE (5-Yr Average) | Quality | -0.5 | 5.3 | 10.1 | 5.9 | 11.2 | 25.7 | 4/30/1997 |
| ROE (1-Yr Avg. Adj. by Debt) | Quality | -0.6 | 5.8 | 14.5 | 7.7 | 14.3 | 16.9 | 4/30/1997 |
| High Dividend Growth (Price Return) | Corp Cash Deployment | -0.6 | 9.3 | 13.8 | 4.5 | 16.7 | 10.7 | 12/31/2004 |
| Relative Strength (Price/200-Day Moving Avg) | Technical | -0.6 | 7.0 | 6.6 | -2.2 | 8.4 | 29.7 | 1/31/2010 |
| ROE (1-Yr Average) | Quality | -0.7 | 4.3 | 12.5 | 4.7 | 13.0 | 16.8 | 4/30/1997 |
| S\&P 500 Index (Price Return) | Benchmark | -0.8 | 6.5 | 11.5 | 2.5 | 11.2 | -5.7 |  |
| S\&P 500 Equal Weighted (Total Return) | Benchmark | -0.8 | 5.9 | 11.3 | 1.3 | 11.8 | 13.6 |  |
| S\&P 500 Equal Weighted (Price Return) | Benchmark | -0.9 | 5.3 | 10.1 | -0.8 | 11.1 | 2.3 |  |
| Relative Strength ( $10 \mathrm{wk} / 40 \mathrm{wk}$ ) | Technical | -1.0 | 6.5 | 7.9 | -3.8 | 8.0 | 29.4 | 1/31/2010 |
| High Duration | Growth | -1.0 | 7.6 | 10.1 | 0.5 | 12.1 | 9.7 | 12/31/1988 |
| ROE (5-Yr Avg. Adj. by Debt) | Quality | -1.1 | 3.8 | 7.6 | -0.6 | 9.2 | 16.5 | 4/30/1997 |
| Low PE to GROWTH | GARP | -1.1 | 3.6 | 9.6 | -7.0 | 14.4 | -7.9 | 4/30/1997 |
| ROC | Quality | -1.2 | 5.4 | 15.1 | 6.8 | 14.1 | 12.6 | 4/30/1997 |
| High Variability of EPS | Risk | -1.3 | 3.2 | 6.8 | -8.7 | 10.8 | 0.9 | 12/31/1988 |
| Negative Earnings Surprise | Growth (Negative) | -1.4 | 5.0 | 11.2 | 0.6 | 11.8 | -3.8 | 12/31/1988 |
| Positive Earnings Surprise | Growth | -1.4 | 3.5 | 9.1 | -2.6 | 9.8 | 5.9 | 12/31/1988 |
| Analyst Coverage Neglect | Miscellaneous | -1.6 | 4.8 | 10.3 | -3.1 | 9.4 | -2.7 | 12/31/1988 |
| MLQS Alpha Surprise Model | GARP | -1.6 | 5.1 | 10.8 | 2.1 | 10.2 | 9.6 | 12/31/1988 |
| High EPS Estimate Dispersion | Risk | -1.8 | 1.1 | 8.7 | -12.9 | 12.2 | -27.3 | 12/31/1988 |
| EPS Momentum | Growth | -1.9 | 6.0 | 9.1 | -8.0 | 14.2 | -17.6 | 12/31/1988 |
| Small Size | Miscellaneous | -1.9 | 3.2 | 9.3 | -7.4 | 11.3 | 23.7 | 12/31/1988 |
| Upward Estimate Revisions | Growth | -1.9 | 4.7 | 10.0 | -6.7 | 11.1 | -23.4 | 12/31/1988 |
| Low EPS Torpedo | Growth (Negative) | -2.1 | 2.2 | 4.7 | -0.7 | 8.0 | 2.6 | 12/31/1988 |
| Most Active | Technical | -2.3 | 5.1 | 11.2 | -8.4 | 13.3 | -18.2 | 8/31/2003 |
| Relative Strength ( $5 \mathrm{wk} / 30 \mathrm{wk}$ ) | Technical | -2.5 | 3.8 | 4.9 | -2.4 | 5.4 | 36.6 | 1/31/2010 |
| Earnings Yield | Value | -2.6 | 2.6 | 10.0 | -3.0 | 12.4 | -8.0 | 12/31/1988 |
| Low Price to Free Cash Flow | Value | -2.8 | 5.1 | 12.4 | -0.6 | 13.9 | 10.0 | 7/30/2003 |
| High Free Cash Flow to EV | Value | -3.2 | 3.4 | 13.1 | 1.9 | 14.3 | 32.1 | 7/31/2010 |
| Low Price to Sales | Value | -3.2 | 2.8 | 5.2 | -6.1 | 7.9 | 13.7 | 12/31/1988 |
| High Beta | Risk | -3.3 | 5.8 | 12.8 | -12.7 | 18.7 | 9.2 | 12/31/1988 |
| High Foreign Exposure | Miscellaneous | -3.3 | 1.6 | 6.9 | -9.3 | 12.2 | 26.1 | 12/31/1988 |
| Low Price to Book Value | Value | -3.3 | 8.6 | 12.0 | -9.7 | 18.9 | -39.6 | 12/31/1988 |
| Low Price to Cash Flow | Value | -3.5 | 0.1 | 3.8 | -9.5 | 6.5 | 4.6 | 12/31/1988 |
| Low Price | Risk | -3.7 | 3.3 | 9.6 | -16.6 | 11.3 | 10.0 | 12/31/1988 |
| Price Returns (3-Month) | Technical | -3.7 | 5.0 | 13.5 | 2.3 | 13.2 | 40.9 | 1/31/2010 |
| Forward Earnings Yield | Value | -4.1 | 1.9 | 6.5 | -10.2 | 12.1 | -10.7 | 12/31/1988 |
| Low EV/EBITDA | Value | -4.6 | -1.2 | 5.2 | -3.7 | 6.4 | 6.6 | 9/30/2001 |

Source: BofA Merrill Lynch US Equity and US Quant Strategy
The performance does not reflect transaction costs or tax withholdings or any applicable advisory fees. Had these costs been reflected, the performance would have been lower. Performance is calculated on the basis of price return unless noted. Total return performance calculations assume that dividends paid on securities in a portfolio are deposited in a cash account on the ex-dividend date, and are not reinvested. Please see Performance Calculation methodology on page 59 for a full explanation.
${ }^{\dagger}$ For screens that have less than 5 years history, the performance is since inception

[^4]Cases 12-E-0201 \& 12-G-0202
DUAH
Exhibit
(KXD-20)
Bank of America

Advances and Declines as of 4/30/2012

|  | 1M |  | 3M |  | 6M |  | 12M |  | YTD |  | 5Yr |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Quantitative Strategies | Advances | Declines | Advances | Declines | Advances | Declines | Advances | Declines | Advances | Declines | Advances | Declines |
| Relative Strength ( $30 \mathrm{wk} / 75 \mathrm{wk}$ ) | 35 | 15 | 112 | 38 | 186 | 113 | 302 | 297 | 145 | 55 | 1530 | 1465 |
| Price Returns (12-Month plus 1-Month) | 34 | 16 | 112 | 38 | 193 | 106 | 322 | 277 | 141 | 59 | 754 | 754 |
| Price Returns (9-Month) | 33 | 16 | 110 | 39 | 191 | 107 | 319 | 279 | 138 | 61 | 744 | 744 |
| Price Returns (11-Month since 1 year ago) | 34 | 16 | 110 | 40 | 195 | 104 | 315 | 284 | 141 | 59 | 726 | 726 |
| Price Returns (12-Month) | 33 | 17 | 112 | 38 | 190 | 109 | 319 | 280 | 141 | 59 | 736 | 736 |
| Price Returns (12-Month plus 1-Month Reversal) | 29 | 21 | 95 | 55 | 180 | 120 | 289 | 311 | 127 | 73 | 731 | 731 |
| Dividend Yield (Total Return) | 34 | 16 | 103 | 47 | 192 | 108 | 356 | 243 | 500 | 297 | 1679 | 1310 |
| Stock Repurchase | 30 | 20 | 98 | 51 | 203 | 96 | 320 | 279 | 136 | 63 | 1605 | 1392 |
| Dividend Yield (Price Return) | 34 | 16 | 99 | 51 | 183 | 117 | 333 | 266 | 118 | 82 | 1599 | 1389 |
| High Projected 5-Yr Growth | 29 | 24 | 100 | 53 | 179 | 127 | 290 | 316 | 142 | 64 | 1754 | 1493 |
| Institutional Neglect | 29 | 21 | 97 | 53 | 181 | 119 | 310 | 290 | 124 | 76 | 1548 | 1449 |
| DDM Valuation | 33 | 27 | 135 | 65 | 262 | 132 | 418 | 336 | 176 | 87 | 1944 | 1723 |
| ROA | 26 | 24 | 103 | 47 | 188 | 112 | 315 | 285 | 141 | 59 | 1607 | 1390 |
| High Dividend Growth (Total Return) | 27 | 23 | 111 | 39 | 205 | 95 | 322 | 277 | 458 | 340 | 1615 | 1376 |
| ROE ( $5-\mathrm{Yr}$ Average) | 24 | 26 | 96 | 54 | 182 | 118 | 313 | 286 | 131 | 69 | 1615 | 1383 |
| ROE (1-Yr Avg. Adj. by Debt) | 24 | 26 | 101 | 49 | 193 | 107 | 320 | 280 | 142 | 58 | 1588 | 1408 |
| High Dividend Growth (Price Return) | 27 | 23 | 110 | 40 | 201 | 99 | 317 | 282 | 154 | 46 | 1588 | 1404 |
| Relative Strength (Price/200-Day Moving Avg) | 24 | 25 | 101 | 48 | 181 | 117 | 311 | 287 | 131 | 68 | 741 | 741 |
| ROE (1-Yr Average) | 24 | 25 | 95 | 54 | 181 | 118 | 306 | 292 | 133 | 66 | 1608 | 1389 |
| Relative Strength (10wk/40wk) | 29 | 21 | 101 | 49 | 189 | 111 | 311 | 289 | 131 | 69 | 736 | 736 |
| High Duration | 22 | 28 | 103 | 47 | 187 | 113 | 306 | 294 | 136 | 64 | 1591 | 1406 |
| ROE ( $5-\mathrm{Yr}$ Avg. Adj. by Debt) | 23 | 27 | 96 | 54 | 186 | 114 | 310 | 290 | 133 | 67 | 1575 | 1423 |
| Low PE to GROWTH | 25 | 25 | 91 | 59 | 170 | 130 | 271 | 329 | 134 | 66 | 1559 | 1435 |
| ROC | 24 | 26 | 96 | 54 | 190 | 110 | 310 | 290 | 135 | 65 | 1610 | 1390 |
| High Variability of EPS | 29 | 35 | 115 | 76 | 225 | 163 | 354 | 417 | 165 | 90 | 2028 | 1906 |
| Negative Earnings Surprise | 28 | 38 | 129 | 72 | 257 | 151 | 402 | 356 | 187 | 85 | 1979 | 1845 |
| Positive Earnings Surprise | 31 | 39 | 113 | 80 | 220 | 170 | 361 | 416 | 154 | 102 | 2010 | 1894 |
| Analyst Coverage Neglect | 20 | 22 | 78 | 53 | 171 | 115 | 279 | 333 | 113 | 69 | 1577 | 1489 |
| MLQS Alpha Surprise Model | 25 | 21 | 84 | 48 | 169 | 106 | 271 | 285 | 115 | 68 | 1430 | 1269 |
| High EPS Estimate Dispersion | 23 | 29 | 81 | 76 | 170 | 138 | 268 | 344 | 120 | 86 | 1781 | 1798 |
| EPS Momentum | 20 | 30 | 95 | 55 | 182 | 117 | 279 | 320 | 138 | 62 | 1520 | 1475 |
| Small Size | 22 | 28 | 83 | 67 | 172 | 128 | 266 | 334 | 123 | 77 | 1498 | 1494 |
| Upward Estimate Revisions | 20 | 30 | 89 | 60 | 179 | 120 | 279 | 320 | 125 | 74 | 1524 | 1472 |
| Low EPS Torpedo | 22 | 28 | 87 | 63 | 156 | 144 | 287 | 312 | 117 | 83 | 1513 | 1482 |
| Most Active | 22 | 28 | 96 | 54 | 184 | 115 | 278 | 321 | 135 | 65 | 1503 | 1483 |
| Relative Strength ( $5 \mathrm{wk} / 30 \mathrm{wk}$ ) | 22 | 27 | 92 | 57 | 177 | 121 | 311 | 287 | 124 | 75 | 742 | 742 |
| Earnings Yield | 19 | 31 | 91 | 59 | 179 | 121 | 285 | 315 | 134 | 66 | 1554 | 1440 |
| Low Price to Free Cash Flow | 21 | 29 | 96 | 54 | 184 | 116 | 295 | 305 | 136 | 64 | 1577 | 1413 |
| High Free Cash Flow to EV | 17 | 29 | 82 | 49 | 160 | 106 | 260 | 276 | 119 | 57 | 637 | 637 |
| Low Price to Sales | 15 | 34 | 76 | 73 | 158 | 140 | 275 | 322 | 113 | 86 | 1525 | 1463 |
| High Beta | 15 | 37 | 89 | 63 | 170 | 136 | 258 | 349 | 139 | 66 | 1499 | 1519 |
| High Foreign Exposure | 16 | 34 | 87 | 63 | 158 | 142 | 260 | 340 | 129 | 71 | 1581 | 1412 |
| Low Price to Book Value | 17 | 34 | 101 | 52 | 181 | 123 | 265 | 341 | 143 | 60 | 1476 | 1543 |
| Low Price to Cash Flow | 17 | 33 | 75 | 75 | 152 | 147 | 258 | 340 | 110 | 90 | 1519 | 1471 |
| Low Price | 18 | 32 | 86 | 63 | 175 | 124 | 260 | 338 | 126 | 73 | 1484 | 1504 |
| Price Returns (3-Month) | 16 | 34 | 91 | 58 | 188 | 110 | 322 | 277 | 133 | 66 | 760 | 760 |
| Forward Earnings Yield | 12 | 38 | 77 | 72 | 151 | 148 | 246 | 353 | 119 | 80 | 1489 | 1499 |
| Low EV/EBITDA | 16 | 34 | 75 | 75 | 160 | 140 | 282 | 318 | 113 | 87 | 1557 | 1437 |

${ }^{\dagger}$ For screens that have less than 5 years history, the advance/decline data is since inception.
Source: BofA Merrill Lynch US Equity and US Quant Strategy

## MLQS Financial Confidence \& Thematic Indicators

Financial Confidence


Source: BofA Merrill Lynch US Quantitative Strategy
 is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

Thematic (High 5-Year Projected Growth vs. High EPS Yield)


[^5]The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

## Alpha Surprise Model

## Top 50 S\&P 500 Companies By Alpha Surprise Model

Alpha Surprise Model: a $25 \% 75 \%$ combination of the DDM "Alpha" and the Positive EPS "Surprise" Models.


868788899091929394959697989900010203040506070809101112

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance.


Screen for April

|  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  |  | Surprise | Price |  | In |  |  | Surprise | Price |  |
| Scrn | Company | Ticker | Score | 04/30/2012 | S\&P | Scrn | Company | Ticker | Score | 04/30/2012 | S\&P |
| New | APPLE INC | AAPL | 1.00 | 583.98 | B | New | AMAZON.COM | AMZN | 2.25 | 231.90 | B- |
| New | GOODYEAR TIRE \& | GT | 1.00 | 10.98 | C | 3 | ANADARKO PETROLE | APC | 2.25 | 73.21 | B |
| 5 | NETFLIX, INC. | NFLX | 1.00 | 80.14 | B | 7 | CARMAX, INC. | KMX | 2.25 | 30.87 | B+ |
| New | O'REILLY AUTOMOT | ORLY | 1.00 | 105.51 | B+ | New | MICROSOFT CORP | MSFT | 2.25 | 32.02 | A- |
| New | WATSON PHARMACEU | WPI | 1.00 | 75.36 | B- | 2 | PUBLIC SERVICE E | PEG | 2.25 | 31.15 | B+ |
| New | WESTERN DIGITAL | WDC | 1.00 | 38.81 | B | New | SUPERVALU INC. | SVU | 2.25 | 5.94 | B- |
| 4 | CONSOLIDATED EDI | ED | 1.25 | 59.45 | B+ | New | THE PNC FINANCIA | PNC | 2.25 | 66.32 | B+ |
| 4 | DIAMOND OFFSHORE | DO | 1.25 | 68.55 | B | 2 | APACHE CORPORATI | APA | 2.50 | 95.94 | A- |
| 7 | EXXONMOBIL CORP. | XOM | 1.25 | 86.34 | A+ | 3 | BOEING CO. | BA | 2.50 | 76.80 | B+ |
| 7 | RAYTHEON CO. | RTN | 1.50 | 54.14 | A- | New | CONSOL ENERGY | CNX | 2.50 | 33.24 | B |
| 3 | AUTOZONE INC. | AZO | 1.75 | 396.16 | B+ | 3 | DOLLAR TREE, INC | DLTR | 2.50 | 101.66 | B+ |
| New | BB\&T CORPORATION | BBT | 1.75 | 32.04 | B+ | 7 | FLUOR CORP | FLR | 2.50 | 57.75 | A- |
| 5 | BED BATH \& BEYON | BBBY | 1.75 | 70.39 | B+ | New | FEDERATED INVEST | FII | 2.50 | 22.08 | B+ |
| 2 | BEMIS COMPANY IN | BMS | 1.75 | 32.39 | B+ | New | FIRST HORIZON NA | FHN | 2.50 | 9.18 | B |
| 4 | CHESAPEAKE ENERG | CHK | 1.75 | 18.44 | B- | New | PACCAR INC | PCAR | 2.50 | 42.95 | B+ |
| New | LIFE TECHNOLOGIE | LIFE | 1.75 | 46.36 | B | New | SANDISK CORPORAT | SNDK | 2.50 | 37.00 | B- |
| New | M\&T BANK CORP | MTB | 1.75 | 86.27 | B+ | 2 | THE KROGER CO. | KR | 2.50 | 23.27 | B |
| 3 | WELLS FARGO \& CO | WFC | 1.75 | 33.42 | A- | New | VALERO ENERGY CO | VLO | 2.50 | 24.70 | B |
| 3 | XILINX INC. | XLNX | 1.75 | 36.38 | B | New | CLOROX CO. | CLX | 2.75 | 70.10 | A |
| 7 | ALLERGAN INC. | AGN | 2.00 | 96.00 | B+ | 3 | DANAHER CORP | DHR | 2.75 | 54.22 | A+ |
| 7 | AUTONATION, INC. | AN | 2.00 | 34.58 | B | 3 | DEERE \& CO | DE | 2.75 | 82.36 | A |
| 18 | BOSTON SCIENTIFI | BSX | 2.00 | 6.26 | C | 3 | INTUIT INC. | INTU | 2.75 | 57.97 | B+ |
| New | SYMANTEC CORPORA | SYMC | 2.00 | 16.54 | B | 2 | U.S. BANCORP | USB | 2.75 | 32.17 | B+ |
| 9 | TERADATA CORPORA | TDC | 2.00 | 69.78 | NA | 3 | XCEL ENERGY INC. | XEL | 2.75 | 27.06 | B |
| 4 | THE SOUTHERN COM | SO | 2.00 | 45.94 | A- | New | ZIONS BANCORPORA | ZION | 2.75 | 20.39 | B |

## P/E-to-Growth

## Top 50 S\&P 500 Companies By Low PE to GROWTH

P/E-to-Growth: Trailing twelve months P/E divided by the five-year EPS growth rate estimated by BofAML Fundamental Equity Research. If no BofAML estimate exist, then IBES Mean Long Term Growth Estimate is used.


| Mo. |  |  |  |  | Mo. |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  |  | PEI Price |  | In |  | PEI Price |  |  |
| Scrn. | Company | Ticker | Growth | 04/30/2012 | Scrn. | Company | Ticker | Growth | 04/30/2012 |
| New | WESTERN DIGITAL | WDC | 0.23 | 38.810 | 24 | DIRECTV GROUP IN | DTV | 0.69 | 49.280 |
| 4 | FORD MOTOR CO | F | 0.30 | 11.280 | 7 | U.S. BANCORP | USB | 0.69 | 32.170 |
| 7 | GOODYEAR TIRE \& | GT | 0.30 | 10.980 | 4 | BAKER HUGHES INC | BHI | 0.69 | 44.110 |
| 8 | WYNN RESORTS LTD | WYNN | 0.31 | 133.400 | 13 | PEABODY ENERGY | BTU | 0.70 | 31.110 |
| 13 | COMERICA INCORPO | CMA | 0.37 | 32.020 | New | TEXTRON | TXT | 0.70 | 26.640 |
| 14 | AMERICAN INTERNA | AIG | 0.40 | 34.030 | 16 | DISCOVERY COMMUN | DISCA | 0.72 | 54.430 |
| 35 | METROPCS COMMUNI | PCS | 0.46 | 7.300 | 2 | SANDISK CORPORAT | SNDK | 0.73 | 37.000 |
| 12 | CLIFFS NATURAL R | CLF | 0.46 | 62.260 | 3 | ASSURANT INC. | AIZ | 0.73 | 40.340 |
| 6 | DENBURY RESOURCES INC | DNR | 0.50 | 19.040 | 25 | CORNING INC. | GLW | 0.74 | 14.350 |
| 13 | FIFTH THIRD BANC | FITB | 0.50 | 14.225 | 5 | JOY GLOBAL INC | JOY | 0.74 | 70.770 |
| 7 | SUNTRUST BANKS, | STI | 0.52 | 24.280 | 7 | METLIFE INC. | MET | 0.74 | 36.030 |
| 13 | M\&T BANK CORP | MTB | 0.55 | 86.270 | 5 | BORGWARNER INC. | BWA | 0.74 | 79.040 |
| 2 | HELMERICH \& PAYNE | HP | 0.57 | 51.390 | 8 | FLOWSERVE CORP | FLS | 0.75 | 114.930 |
| 4 | CHESAPEAKE ENERG | CHK | 0.58 | 18.440 | New | E*TRADE FINANCIA | ETFC | 0.75 | 10.630 |
| 10 | COVENTRY HEALTH | CVH | 0.59 | 29.990 | 5 | WELLPOINT INC. | WLP | 0.77 | 67.820 |
| 3 | NABORS INDUSTRIES LTD | NBR | 0.60 | 16.650 | 8 | DISCOVER FINANCI | DFS | 0.77 | 33.900 |
| 9 | JOHNSON CONTROLS | JCI | 0.60 | 31.970 | 7 | WELLS FARGO \& CO | WFC | 0.80 | 33.415 |
| 13 | KEYCORP | KEY | 0.62 | 8.040 | 3 | DEERE \& CO | DE | 0.81 | 82.360 |
| 5 | HALLIBURTON COMP | HAL | 0.63 | 34.220 | 3 | BOEING CO. | BA | 0.82 | 76.800 |
| 7 | BB\&T CORPORATION | BBT | 0.63 | 32.040 | 2 | NEWFIELD EXPLORA | NFX | 0.83 | 35.900 |
| 4 | EQT CORPORATION | EQT | 0.63 | 49.820 | 3 | NORFOLK SOUTHERN | NSC | 0.83 | 72.930 |
| 7 | INTERPUBLIC GROU | IPG | 0.64 | 11.810 | New | AETNA INC | AET | 0.84 | 44.040 |
| 4 | AUTONATION, INC. | AN | 0.66 | 34.580 | New | CATERPILLAR INC | CAT | 0.84 | 102.770 |
| 31 | DIAMOND OFFSHORE | DO | 0.66 | 68.550 | New | AGILENT TECHNOLO | A | 0.84 | 42.180 |
| 9 | VIACOM INC. (CL. | VIAB | 0.67 | 46.390 | 3 | CSX CORPORATION | CSX | 0.85 | 22.290 |

## Dividend Discount Model Alpha

## Top S\&P 500 Companies By DDM ALPHA

Dividend Discount Model Alpha: The implied return from the BofAML Quantitative Strategy three-stage dividend discount model less the required return from a Capital Asset Pricing Model. Presented as a decile rank.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for April

| M 0 . |  |  |  |  | M 0 . |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  |  | DDM Price |  | In |  |  | DDM Price |  |
| Scrn | Company | Ticker | Alpha | 04/30/2012 | Scrn | Company | Ticker | Alpha | 04/30/2012 |
| 10 | ABBOTT LABORATOR | ABT | 1 | 62.060 | 7 | APOLLO GROUP INC | APOL | 2 | 35.220 |
| 2 | APPLE INC | AAPL | 1 | 583.980 | New | C.H. ROBINSON WO | CHRW | 2 | 59.740 |
| 5 | AUTOZONE INC. | AZO | 1 | 396.160 | 28 | CHUBB CORP | CB | 2 | 73.070 |
| 7 | BB\&T CORPORATION | B B T | 1 | 32.040 | 41 | CLOROX CO. | CLX | 2 | 70.100 |
| 10 | BAXTER HEALTHCAR | BAX | 1 | 55.410 | 15 | COMCAST CORP (C | CMCSA | 2 | 30.345 |
| 18 | CELGENE CORP | CELG | 1 | 72.925 | 7 | CONSOLIDATEDEDI | ED | 2 | 59.450 |
| 103 | COLGATE-PALMOLIV | CL | 1 | 98.940 | 10 | CR BARD INC | BCR | 2 | 98.960 |
| 13 | COMERICA INCORPO | CMA | 1 | 32.020 | 27 | DAVITA INC. | DVA | 2 | 88.580 |
| 10 | DIRECTV GROUP IN | DTV | 1 | 49.280 | 27 | DIAMOND OFFSHORE | DO | 2 | 68.550 |
| 5 | DOLLAR TREE, INC | DLTR | 1 | 101.660 | 19 | DISCOVERY COMMUN | DISCA | 2 | 54.430 |
| 5 | FAMILY DOLLAR ST | FDO | 1 | 67.550 | 4 | DUKE ENERGY | DUK | 2 | 21.430 |
| 16 | FIRST HORIZON NA | FHN | 1 | 9.180 | New | ENTERGY CORPORAT | ETR | 2 | 65.560 |
| 40 | GENERAL MILLS IN | GIS | 1 | 38.890 | 4 | EXXONMOBIL CORP. | XOM | 2 | 86.340 |
| 3 | GOODYEAR TIRE \& | G T | 1 | 10.980 | 28 | GILEAD SCIENCES | GILD | 2 | 52.020 |
| 36 | JOHNSON \& JOHNSO | JNJ | 1 | 65.100 | 17 | HEWLETT-PACKARD | HPQ | 2 | 24.760 |
| 4 | KEYCORP | KEY | 1 | 8.040 | 32 | INTL BUSINESS MA | IBM | 2 | 207.080 |
| 13 | M \& T BANK CORP | M TB | 1 | 86.270 | 27 | KELLOGG CO | K | 2 | 50.570 |
| 35 | METROPCS COMMUNI | PCS | 1 | 7.300 | 33 | KIMBERLY-CLARK C | K M B | 2 | 78.470 |
| 10 | NETFLIX, INC. | NFLX | 1 | 80.140 | 36 | LABORATORY CORPO | LH | 2 | 87.890 |
| 5 | O'REILLY AUTOMOT | ORLY | 1 | 105.505 | 7 | LORILLARD, INC. | LO | 2 | 135.290 |
| 7 | SUNTRUST BANKS, | STI | 1 | 24.280 | 4 | NORTHEAST UTILIT | NU | 2 | 36.770 |
| 29 | THE KROGER CO. | KR | 1 | 23.270 | 29 | PG\&E CORPORATION | PCG | 2 | 44.180 |
| 3 | WYNN RESORTS LTD | WYNN | 1 | 133.400 | New | PEOPLES UNITED | PBCT | 2 | 12.325 |
| 46 | WAL*MART STORES | WM T | 1 | 58.910 | New | PEPSICO, INC. | PEP | 2 | 66.000 |
| New | WATSON PHARMACEU | WPI | 1 | 75.360 | 134 | PROCTER \& GAMBLE | PG | 2 | 63.640 |
| New | WESTERN DIGITAL | WDC | 1 | 38.810 | 29 | PROGRESS ENERGY | PGN | 2 | 53.220 |
| 39 | WISCONSIN ENERGY | WEC | 1 | 36.840 | 38 | QUEST DIAGNOSTIC | DGX | 2 | 57.690 |
| 13 | XILINX INC. | XLNX | 1 | 36.380 | New | REYNOLDS AMERICA | RAI | 2 | 40.830 |
| 3 | AGL RESOURCES IN | GAS | 2 | 39.430 | New | ST JUDE MEDICAL | STJ | 2 | 38.720 |
| 10 | ALTERA CORP. | ALTR | 2 | 35.570 | 20 | THE SOUTHERN COM | SO | 2 | 45.940 |
| 7 | ALTRIA GROUP, IN | M O | 2 | 32.210 | 4 | U.S. BANCORP | U SB | 2 | 32.170 |

Earnings Yield
Top 50 S\&P 500 Companies By EARNINGS YIELD
Earnings Yield: Trailing 12-month EPS divided by month-end price.



Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The
unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for April

| Mo. |  |  |  |  | Mo. |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  |  | Earnings Price |  | In |  |  | Earnings Price |  |
| Scrn | Company | Ticker | Yield | 04/30/2012 | Scrn | Company | Ticker | Yield | 04/30/2012 |
| 25 | FORD MOTOR CO | F | 44.41\% | 11.280 | 9 | DELL INC. | DELL | 11.61\% | 16.370 |
| 15 | AMERICAN INTERNA | AIG | 25.27\% | 34.030 | 15 | HEWLETT-PACKARD | HPQ | 11.59\% | 24.760 |
| 13 | CLIFFS NATURAL R | CLF | 17.96\% | 62.260 | 6 | CF INDUSTRIES | CF | 11.49\% | 193.060 |
| 4 | CONOCOPHILLIPS | COP | 16.90\% | 54.605 | 10 | KEYCORP | KEY | 11.44\% | 8.040 |
| 6 | TESORO CORP. | TSO | 16.60\% | 23.250 | 25 | CORNING INC. | GLW | 11.29\% | 14.350 |
| 9 | MARATHON PETROLE | MPC | 16.10\% | 41.610 | New | AFLAC INC | AFL | 11.21\% | 45.040 |
| 3 | ASSURANT INC. | AIZ | 15.12\% | 40.340 | New | WESTERN DIGITAL | WDC | 11.21\% | 38.810 |
| 6 | VALERO ENERGY CO | VLO | 14.98\% | 24.700 | 8 | CITIGROUP INC | C | 11.11\% | 33.045 |
| 7 | METLIFE INC. | MET | 14.96\% | 36.030 | New | FIFTH THIRD BANC | FITB | 10.97\% | 14.225 |
| 22 | CAPITAL ONE FINA | COF | 14.04\% | 55.480 | 5 | WELLPOINT INC. | WLP | 10.87\% | 67.820 |
| 10 | COVENTRY HEALTH | CVH | 14.04\% | 29.990 | 6 | GAMESTOP CORP | GME | 10.68\% | 22.760 |
| 3 | NEWFIELD EXPLORA | NFX | 13.96\% | 35.900 | 30 | CIGNA CORP | Cl | 10.60\% | 46.230 |
| 3 | CHESAPEAKE ENERG | CHK | 13.39\% | 18.440 | 10 | FREEPORT-MCMORAN | FCX | 10.52\% | 38.300 |
| 27 | GANNETT CO | GCI | 13.24\% | 13.820 | 3 | THE WESTERN UNIO | WU | 10.50\% | 18.380 |
| 19 | LEXMARK INTERNAT | LXK | 13.12\% | 30.100 | 13 | J.P. MORGAN CHAS | JPM | 10.49\% | 42.980 |
| 12 | DISCOVER FINANCI | DFS | 12.98\% | 33.900 | New | TORCHMARK CORP | TMK | 10.41\% | 48.710 |
| 2 | APOLLO GROUP INC | APOL | 12.98\% | 35.220 | 4 | RAYTHEON CO. | RTN | 10.29\% | 54.140 |
| 7 | CHEVRON CORP. | CVX | 12.88\% | 106.560 | 10 | FOREST LABS | FRX | 10.28\% | 34.830 |
| 10 | L-3 COMMUNICATIO | LLL | 12.69\% | 73.540 | New | GENERAL DYNAMICS | GD | 10.25\% | 67.500 |
| 7 | NORTHROP GRUMMAN | NOC | 12.42\% | 63.280 | New | HUMANA INC | HUM | 10.16\% | 80.680 |
| 5 | APACHE CORPORATI | APA | 12.25\% | 95.940 | 2 | PITNEY BOWES INC | PBI | 10.16\% | 17.130 |
| 6 | PRUDENTIAL FINAN | PRU | 11.94\% | 60.540 | 13 | CONSTELLATION BR | STZ | 10.09\% | 21.600 |
| 37 | AETNA INC | AET | 11.92\% | 44.040 | New | METROPCS COMMUNI | PCS | 10.00\% | 7.300 |
| 4 | PEABODY ENERGY | BTU | 11.89\% | 31.110 | 2 | HALLIBURTON COMP | HAL | 9.94\% | 34.220 |
| 4 | XEROX CORP | XRX | 11.83\% | 7.780 | 4 | TERADYNE INC. | TER | 9.88\% | 17.210 |

## Forward Earnings Yield

Top 50 S\&P 500 Companies By FORWARD EARNINGS YIELD
Earnings Yield: Rolling 12-month Forward EPS divided by month-end price.
 unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for April


## Price/Book Value

## Top 50 S\&P 500 Companies By LOW PRICE/BOOK

Price/Book Value: Month-end price divided by latest reported book value per share.
 unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for April

| Mo |  |  |  |  | Mo. |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  |  | Pricel | Price | In |  |  | Pricel | Price |
| Scrn | Company | Ticker | Book | 04/30/2012 | Scrn | Company | Ticker | Book | 04/30/2012 |
| 77 | GENWORTH FINANCI | GNW | 0.18 | 6.010 | 41 | ZIONS BANCORPORA | ZION | 0.81 | 20.390 |
| 42 | BANK OF AMERICA CORP | BAC | 0.41 | 8.110 | 23 | CME GROUP INC. | CME | 0.82 | 265.820 |
| 44 | HARTFORD FINANCI | HIG | 0.41 | 20.550 | 2 | MICRON TECHNOLOG | MU | 0.82 | 6.590 |
| 5 | FIRST SOLAR, INC | FSLR | 0.44 | 18.400 | 2 | NABORS INDUSTRIES LTD | NBR | 0.82 | 16.650 |
| 9 | ALPHA NATURAL RE | ANR | 0.48 | 16.130 | 27 | PEOPLE'S UNITED | PBCT | 0.82 | 12.325 |
| 43 | LINCOLN NATIONAL | LNC | 0.51 | 24.770 | 13 | BANK OF NEW YORK | BK | 0.83 | 23.650 |
| 28 | NRG ENERGY, INC. | NRG | 0.52 | 17.000 | 5 | NASDAQ OMX GROUP INC | NDAQ | 0.83 | 24.570 |
| 12 | CITIGROUP INC | C | 0.53 | 33.045 | 38 | VALERO ENERGY CO | VLO | 0.84 | 24.700 |
| 28 | MORGAN STANLEY | MS | 0.56 | 17.280 | 24 | PRINCIPAL FINANC | PFG | 0.86 | 27.670 |
| 23 | E*TRADE FINANCIA | ETFC | 0.60 | 10.630 | 9 | XEROX CORP | XRX | 0.86 | 7.780 |
| 4 | WPX ENERGY INC | WPX | 0.61 | 17.570 | 66 | CAPITAL ONE FINA | COF | 0.87 | 55.480 |
| 16 | AMERICAN INTERNA | AIG | 0.62 | 34.030 | 9 | GOLDMAN SACHS GR | GS | 0.87 | 115.150 |
| 48 | LEGG MASON INC | LM | 0.65 | 26.070 | 36 | LOEWS CORP | L | 0.87 | 41.130 |
| 31 | METLIFE INC. | MET | 0.65 | 36.030 | New | METROPCS COMMUNI | PCS | 0.89 | 7.300 |
| 40 | SUNTRUST BANKS, | STI | 0.65 | 24.280 | New | TESORO CORP. | TSO | 0.89 | 23.250 |
| 66 | REGIONS FINANCIA | RF | 0.67 | 6.740 | 30 | THE ALLSTATE COR | ALL | 0.89 | 33.330 |
| 10 | SPRINT | S | 0.70 | 2.480 | New | CHESAPEAKE ENERG | CHK | 0.90 | 18.440 |
| 37 | ASSURANT INC. | AIZ | 0.72 | 40.340 | 14 | COMERICA INCORPO | CMA | 0.90 | 32.020 |
| 22 | XL GROUP PLC | XL | 0.72 | 21.510 | 2 | FRONTIER COMMUNI | FTR | 0.90 | 4.025 |
| 10 | ALCOA INC. | AA | 0.74 | 9.730 | 25 | J.P. MORGAN CHAS | JPM | 0.90 | 42.980 |
| 24 | PRUDENTIAL FINAN | PRU | 0.76 | 60.540 | 3 | SOUTHWEST AIRLIN | LUV | 0.90 | 8.280 |
| 41 | KEYCORP | KEY | 0.78 | 8.040 | New | COVENTRY HEALTH | CVH | 0.94 | 29.990 |
| 31 | BOSTON SCIENTIFI | BSX | 0.79 | 6.260 | New | HESS CORP. | HES | 0.96 | 52.140 |
| 16 | HUDSON CITY BANC | HCBK | 0.81 | 7.060 | New | WELLPOINT INC. | WLP | 0.96 | 67.820 |
| 36 | UNUM GROUP | UNM | 0.81 | 23.740 | New | FIRST HORIZON NA | FHN | 0.97 | 9.180 |

## Price/Cash Flow

## Top 50 S\&P 500 Companies By LOW PRICE/CASH FLOW

Price/Cash Flow: Month-end price divided by latest reported cash flow. Cash flow is defined as earnings post extraordinary items plus depreciation.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for April

Mo.

| In |  | Price 1 |  | Price |
| :---: | :---: | :---: | :---: | :---: |
| Scrn. | Company | Ticker | Cash Flo | $04 / 30 / 2012$ |
| 38 | FORD MOTOR CO | F | 1.75 | 11.280 |
| 165 | RYDER SYSTEM INC | R | 2.30 | 48.720 |
| 16 | FRONTIER COMMUNI | FTR | 2.58 | 4.025 |
| 9 | GOODYEAR TIRE \& | GT | 2.95 | 10.980 |
| 8 | METROPCS COMMUNI | PCS | 3.17 | 7.300 |
| 11 | CABLEVISION SYST | CVC | 3.18 | 14.820 |
| 7 | NEWFIELD EXPLORA | NFX | 3.21 | 35.900 |
| 5 | CHESAPEAKE ENERG | CHK | 3.36 | 18.440 |
| 3 | NETFLIX, INC. | NFLX | 3.42 | 80.140 |
| 12 | TESORO CORP. | TSO | 3.43 | 23.250 |
| 4 | CONOCOPHILLIPS | COP | 3.56 | 54.605 |
| 9 | NRG ENERGY, INC. | NRG | 3.78 | 17.000 |
| 43 | MARATHON OIL COR | MRO | 3.79 | 29.340 |
| 15 | SAFEWAY INC | SWY | 3.83 | 20.330 |
| 6 | CENTERPOINT ENER | CNP | 3.84 | 20.210 |
| 25 | MICRON TECHNOLOG | MU | 3.85 | 6.590 |
| 10 | NABORS INDUSTRIES LTD | NBR | 3.86 | 16.650 |
| 6 | VALERO ENERGY CO | VLO | 3.87 | 24.700 |
| 3 | PITNEY BOWES INC | PBI | 3.88 | 17.130 |
| 5 | QEP RESOURCES INC | QEP | 4.07 | 30.810 |
| 22 | DEVON ENERGY | DVN | 4.13 | 69.850 |
| 25 | HESS CORP. | HES | 4.19 | 52.140 |
| 9 | APACHE CORPORATI | APA | 4.21 | 95.940 |
| 9 | XEROX CORP | XRX | 4.21 | 7.780 |
| 2 | MURPHY OIL CORP | MUR | 4.27 | 54.970 |

Mo.

| In | Price I Price |
| :--- | ---: | ---: |
| Scrn. Company | Ticker Cash Flo $04 / 30 / 2012$ |

Ticker Cash Flo 04/30/2012

| LXK | 4.27 | 30.100 |
| :--- | ---: | ---: |
| CLF | 4.35 | 62.260 |
| CTL | 4.36 | 38.560 |
| MPC | 4.52 | 41.610 |
| HPQ | 4.64 | 24.760 |
| WPX | 4.70 | 17.570 |
| RDC | 4.71 | 34.530 |
| AEP | 5.14 | 38.840 |
| ETR | 5.15 | 65.560 |
| THC | 5.17 | 5.190 |
| S | 5.20 | 2.480 |
| GCI | 5.22 | 13.820 |
| CVX | 5.25 | 106.560 |
| TWC | 5.43 | 80.450 |
| AA | 5.51 | 9.730 |
| BTU | 5.52 | 31.110 |
| WDC | 5.52 | 38.810 |
| WHR | 5.60 | 64.020 |
| IP | 5.67 | 33.310 |
| WIN | 5.67 | 11.240 |
| DTE | 5.72 | 56.380 |
| PCG | 5.80 | 44.180 |
| CVH | 5.80 | 29.990 |
| CNX | 5.87 | 33.240 |
| RRD | 5.91 | 12510 |

## Price/Free Cash Flow

## Top 50 S\&P 500 Companies By LOW PRICE/FREE CASH FLOW

Price/Free Cash Flow: Month-end price divided by latest reported free cash flow. Free Cash Flow is defined as the earnings after extraordinary items plus depreciation minus capital expenditures.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end May 1986 to month end July 2003. The unshaded portion represents actual performance since August 2003. Back tested performance is hypothetical in nature and reflects application of the screen prior portion represents actual performance since August 2003. Back tested perfo

Screen for April


## Price/Sales

Top 50 S\&P 500 Companies By LOW PRICE/SALES
Price/Sales: Month-end market value divided by reported sales.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to it introduction and is not intended to be
 indicative of future performance
Screen for April

| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  |  | Mkt Val I | Price |
| Scrn. Company | Ticker | Sales | 04/30/2012 |  |
|  |  |  |  |  |
| 130 | SUPERVALU INC. | SVU | 0.03 | 5.940 |
| 77 | SEARS HOLDINGS CORP | SHLD | 0.05 | 53.780 |
| 111 | AUTONATION, INC. | AN | 0.10 | 34.580 |
| 56 | TESORO CORP. | TSO | 0.11 | 23.250 |
| 97 | VALERO ENERGY CO | VLO | 0.11 | 24.700 |
| 149 | GOODYEAR TIRE \& | GT | 0.12 | 10.980 |
| 130 | SUNOCO INC. | SUN | 0.12 | 49.290 |
| 112 | AMERISOURCEBERGE | ABC | 0.12 | 37.210 |
| 37 | BEST BUY CO., IN | BBY | 0.12 | 22.070 |
| 110 | SAFEWAY INC | SWY | 0.12 | 20.330 |
| 94 | CARDINAL HEALTH | CAH | 0.14 | 42.270 |
| 41 | THE KROGER CO. | KR | 0.15 | 23.270 |
| 81 | TYSON FOODS, INC | TSN | 0.16 | 18.250 |
| 37 | DEAN FOODS COMPA | DF | 0.17 | 12.280 |
| 157 | MCKESSON CORPORA | MCK | 0.18 | 91.410 |
| 9 | MARATHON PETROLE | MPC | 0.20 | 41.610 |
| 16 | US STEEL | X | 0.20 | 28.330 |
| 31 | DONNELLEY (R R) \& SONS CO | RRD | 0.21 | 12.510 |
| 11 | SPRINT | S | 0.22 | 2.480 |
| 37 | WAL*MART STORES | WMT | 0.23 | 58.910 |
| 37 | ARCHER DANIELS M | ADM | 0.23 | 30.830 |
| 80 | TENET HEALTHCARE | THC | 0.24 | 5.190 |
| 65 | JABIL CIRCUIT IN | JBL | 0.25 | 23.450 |
| 102 | WHIRLPOOL CORP | WHR | 0.26 | 64.020 |
| 18 | COMPUTER SCIENCE | CSC | 0.27 | 28.060 |


| Mo. |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  | Mkt Val I | Price <br> Sales |
| Scrn. | 0430/2012 |  |  |

## EV / EBITDA

Top 50 S\&P Industrials Companies By LOW EV/EBITDA
EV/EBITDA: Enterprise Value (Equity Market Capitalization + Long Term Debt + Short Term Debt + Preferred Stock + Minority Interest - Cash \& Cash Equivalents) divided by the latest 4-quarter EBITDA


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end May 1986 to month end September 2001. The unshaded portion represents actual performance since October 2001. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

| Mo. |  |  |  |  | Mo. |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  |  | EV I | Price | In |  |  | EV I | Price |
| Scrn | Company | Ticker | EBITDA | 04/30/2012 | Scrn | Company | Ticker | EBITDA | 04/30/2012 |
| 38 | HUMANA INC | HUM | 1.30 | 80.680 | 16 | FREEPORT-MCMORAN | FCX | 4.05 | 38.300 |
| 2 | FIRST SOLAR, INC | FSLR | 1.84 | 18.400 | 4 | SUPERVALU INC. | SVU | 4.05 | 5.940 |
| 16 | WELLPOINT INC. | WLP | 2.47 | 67.820 | 7 | METROPCS COMMUNI | PCS | 4.09 | 7.300 |
| 30 | LEXMARK INTERNAT | LXK | 2.55 | 30.100 | 6 | CF INDUSTRIES | CF | 4.13 | 193.060 |
| 16 | BEST BUY CO., IN | BBY | 2.59 | 22.070 | 8 | THE MOSAIC COMPA | MOS | 4.14 | 52.820 |
| 25 | APOLLO GROUP INC | APOL | 2.74 | 35.220 | New | SPRINT | S | 4.16 | 2.480 |
| 12 | TESORO CORP. | TSO | 2.84 | 23.250 | 3 | ALPHA NATURAL RE | ANR | 4.18 | 16.130 |
| 31 | GAMESTOP CORP | GME | 2.85 | 22.760 | 37 | AETNA INC | AET | 4.25 | 44.040 |
| 2 | MURPHY OIL CORP | MUR | 2.93 | 54.970 | 8 | SAIC INC | SAI | 4.26 | 12.160 |
| 3 | NETFLIX, INC. | NFLX | 2.95 | 80.140 | 4 | DONNELLEY (R R ) \& SONS CO | RRD | 4.27 | 12.510 |
| 9 | MARATHON PETROLE | MPC | 3.06 | 41.610 | 27 | TYSON FOODS, INC | TSN | 4.28 | 18.250 |
| 104 | CONOCOPHILLIPS | COP | 3.15 | 54.605 | 3 | CORNING INC. | GLW | 4.39 | 14.350 |
| 34 | COMPUTER SCIENCE | CSC | 3.25 | 28.060 | 2 | QEP RESOURCES INC | QEP | 4.42 | 30.810 |
| 9 | VIACOM INC. (CL. | VIAB | 3.29 | 46.390 | 8 | DEVON ENERGY | DVN | 4.51 | 69.850 |
| 28 | MOLEX INCORPORAT | MOLX | 3.38 | 27.590 | 23 | GANNETT CO | GCI | 4.52 | 13.820 |
| 9 | APACHE CORPORATI | APA | 3.49 | 95.940 | 4 | MICRON TECHNOLOG | MU | 4.53 | 6.590 |
| 45 | MARATHON OIL COR | MRO | 3.57 | 29.340 | 5 | HEWLETT-PACKARD | HPQ | 4.58 | 24.760 |
| 27 | TIME WARNER INC. | TWX | 3.63 | 37.475 | 3 | COMCAST CORP (C | CMCSA | 4.66 | 30.345 |
| 4 | NEWFIELD EXPLORA | NFX | 3.73 | 35.900 | 14 | SCRIPPS NETWORKS | SNI | 4.67 | 50.220 |
| 12 | VALERO ENERGY CO | VLO | 3.78 | 24.700 | 30 | HESS CORP. | HES | 4.72 | 52.140 |
| New | COVENTRY HEALTH | CVH | 3.81 | 29.990 | New | SANDISK CORPORAT | SNDK | 4.75 | 37.000 |
| 9 | DEVRY INC | DV | 3.90 | 32.150 | New | BLOCK H\&R INC | HRB | 4.88 | 14.700 |
| 9 | GOODYEAR TIRE \& | GT | 4.00 | 10.980 | New | FRONTIER COMMUNI | FTR | 4.89 | 4.025 |
| 24 | DELL INC. | DELL | 4.04 | 16.370 | New | CIGNA CORP | Cl | 4.89 | 46.230 |
| 24 | WASHINGTON POST -CL B | WPO | 4.04 | 378.170 | New | HELMERICH \& PAYNE | HP | 4.90 | 51.390 |

## Free Cash Flow / EV

Top Decile S\&P 500 Companies By HIGH Free Cash Flow / EV
Free Cash Flow / EV: Free Cash Flow divided by Enterprise Value (Equity Market Capitalization + Long Term Debt + Short Term Debt + Preferred Stock + Minority Interest - Cash \& Cash Equivalents). Free Cash Flow is defined as the earnings after extraordinary items plus depreciation minus capital expenditures.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end July 2010. The unshaded
portion represents actual performance since November 2010. Back tested performance is hypothetical in nature and reflects application of the screen
portion represents actual performance since November 2010. Back tested perform
Screen for April

| Mo. In Scrn. | Company | Ticker | FCF/EV | $\begin{array}{r} \text { Price } \\ 04 / 30 / 2012 \end{array}$ | Scrn. | Company | Ticker | FCFIEV | $\begin{array}{r} \text { Price } \\ 04 / 30 / 2012 \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 37 | HUMANA INC | HUM | 0.39 | 80.680 | 21 | Teradyne Inc. | TER | 0.12 | 17.210 |
| 7 | Netflix, Inc. | NFLX | 0.28 | 80.140 | 4 | XEROX CORP | XRX | 0.12 | 7.780 |
| 4 | Apollo Group Inc | APOL | 0.20 | 35.220 | 7 | BMC SOFTWARE INC | BMC | 0.11 | 41.260 |
| 19 | Lexmark Internat | LXK | 0.20 | 30.100 | 3 | GANNETT CO | GCl | 0.11 | 13.820 |
| 33 | WellPoint Inc. | WLP | 0.19 | 67.820 | 13 | KLA-Tencor Corp. | KLAC | 0.11 | 52.140 |
| 3 | Principal Financ | PFG | 0.19 | 27.670 | 21 | MICROSOFT CORP | MSFT | 0.11 | 32.020 |
| 3 | Ford Motor Co | F | 0.18 | 11.280 | 12 | CA INC | CA | 0.11 | 26.420 |
| 15 | Discovery Commun | DISCA | 0.18 | 54.430 | 5 | Cisco Systems | CSCO | 0.11 | 20.160 |
| 10 | Coventry Health | CVH | 0.17 | 29.990 | 10 | Raytheon Co. | RTN | 0.10 | 54.140 |
| 24 | Dell Inc. | DELL | 0.16 | 16.370 | 12 | Applied Material | AMAT | 0.10 | 11.990 |
| 5 | GAMESTOP CORP | GME | 0.15 | 22.760 | 3 | Eli Lilly \& Co. | LLY | 0.10 | 41.390 |
| New | Symantec Corpora | SYMC | 0.14 | 16.540 | 4 | General Dynamics | GD | 0.10 | 67.500 |
| 9 | Molex Incorporat | MOLX | 0.14 | 27.590 | 3 | The Western Unio | WU | 0.10 | 18.380 |
| 6 | CF Industries | CF | 0.14 | 193.060 | New | HARMAN INTERNATIONAL INDS | HAR | 0.10 | 49.580 |
| 26 | Western Digital | WDC | 0.13 | 38.810 | New | Staples, Inc. | SPLS | 0.09 | 15.400 |
| 2 | NVIDIA Corporati | NVDA | 0.13 | 13.000 | New | SanDisk Corporat | SNDK | 0.09 | 37.000 |
| 6 | Northrop Grumman | NOC | 0.12 | 63.280 | 3 | Interpublic Grou | IPG | 0.09 | 11.810 |
| 3 | AETNA INC | AET | 0.12 | 44.040 | New | Oracle Corp | ORCL | 0.09 | 29.400 |
| 6 | Tesoro Corp. | TSO | 0.12 | 23.250 | New | UnitedHealth Gro | UNH | 0.09 | 56.150 |
| 10 | LSI Corporation | LSI | 0.12 | 8.040 | New | Hewlett-Packard | HPQ | 0.09 | 24.760 |

[^6]
## Dividend Yield

## Top 50 S\&P 500 Companies By DIVIDEND YIELD

## Dividend Yield: Indicated dividend divided by month-end price.



[^7]

Screen for April

| Mo. |  |  |  | Price |
| :--- | :--- | :--- | :--- | ---: |
| In |  |  |  |  |
| Scrn | Company | Ticker | Yield | $04 / 30 / 2012$ |
|  |  |  |  |  |
| 46 | FRONTIER COMMUNI | FTR | $9.94 \%$ | 4.025 |
| 70 | WINDSTREAM COMMU | WIN | $8.90 \%$ | 11.240 |
| 39 | PITNEY BOWES INC | PBI | $8.76 \%$ | 17.130 |
| 43 | DONNELLEY (R R) \& SONS CO | RRD | $8.31 \%$ | 12.510 |
| 46 | CENTURYLINK INC | CTL | $7.52 \%$ | 38.560 |
| 10 | SUPERVALU INC. | SVU | $5.89 \%$ | 5.940 |
| 3 | GANNETT CO | GCI | $5.79 \%$ | 13.820 |
| 38 | PEPCO HOLDINGS INC | POM | $5.71 \%$ | 18.920 |
| 93 | REYNOLDS AMERICA | RAI | $5.49 \%$ | 40.830 |
| 5 | BLOCK H \& INC | HRB | $5.44 \%$ | 14.700 |
| 29 | EXELON CORPORATI | EXC | $5.38 \%$ | 39.010 |
| 38 | AT\&T INC. | T | $5.35 \%$ | 32.910 |
| 33 | PPL CORPORATION | PPL | $5.27 \%$ | 27.350 |
| 40 | HEALTH CARE REIT | HCN | $5.22 \%$ | 56.695 |
| 24 | PEOPLE'S UNITED | PBCT | $5.19 \%$ | 12.325 |
| 42 | LEGGETT \& PLATT INC | LEG | $5.14 \%$ | 21.770 |
| 50 | ALTRIA GROUP, IN | MO | $5.09 \%$ | 32.210 |
| 20 | ENTERGY CORPORAT | ETR | $5.06 \%$ | 65.560 |
| 39 | INTEGRYS ENERGY GROUP INC | TEG | $4.98 \%$ | 54.640 |
| 37 | VERIZON COMMUNIC | VZ | $4.95 \%$ | 40.380 |
| 39 | TECO ENERGY INC | TE | $4.88 \%$ | 18.020 |
| 38 | AMEREN CORP | AEE | $4.88 \%$ | 32.790 |
| 38 | AMERICAN ELECTRI | AEP | $4.84 \%$ | 38.840 |
| New | CONOCOPHILLIPS | COP | $4.83 \%$ | 54.605 |
| 43 | HCP, INC. | HCP | $4.83 \%$ | 41.450 |


| Mo. |  |  |  |  |
| :--- | :--- | :--- | :--- | ---: |
| In |  |  |  | Price |
| Scrn | Company | Ticker | Yield | $04 / 30 / 2012$ |
|  |  |  |  |  |
| 37 | ELI LILLY \& CO. | LLY | $4.74 \%$ | 41.390 |
| 36 | FIRSTENERGY | DE | $4.70 \%$ | 46.820 |
| 38 | DUKE ENERGY | $4.67 \%$ | 21.430 |  |
| New | NYSE EURONEXT | NYX | $4.66 \%$ | 25.750 |
| 38 | PROGRESS ENERGY | PGN | $4.66 \%$ | 53.220 |
| 37 | LORILLARD, INC. | LO | $4.58 \%$ | 135.290 |
| 5 | AGL RESOURCES IN | GAS | $4.57 \%$ | 39.430 |
| 6 | PUBLIC SERVICE E | PEG | $4.56 \%$ | 31.150 |
| 9 | HUDSON CITY BANC | HCBK | $4.53 \%$ | 7.060 |
| 40 | CINCINNATI FINANCIAL CORP | CINF | $4.52 \%$ | 35.650 |
| 8 | LOCKHEED MARTIN | LMT | $4.42 \%$ | 90.540 |
| 13 | FEDERATED INVEST | FII | $4.35 \%$ | 22.080 |
| 39 | PINNACLE WEST CA | PNW | $4.34 \%$ | 48.350 |
| 37 | SCANA CORPORATIO | SCG | $4.29 \%$ | 46.120 |
| 19 | MERCK \& CO. | MRK | $4.28 \%$ | 39.240 |
| 37 | THE SOUTHERN COM | SO | $4.27 \%$ | 45.940 |
| 8 | AVON PRODUCTS | AVP | $4.26 \%$ | 21.600 |
| 3 | VENTAS INC. | VTR | $4.22 \%$ | 58.790 |
| 4 | CMS ENERGY CORPO | CMS | $4.18 \%$ | 22.990 |
| 39 | DTE ENERGY COMPA | DTE | $4.17 \%$ | 56.380 |
| 2 | WASTE MANAGEMENT | WM | $4.15 \%$ | 34.200 |
| 2 | PAYCHEX | PAYX | $4.13 \%$ | 30.980 |
| 7 | PG\&E CORPORATION | PCG | $4.12 \%$ | 44.180 |
| New | BRISTOL-MYERS SQ | BMY | $4.08 \%$ | 33.370 |
| 3 | CONSOLIDATED EDI | ED | $4.07 \%$ | 59.450 |

## Dividend Growth

## Top 50 S\&P 500 Companies By Dividend Growth

Dividend Growth: The growth between trailing 4-quarter total common dividends and year-ago trailing 4-quarter total common dividends.



Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end Mary 1986 to month end December 2004. The unshaded portion represents actual performance since January 2005. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for April

| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  |  | Dividend | Price |
| Scrn | Company |  |  |  |
|  |  | Growth | 04/30/2012 |  |
| 10 | AETNA INC | $1353.8 \%$ | 44.040 |  |
| New | HARMAN INTERNATIONAL INDS | HAR | $903.4 \%$ | 49.580 |
| 13 | LINCOLN NATIONAL | LNC | $385.3 \%$ | 24.770 |
| 10 | J.P. MORGAN CHAS | JPM | $384.3 \%$ | 42.980 |
| 7 | SUNTRUST BANKS, | STI | $322.0 \%$ | 24.280 |
| New | FLIR SYSTEMS INC | FLIR | $308.5 \%$ | 22.460 |
| New | ST JUDE MEDICAL | STJ | $302.8 \%$ | 38.720 |
| New | FIRST HORIZON NA | FHN | $294.0 \%$ | 9.180 |
| New | WELLPOINT INC. | WLP | $288.5 \%$ | 67.820 |
| 3 | HOST HOTELS \& RE | HST | $279.4 \%$ | 16.640 |
| New | INTERPUBLIC GROU | IPG | $274.9 \%$ | 11.810 |
| 13 | STATE STREET COR | STT | $263.1 \%$ | 46.220 |
| 7 | HUNTINGTON BANCS | HBAN | $255.5 \%$ | 6.690 |
| 10 | THE PNC FINANCIA | PNC | $250.7 \%$ | 66.320 |
| 13 | FIFTH THIRD BANC | FITB | $249.3 \%$ | 14.225 |
| 8 | DISCOVER FINANCI | DFS | $243.7 \%$ | 33.900 |
| 3 | FRANKLIN RESOURC | BEN | $220.0 \%$ | 125.510 |
| 10 | KEYCORP | KEY | $218.4 \%$ | 8.040 |
| 3 | ESTEE LAUDER | EL | $175.1 \%$ | 65.350 |
| 6 | CF INDUSTRIES | CF | $155.7 \%$ | 193.060 |
| 4 | GANNETT CO | GCI | $148.2 \%$ | 13.820 |
| New | AMPHENOL CORPORA | APH | $135.2 \%$ | 58.140 |
| New | CABOT OIL \& GAS | COG | $134.4 \%$ | 35.140 |
| 3 | ROSS STORES INC | ROST | $129.5 \%$ | 61.500 |
| 10 | NEWMONT MINING C | NEM | $119.0 \%$ | 47.650 |
|  |  |  |  |  |


| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  |  | Dividend | Price |
| Scrn | Company | Ticker | Growth | $04 / 30 / 2012$ |
|  |  |  |  |  |
| 13 | WELLS FARGO \& CO | $115.3 \%$ | 33.415 |  |
| 10 | U.S. BANCORP | USB | $106.0 \%$ | 32.170 |
| 9 | HARTFORD FINANCI | HIG | $100.2 \%$ | 20.550 |
| New | CME GROUP INC. | CME | $93.5 \%$ | 265.820 |
| 9 | POLO RALPH LAURE | RL | $92.8 \%$ | 172.270 |
| 13 | INTERNATIONAL PA | IP | $86.6 \%$ | 33.310 |
| 9 | VIACOM INC. (CL. | VIAB | $86.5 \%$ | 46.390 |
| 16 | PACCAR INC | PCAR | $85.1 \%$ | 42.950 |
| 23 | CLIFFS NATURAL R | CLF | $84.7 \%$ | 62.260 |
| 3 | WILLIAMS COS INC | WMB | $83.6 \%$ | 34.030 |
| 13 | IRON MOUNTAIN INC | IRM | $83.1 \%$ | 30.370 |
| 15 | CARNIVAL CORPORA | CCL | $80.0 \%$ | 32.495 |
| 3 | VENTAS INC. | VTR | $78.3 \%$ | 58.790 |
| 6 | CENTURYLINK INC | CTL | $77.3 \%$ | 38.560 |
| 3 | INGERSOLL-RAND P | IR | $76.3 \%$ | 42.520 |
| 6 | MACY'S | M | $74.5 \%$ | 41.020 |
| 6 | CBS CORP CL-B | CBS | $70.2 \%$ | 33.380 |
| 16 | STARWOOD HOTELS | HOT | $69.2 \%$ | 59.200 |
| 3 | DOW CHEMICAL | DOW | $69.1 \%$ | 33.880 |
| 13 | LEGG MASON INC | LM | $64.2 \%$ | 26.070 |
| 16 | EQUIFAX INC | EFX | $62.0 \%$ | 45.820 |
| New | FIDELITY NATIONA | FIS | $61.0 \%$ | 33.670 |
| 2 | NEWELL RUBBERMAI | NWL | $61.0 \%$ | 18.200 |
| 9 | COMPUTER SCIENCE | CSC | $60.4 \%$ | 28.060 |
| 3 | TJX COMPANIES, I | TJX | $51.6 \%$ | 41.710 |
|  |  |  |  |  |

## Share Repurchase

## Top 50 S\&P 500 Companies By Large Share Repurchase

Share Repurchase: The year-to-year change in shares outstanding.




Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 2004. The unshaded portion represents actual performance since January 2005. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

## Screen for April

| Mo. |  |  |  |  | Mo. |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  | Ticker | Share <br> Repurchase | $\begin{array}{r} \text { Price } \\ 04 / 30 / 2012 \end{array}$ | In |  |  | Share Price |  |
| Scrn | Company |  |  |  | Scrn | Company | Ticker | Repurchase | 04/30/2012 |
| 10 | SAFEWAY INC | SWY | -30.8\% | 20.330 | 24 | ASSURANT INC. | AIZ | -9.6\% | 40.340 |
| 9 | NOVELLUS | NVLS | -22.0\% | 46.800 | 6 | URBAN OUTFITTERS | URBN | -9.4\% | 28.960 |
| 4 | AUTONATION, INC. | AN | -16.4\% | 34.580 | 3 | INTERPUBLIC GROU | IPG | -9.3\% | 11.810 |
| 4 | AMGEN | AMGN | -16.3\% | 71.110 | 7 | O'REILLY AUTOMOT | ORLY | -9.2\% | 105.505 |
| 3 | TENET HEALTHCARE | THC | -15.2\% | 5.190 | 10 | LORILLARD, INC. | LO | -9.0\% | 135.290 |
| 11 | APOLLO GROUP INC | APOL | -14.8\% | 35.220 | 2 | YAHOO! | YHOO | -8.8\% | 15.540 |
| 23 | GAP INC. | GPS | -14.8\% | 28.500 | 7 | AMERIPRISE FINANCIAL INC | AMP | -8.6\% | 54.210 |
| 8 | BIG LOTS INC | BIG | -14.3\% | 36.640 | 2 | AUTOZONE INC. | AZO | -8.6\% | 396.160 |
| 9 | WYNDHAM WORLDWIDE CORP | WYN | -14.2\% | 50.340 | New | EXPRESS SCRIPTS | ESRX | -8.5\% | 55.790 |
| 3 | IRON MOUNTAIN INC | IRM | -14.0\% | 30.370 | 3 | AETNA INC | AET | -8.5\% | 44.040 |
| 9 | DONNELLEY (R R) \& SONS CO | RRD | -14.0\% | 12.510 | 5 | MARRIOTT INTERNA | MAR | -8.5\% | 39.090 |
| New | MOTOROLA SOLUTIONS INC | MSI | -14.0\% | 51.030 | 3 | CF INDUSTRIES | CF | -8.4\% | 193.060 |
| 7 | NORTHROP GRUMMAN | NOC | -13.8\% | 63.280 | 2 | PATTERSON COS IN | PDCO | -8.3\% | 34.090 |
| 11 | KOHL'S | KSS | -12.7\% | 50.130 | 3 | THE MCGRAW-HILL | MHP | -8.2\% | 49.170 |
| 12 | TORCHMARK CORP | TMK | -12.4\% | 48.710 | 3 | NRG ENERGY, INC. | NRG | -8.0\% | 17.000 |
| 6 | SUNOCO INC. | SUN | -11.8\% | 49.290 | 2 | L-3 COMMUNICATIO | LLL | -7.8\% | 73.540 |
| 30 | DIRECTV GROUP IN | DTV | -11.2\% | 49.280 | New | NORFOLK SOUTHERN | NSC | -7.8\% | 72.930 |
| 8 | CINTAS CORPORATI | CTAS | -10.7\% | 39.170 | New | CHUBB CORP | CB | -7.7\% | 73.070 |
| 6 | CONOCOPHILLIPS | COP | -10.5\% | 54.605 | New | COCA COLA ENTERP | CCE | -7.7\% | 30.120 |
| 50 | WELLPOINT INC. | WLP | -10.0\% | 67.820 | 3 | VIACOM INC. (CL. | VIAB | -7.7\% | 46.390 |
| 6 | HARRIS CORP | HRS | -9.9\% | 45.540 | New | TIME WARNER CABL | TWC | -7.5\% | 80.450 |
| 5 | BEST BUY CO., IN | BBY | -9.8\% | 22.070 | 18 | LSI CORPORATION | LSI | -7.3\% | 8.040 |
| 3 | INGERSOLL-RAND P | IR | -9.8\% | 42.520 | 6 | ZIMMER HOLDINGS, | ZMH | -7.3\% | 62.930 |
| 2 | LEXMARK INTERNAT | LXK | -9.7\% | 30.100 | 2 | DELL INC. | DELL | -7.3\% | 16.370 |
| 6 | TIME WARNER INC. | TWX | -9.6\% | 37.475 | New | THE TRAVELERS CO | TRV | -7.3\% | 64.320 |

# Relative Strength - 30wk/75wk Moving Average 

## Top 50 S\&P 500 Companies By RELATIVE STRENGTH.

Relative Strength: The ratio of the 30 -week moving average of price to the 75 -week moving average.
 the screen prior to its introduction and is not intended to be indicative of future performance
Screen for April

| Mo. <br> In <br> Scrn. |  | Ticker | Relative <br> Strength | $\begin{array}{r} \text { Price } \\ 04 / 30 / 2012 \end{array}$ | Mo. <br> In <br> Scrn | Company | Ticker | Relative <br> Strength | Price <br> 04/30/2012 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 12 | EL PASO CORP | EP | 1.25 | 29.670 | 8 | LIMITED BRANDS I | LTD | 1.13 | 49.700 |
| 5 | DOLLAR TREE, INC | DLTR | 1.22 | 101.660 | 8 | LORILLARD, INC. | LO | 1.13 | 135.290 |
| 6 | FASTENAL CO | FAST | 1.21 | 46.820 | 2 | NOVELLUS | NVLS | 1.13 | 46.800 |
| 6 | INTUITIVE SURGIC | ISRG | 1.21 | 578.200 | 2 | THE HOME DEPOT, | HD | 1.12 | 51.790 |
| 8 | MASTERCARD, INC | MA | 1.20 | 452.270 | 25 | ESTEE LAUDER | EL | 1.12 | 65.350 |
| 8 | ROSS STORES INC | ROST | 1.20 | 61.500 | 2 | CELGENE CORP | CELG | 1.12 | 72.925 |
| 8 | V F CORP | VFC | 1.20 | 152.050 | 5 | PERRIGO COMPANY | PRGO | 1.12 | 104.900 |
| 11 | BIOGEN IDEC | BIIB | 1.20 | 134.010 | 3 | EXPEDIA INC | EXPE | 1.12 | 42.650 |
| 6 | GOODRICH CORP. | GR | 1.20 | 125.460 | New | AIRGAS, INC. | ARG | 1.12 | 91.640 |
| 5 | O'REILLY AUTOMOT | ORLY | 1.19 | 105.505 | 3 | PHILIP MORRIS IN | PM | 1.11 | 89.510 |
| 4 | MOTOROLA MOBILIT | MMI | 1.19 | 38.820 | 3 | SIMON PROPERTY G | SPG | 1.11 | 155.600 |
| 6 | GRAINGER (W.W.) | GWW | 1.18 | 207.820 | New | WILLIAMS COS INC | WMB | 1.11 | 34.030 |
| 6 | MACY'S | M | 1.18 | 41.020 | 4 | MCDONALD'S CORPO | MCD | 1.11 | 97.450 |
| 5 | APPLE INC | AAPL | 1.18 | 583.980 | 2 | INTEL CORPORATIO | INTC | 1.11 | 28.395 |
| 8 | STARBUCKS CORP | SBUX | 1.18 | 57.370 | 9 | CERNER CORP | CERN | 1.11 | 81.110 |
| 5 | TJX COMPANIES, I | TJX | 1.18 | 41.710 | 13 | DISCOVER FINANCI | DFS | 1.11 | 33.900 |
| 5 | VISA INC. | V | 1.18 | 122.980 | New | LENNAR CORPORATI | LEN | 1.11 | 27.740 |
| 13 | CHIPOTLE MEXICAN | CMG | 1.17 | 414.150 | 3 | BRISTOL-MYERS SQ | BMY | 1.11 | 33.370 |
| 11 | CABOT OIL \& GAS | COG | 1.17 | 35.140 | 14 | CBS CORP CL-B | CBS | 1.11 | 33.380 |
| 15 | WHOLE FOODS MARK | WFM | 1.15 | 83.070 | 2 | NIKE | NKE | 1.11 | 111.870 |
| 9 | POLO RALPH LAURE | RL | 1.14 | 172.270 | 4 | NISOURCE INC | NI | 1.11 | 24.650 |
| 2 | WYNDHAM WORLDWIDE CORP | WYN | 1.14 | 50.340 | New | TOTAL SYSTEM SER | TSS | 1.10 | 23.520 |
| 7 | AUTOZONE INC. | AZO | 1.13 | 396.160 | 7 | BED BATH \& BEYON | BBBY | 1.10 | 70.390 |
| 10 | ONEOK INC | OKE | 1.13 | 85.890 | New | YUM! BRANDS, INC | YUM | 1.10 | 72.730 |
| 10 | HUMANA INC | HUM | 1.13 | 80.680 | New | COACH INC. | COH | 1.10 | 73.160 |

# Relative Strength - 5wk/30wk Moving Average <br> Top 50 S\&P 500 Companies By 5W/30W Price Moving Average 



Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The

|  | Materials <br> 6\% <br> Industrials <br> 6\% <br> Disc <br> 38\% |
| :---: | :---: |
| Absolute Returns |  |
| Last 1 M onth | -2.49\% |
| Last 3 M onth s | 3.77 \% |
| Last 6 M onth s | $4.89 \%$ |
| Last 12 M onth s | -2.38\% |
| 2012 Y T D | $5.36 \%$ | unshaded portion represents actual performance since February 2010. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

## Screen for April

| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  |  |  | Price |
| Scrn. Company | Ticker | 5W/30W | 04/30/2012 |  |
|  |  |  |  |  |
| 3 | Apple Inc | AAPL | 1.3 | 583.980 |
| 2 | priceline.com | PCLN | 1.3 | 760.820 |
| 3 | Regions Financia | RF | 1.3 | 6.740 |
| New | FOSSIL INC | FOSL | 1.3 | 130.670 |
| 2 | Gap Inc. | GPS | 1.3 | 28.500 |
| 5 | Lennar Corporati | LEN | 1.3 | 27.740 |
| 2 | BANK OF AMERICA CORP | BAC | 1.2 | 8.110 |
| 4 | PulteGroup Incor | PHM | 1.2 | 9.840 |
| New | American Interna | AIG | 1.2 | 34.030 |
| 3 | Advanced Micro D | AMD | 1.2 | 7.360 |
| New | STARBUCKS CORP | SBUX | 1.2 | 57.370 |
| 2 | Discover Financi | DFS | 1.2 | 33.900 |
| 3 | Textron | TXT | 1.2 | 26.640 |
| 2 | Salesforce.com, | CRM | 1.2 | 155.730 |
| 5 | WYNDHAM WORLDWIDE CORP | WYN | 1.2 | 50.340 |
| 2 | The Sherw in-Will | SHW | 1.2 | 120.280 |
| 3 | Western Digital | WDC | 1.2 | 38.810 |
| 5 | Low e's Companies | LOW | 1.2 | 31.470 |
| 2 | J.P. Morgan Chas | JPM | 1.2 | 42.980 |
| New | Red Hat Inc. | RHT | 1.2 | 59.610 |
| 2 | TJX Companies, I | TJX | 1.2 | 41.710 |
| 2 | ROSS STORES INC | ROST | 1.2 | 61.500 |
| 3 | LSI Corporation | LSI | 1.2 | 8.040 |
| 3 | PerkinElmer, Inc | PKI | 1.2 | 27.600 |
| 5 | The Home Depot, | HD | 1.2 | 51.790 |
|  |  |  |  |  |

Mo.

| In |  |  | Price |  |
| :--- | :--- | :--- | ---: | ---: |
| Scrn. Company | Ticker | 5W/30W | 04/30/2012 |  |
|  |  |  |  |  |
| New | CBS Corp CI-B | CBS | 1.2 | 33.380 |
| New | FMC CORP | FMC | 1.2 | 110.450 |
| New | Intuitive Surgic | ISRG | 1.2 | 578.200 |
| 4 | BB\&T Corporation | BBT | 1.2 | 32.040 |
| 3 | WHIRLPOOL CORP | WHR | 1.2 | 64.020 |
| 2 | HARLEY-DAVIDSON INC | HOG | 1.2 | 52.330 |
| 2 | Teradata Corpora | TDC | 1.2 | 69.780 |
| 4 | MASCO CORP | MAS | 1.2 | 13.180 |
| 4 | First Horizon Na | FHN | 1.2 | 9.180 |
| New | Chipotle Mexican | CMG | 1.2 | 414.150 |
| 2 | Federated Invest | FII | 1.2 | 22.080 |
| New | Yum! Brands, Inc | YUM | 1.2 | 72.730 |
| New | Zions Bancorpora | ZION | 1.2 | 20.390 |
| New | Fidelity Nationa | FIS | 1.2 | 33.670 |
| 2 | Macy 's | M | 1.2 | 41.020 |
| New | Ingersoll-Rand P | IR | 1.2 | 42.520 |
| 3 | Eastman Chemical | EMN | 1.2 | 53.970 |
| New | Capital One Fina | COF | 1.2 | 55.480 |
| 5 | AKAMAI TECHNOLOGIES INC | AKAM | 1.2 | 32.590 |
| 5 | DR Horton Incorp | DHI | 1.2 | 16.350 |
| New | Wells Fargo \& Co | WFC | 1.2 | 33.420 |
| New | Discovery Commun | DISCA | 1.2 | 54.430 |
| New | Autodesk Inc. | ADSK | 1.2 | 39.370 |
| 3 | Invesco | IVZ | 1.2 | 24.840 |
| New | Express Scripts | ESRX | 1.2 | 55.790 |
|  |  |  |  |  |
|  |  |  |  |  |

# Relative Strength - 10wk/ 40wk Moving Average <br> Top 50 S\&P 500 Companies By 10W/40W Price Moving Average 



Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010 Back tested performane is hypothetica in montur end Jaflect 2010 . The screen prior to its introduction and is not intended to be indicative of future performance

## Screen for April

| Mo. |  |  |  |  |
| :--- | :--- | :--- | :--- | ---: |
| In |  |  |  | Price |
| Scrn. Company | Ticker | 10WI40W | $04 / 30 / 2012$ |  |
|  |  |  |  |  |
| 3 | PulteGroup Incor | PHM | 1.3 | 9.840 |
| 4 | Lennar Corporati | LEN | 1.3 | 27.740 |
| 3 | Apple Inc | AAPL | 1.3 | 583.980 |
| 2 | Gap Inc. | GPS | 1.3 | 28.500 |
| 2 | Regions Financia | RF | 1.3 | 6.740 |
| 3 | Textron | TXT | 1.3 | 26.640 |
| New | priceline.com | PCLN | 1.2 | 760.820 |
| 3 | AKAMAI TECHNOLOGIES INC | AKAM | 1.2 | 32.590 |
| New | FOSSIL INC | FOSL | 1.2 | 130.670 |
| 5 | Nov ellus | NVLS | 1.2 | 46.800 |
| 4 | WYNDHAM WORLDWIDE CORP | WYN | 1.2 | 50.340 |
| 6 | FASTENAL CO | FAST | 1.2 | 46.820 |
| 4 | Low e's Companies | LOW | 1.2 | 31.470 |
| 5 | F5 Netw orks, Inc | FFIV | 1.2 | 133.930 |
| 7 | ROSS STORES INC | ROST | 1.2 | 61.500 |
| 5 | The Home Depot, | HD | 1.2 | 51.790 |
| 2 | LSI Corporation | LSI | 1.2 | 8.040 |
| 4 | The Sherw in-Will | SHW | 1.2 | 120.280 |
| 6 | Macy 's | M | 1.2 | 41.020 |
| 4 | DR Horton Incorp | DHI | 1.2 | 16.350 |
| 2 | Western Digital | WDC | 1.2 | 38.810 |
| 3 | MASCO CORP | MAS | 1.2 | 13.180 |
| 2 | First Horizon Na | FHN | 1.2 | 9.180 |
| 8 | TJX Companies, I | TJX | 1.2 | 41.710 |
| 10 | Intuitive Surgic | ISRG | 1.2 | 578.200 |



| A b solute R eturns |  |
| :--- | ---: |
| Last 1 M onth | $-0.95 \%$ |
| Last 3 M onth s | $6.48 \%$ |
| Last 6 M onth s | $7.87 \%$ |
| Last 12 M onth s | $-3.77 \%$ |
| 2012 Y T D | $8.02 \%$ |

Mo.

| In |  |  | Price |  |
| :--- | :--- | :--- | ---: | ---: |
| Scrn. Company | Ticker | 10WI40W | $04 / 30 / 2012$ |  |
|  |  |  |  |  |
| New | WHIRLPOOL CORP | WHR | 1.2 | 64.020 |
| 9 | STARBUCKS CORP | SBUX | 1.2 | 57.370 |
| 2 | Discover Financi | DFS | 1.2 | 33.900 |
| 3 | BB\&T Corporation | BBT | 1.2 | 32.040 |
| 2 | Invesco | IVZ | 1.2 | 24.840 |
| 2 | Advanced Micro D | AMD | 1.2 | 7.360 |
| 3 | Jabil Circuit In | JBL | 1.2 | 23.450 |
| 7 | EL PASO CORP | EP | 1.2 | 29.670 |
| 2 | Comcast Corp (C | CMCSA | 1.2 | 30.350 |
| 9 | Visa Inc. | V | 1.2 | 122.980 |
| New | BANK OF AMERICA CORP | BAC | 1.2 | 8.110 |
| New | PerkinElmer, Inc | PKI | 1.2 | 27.600 |
| 2 | Eastman Chemical | EMN | 1.2 | 53.970 |
| 8 | O'Reilly Automot | ORLY | 1.2 | 105.510 |
| New | FMC CORP | FMC | 1.2 | 110.450 |
| New | Teradata Corpora | TDC | 1.2 | 69.780 |
| 2 | CA INC | CA | 1.2 | 26.420 |
| 3 | Pioneer Natural | PXD | 1.2 | 115.820 |
| New | HARLEY-DAVIDSON INC | HOG | 1.2 | 52.330 |
| 7 | Grainger (W.W.) | GWW | 1.2 | 207.820 |
| New | Yum! Brands, Inc | YUM | 1.2 | 72.730 |
| 3 | VULCAN MATERIALS CO | VMC | 1.2 | 42.810 |
| New | Chipotle Mexican | CMG | 1.2 | 414.150 |
| New | CBS Corp CI-B | CBS | 1.2 | 33.380 |
| New | American Interna | AIG | 1.2 | 34.030 |
|  |  |  |  |  |
|  |  |  |  |  |

## Price to Moving Average (200-Day) <br> Top 50 S\&P 500 Companies By Price to 200-Day Moving Average



Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

## Screen for April

| Mo. |  |  |  |  |
| :--- | :--- | :--- | :--- | ---: |
| In |  |  |  |  |
| Scrn. | Company | Ticker | Pricel200D | 04/30/2012 |
|  |  |  |  |  |
| 4 | PulteGroup Incor | PHM | 1.5 | 9.840 |
| 5 | Lennar Corporati | LEN | 1.4 | 27.740 |
| 3 | Gap Inc. | GPS | 1.4 | 28.500 |
| 3 | priceline.com | PCLN | 1.4 | 760.820 |
| 2 | Regions Financia | RF | 1.4 | 6.740 |
| 9 | O'Reilly Automot | ORLY | 1.4 | 105.510 |
| 6 | WYNDHAM WORLDWIDE CORP | WYN | 1.4 | 50.340 |
| 4 | The Sherw in-Will | SHW | 1.3 | 120.280 |
| 5 | DR Horton Incorp | DHI | 1.3 | 16.350 |
| New | American Interna | AIG | 1.3 | 34.030 |
| 8 | ROSS STORES INC | ROST | 1.3 | 61.500 |
| 4 | Apple Inc | AAPL | 1.3 | 583.980 |
| 8 | TJX Companies, I | TJX | 1.3 | 41.710 |
| 11 | Intuitive Surgic | ISRG | 1.3 | 578.200 |
| New | Sunoco Inc. | SUN | 1.3 | 49.290 |
| 4 | Lowe's Companies | LOW | 1.3 | 31.470 |
| 5 | The Home Depot, | HD | 1.3 | 51.790 |
| 2 | Red Hat Inc. | RHT | 1.3 | 59.610 |
| 3 | FMC CORP | FMC | 1.3 | 110.450 |
| 3 | Discover Financi | DFS | 1.3 | 33.900 |
| 2 | MASCO CORP | MAS | 1.3 | 13.180 |
| 2 | STARBUCKS CORP | SBUX | 1.3 | 57.370 |
| New | HARLEY-DAVIDSON INC | HOG | 1.3 | 52.330 |
| 7 | Macy 's | M | 1.3 | 41.020 |
| New | Discovery Commun | DISCA | 1.3 | 54.430 |

Mo.

| In |  |  | Price |  |
| :--- | :--- | :--- | ---: | ---: |
| Scrn. | Company | Ticker | Price/200D | $04 / 30 / 2012$ |
|  |  |  |  |  |
| New | FOSSIL INC | FOSL | 1.3 | 130.670 |
| 4 | F5 Netw orks, Inc | FFIV | 1.3 | 133.930 |
| New | Citrix Sy stems I | CTXS | 1.3 | 85.610 |
| 3 | Pioneer Natural | PXD | 1.3 | 115.820 |
| New | eBay | EBAY | 1.3 | 41.020 |
| 2 | BB\&T Corporation | BBT | 1.3 | 32.040 |
| New | Dollar Tree, Inc | DLTR | 1.2 | 101.660 |
| 4 | Textron | TXT | 1.2 | 26.640 |
| New | MasterCard, Inc | MA | 1.2 | 452.270 |
| New | Crown Castle Int | CCI | 1.2 | 56.610 |
| New | PPG Industries I | PPG | 1.2 | 105.240 |
| 2 | CBS Corp CI-B | CBS | 1.2 | 33.380 |
| 2 | Yum! Brands, Inc | YUM | 1.2 | 72.730 |
| 3 | Visa Inc. | V | 1.2 | 122.980 |
| New | EQUIFAX INC | EFX | 1.2 | 45.820 |
| 5 | Nov ellus | NVLS | 1.2 | 46.800 |
| New | Teradata Corpora | TDC | 1.2 | 69.780 |
| New | Airgas, Inc. | ARG | 1.2 | 91.640 |
| New | Ingersoll-Rand P | IR | 1.2 | 42.520 |
| New | CERNER CORP | CERN | 1.2 | 81.110 |
| New | Simon Property G | SPG | 1.2 | 155.600 |
| 3 | Comcast Corp (C | CMCSA | 1.2 | 30.350 |
| 7 | EL PASO CORP | EP | 1.2 | 29.670 |
| New | Eastman Chemical | EMN | 1.2 | 53.970 |
| New | PerkinElmer, Inc | PKI | 1.2 | 27.600 |
|  |  |  |  |  |

## Price Return - 12-Month Performance

Top 50 S\&P 500 Companies By 12-month price return.



| A b solute Retu |  |
| :---: | :---: |
| Last1 M onth | $1.50 \%$ |
| Last 3 M onth s | $11.59 \%$ |
| Last 6 M onth s | $10.96 \%$ |
| Last 12 M onth s | $2.48 \%$ |
| 2012 Y T D | $12.76 \%$ |

Source: BofA Merrill Lynch US Quantitative Strategy

The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

## Screen for April

|  |  |  |  | Price |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn.* | Company | Ticker | Return | 04/30/2012 | Scrn.* | Company | Ticker | Return | 04/30/2012 |
| 5 | O'Reilly Autom ot | ORLY | 78.6\% | 105.510 | 8 | Grainger (W.W.) | GWW | 37.1\% | 207.820 |
| 5 | Dollar Tree, Inc | DLTR | 76.8\% | 101.660 | 15 | Discover Financi | DFS | 36.5\% | 33.900 |
| 5 | Macy 's | M | 71.6\% | 41.020 | New | FOSSIL INC | FOSL | 36.4\% | 130.670 |
| 9 | ROSS STORES INC | ROST | 66.9\% | 61.500 | 4 | CF Industries | CF | 36.4\% | 193.060 |
| 4 | Apple Inc | AAPL | 66.8\% | 583.980 | 2 | Nike | NKE | 35.9\% | 111.870 |
| 8 | Intuitiv e Surgic | ISRG | 65.3\% | 578.200 | 2 | Simon Property G | SPG | 35.8\% | 155.600 |
| 9 | M asterC ard, Inc | MA | 63.9\% | 452.270 | 4 | Yum! Brands, Inc | YUM | 35.6\% | 72.730 |
| 10 | STARBUCKS CORP | SBUX | 58.5\% | 57.370 | 3 | CERNER CORP | CERN | 35.0\% | 81.110 |
| 6 | Visa Inc. | V | 57.4\% | 122.980 | New | Estee Lauder | EL | 34.7\% | 65.350 |
| 6 | TJX Companies, I | TJX | 55.6\% | 41.710 | New | Gilead Sciences | GILD | 33.9\% | 52.020 |
| 5 | Chipotle Mexican | CMG | 55.2\% | 414.150 | New | Whole Foods Mark | WFM | 32.4\% | 83.070 |
| 15 | EL PASO CORP | EP | 53.0\% | 29.670 | 2 | CBS Corp Cl-B | CBS | 32.4\% | 33.380 |
| 9 | V F Corp | VFC | 51.2\% | 152.050 | 2 | F5 Netw orks, Inc | FFIV | 32.1\% | 133.930 |
| 5 | M otorola M obilit | MMI | 49.0\% | 38.820 | New | Crown Castle Int | CCI | 32.1\% | 56.610 |
| New | The Sherw in-Will | SHW | 46.2\% | 120.280 | 3 | Airgas, Inc. | ARG | 32.0\% | 91.640 |
| 2 | Lennar Corporati | LEN | 46.1\% | 27.740 | 4 | Polo Ralph Laure | RL | 31.7\% | 172.270 |
| 2 | Novellus | NVLS | 45.8\% | 46.800 | New | DR Horton Incorp | DHI | 31.4\% | 16.350 |
| 4 | WYNDHAM WORLDWIDE CORP | WYN | 45.4\% | 50.340 | 6 | Philip Morris In | PM | 28.9\% | 89.510 |
| 8 | Goodrich Corp. | GR | 42.0\% | 125.460 | 4 | Mead Johnson | M JN | 27.9\% | 85.560 |
| New | HARLEY-DAVIDSON INC | HOG | 40.4\% | 52.330 | 6 | Lorillard, Inc. | LO | 27.0\% | 135.290 |
| 4 | AutoZone Inc. | AZO | 40.3\% | 396.160 | New | NISOURCE INC | NI | 26.7\% | 24.650 |
| 8 | FASTENAL CO | FAST | 39.6\% | 46.820 | New | Cintas Corporati | CTAS | 26.2\% | 39.170 |
| 2 | The Home Depot, | HD | 39.4\% | 51.790 | 4 | MATTEL INC | MAT | 25.7\% | 33.600 |
| 3 | priceline.com | PCLN | 39.1\% | 760.820 | 2 | Red Hat Inc. | RHT | 25.6\% | 59.610 |
| 13 | Biogen Idec | BIIB | 37.2\% | 134.010 | 2 | Bed Bath \& Bey on | BBBY | 25.4\% | 70.390 |

[^8]
## Price Return - 9-Month Performance

Top 50 S\&P 500 Companies By 9-month price return.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Back tested performance is hypothetical in nature and reflects application of the creen prior to its introduction and is not intended to be indicative of future performance


## Screen for April

| Mo. In |  |  | Price Return | Price <br> 04/30/2012 | Mo. In |  |  | Price Return | Price <br> 04/30/2012 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn. | Company | Ticker |  | 04/30/2012 | Scrn. | Company | Ticker |  |  |
| 7 | O'Reilly Automot | ORLY | 77.3\% | 105.510 | 8 | AutoZone Inc. | AZO | 38.8\% | 396.160 |
| 8 | Motorola Mobilit | MMI | 73.5\% | 38.820 | 4 | Yum! Brands, Inc | YUM | 37.7\% | 72.730 |
| 8 | ROSS STORES INC | ROST | 62.3\% | 61.500 | 3 | DR Horton Incorp | DHI | 37.6\% | 16.350 |
| 3 | Lennar Corporati | LEN | 56.8\% | 27.740 | New | Discovery Commun | DISCA | 36.8\% | 54.430 |
| 2 | The Sherw in-Will | SHW | 55.9\% | 120.280 | New | AKAMAI TECHNOLOGIES INC | AKAM | 34.6\% | 32.590 |
| 5 | Dollar Tree, Inc | DLTR | 53.5\% | 101.660 | 3 | Airgas, Inc. | ARG | 33.4\% | 91.640 |
| 8 | TJX Companies, I | TJX | 50.9\% | 41.710 | 2 | EQUIFAX INC | EFX | 33.4\% | 45.820 |
| 4 | Novellus | NVLS | 50.8\% | 46.800 | 3 | Discover Financi | DFS | 32.4\% | 33.900 |
| 4 | Apple Inc | AAPL | 49.6\% | 583.980 | 8 | Goodrich Corp. | GR | 31.9\% | 125.460 |
| 9 | MasterCard, Inc | MA | 49.1\% | 452.270 | New | VeriSign | VRSN | 31.7\% | 41.110 |
| 4 | The Home Depot, | HD | 48.3\% | 51.790 | New | Biogen Idec | BIIB | 31.6\% | 134.010 |
| 3 | Gap Inc. | GPS | 47.7\% | 28.500 | 2 | Limited Brands I | LTD | 31.3\% | 49.700 |
| 2 | Low e's Companies | LOW | 45.8\% | 31.470 | 2 | KLA-Tencor Corp. | KLAC | 30.9\% | 52.140 |
| 5 | WYNDHAM WORLDWIDE CORP | WYN | 45.5\% | 50.340 | New | CINCINNATI FINANCIAL CORP | CINF | 30.4\% | 35.650 |
| 12 | EL PASO CORP | EP | 44.4\% | 29.670 | 2 | Crown Castle Int | CCl | 30.4\% | 56.610 |
| 10 | Intuitive Surgic | ISRG | 44.4\% | 578.200 | 10 | V F Corp | VFC | 30.2\% | 152.050 |
| 8 | Visa Inc. | V | 43.8\% | 122.980 | New | Amgen | AMGN | 30.0\% | 71.110 |
| New | F5 Netw orks, Inc | FFIV | 43.3\% | 133.930 | 2 | Simon Property G | SPG | 29.1\% | 155.600 |
| New | PulteGroup Incor | PHM | 43.2\% | 9.840 | 3 | Jabil Circuit In | JBL | 28.1\% | 23.450 |
| 11 | STARBUCKS CORP | SBUX | 43.1\% | 57.370 | New | SEMPRA ENERGY | SRE | 27.7\% | 64.740 |
| 7 | Macy 's | M | 42.1\% | 41.020 | 8 | Chipotle Mexican | CMG | 27.6\% | 414.150 |
| 2 | Red Hat Inc. | RHT | 41.7\% | 59.610 | New | Terady ne Inc. | TER | 27.6\% | 17.210 |
| 3 | priceline.com | PCLN | 41.5\% | 760.820 | 4 | Polo Ralph Laure | RL | 27.5\% | 172.270 |
| 7 | Grainger (W.W.) | GWW | 40.1\% | 207.820 | New | ECOLAB INC | ECL | 27.4\% | 63.690 |
| 7 | FASTENAL CO | FAST | 39.1\% | 46.820 | New | Lorillard, Inc. | LO | 27.4\% | 135.290 |

## Price Return - 3-Month Performance

Top 50 S\&P 500 Companies By 3-month price return.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Back tested performance is hypothetical in nature and reflects application of the


| A b solute R eturns |  |
| :--- | ---: |
| Last M onth | $-3.71 \%$ |
| Last 3 M onth s | $5.00 \%$ |
| Last 6 M onth s | $13.46 \%$ |
| Last 12 M onth s | $2.34 \%$ |
| 2012 Y T D | $13.18 \%$ | screen prior to its introduction and is not intended to be indicative of future performance

Screen for April


## Price Return - 11-Month Performance

Top 50 S\&P 500 Companies By 11-month price return from one year ago.


## Screen for April

| Mo. In |  |  | Price | Price | Mo. In Scrn.* |  |  | Price | Price 04/30/2012 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Company | Ticker |  |  |  | Company | Ticker |  |  |
| 3 | Apple Inc | AAPL | 71.2\% | 583.980 | New | F5 Netw orks, Inc | FFIV | 33.1\% | 133.930 |
| 5 | Macy 's | M | 66.2\% | 41.020 | 4 | Yum! Brands, Inc | YUM | 32.7\% | 72.730 |
| 5 | Dollar Tree, Inc | DLTR | 64.3\% | 101.660 | New | Whole Foods Mark | WFM | 32.6\% | 83.070 |
| 7 | FASTENAL CO | FAST | 61.3\% | 46.820 | New | The Sherw in-Will | SHW | 32.1\% | 120.280 |
| 8 | ROSS STORES INC | ROST | 57.7\% | 61.500 | 2 | Nike | NKE | 31.7\% | 111.870 |
| 5 | Chipotle Mexican | CMG | 56.7\% | 414.150 | New | HARLEY-DAVIDSON INC | HOG | 31.7\% | 52.330 |
| 2 | Novellus | NVLS | 55.5\% | 46.800 | 4 | AutoZone Inc. | AZO | 31.7\% | 396.160 |
| 8 | Intuitiv e Surgic | ISRG | 54.9\% | 578.200 | 4 | CELGENE CORP | CELG | 31.7\% | 72.930 |
| 5 | O'Reilly Automot | ORLY | 54.7\% | 105.510 | New | priceline.com | PCLN | 31.2\% | 760.820 |
| 10 | STARBUCKS CORP | SBUX | 54.4\% | 57.370 | 3 | Coach Inc. | COH | 29.2\% | 73.160 |
| 8 | MasterCard, Inc | MA | 52.4\% | 452.270 | 3 | CF Industries | CF | 29.0\% | 193.060 |
| 15 | EL PASO CORP | EP | 52.4\% | 29.670 | 12 | Biogen Idec | BIIB | 29.0\% | 134.010 |
| 5 | Visa Inc. | V | 51.1\% | 122.980 | New | Airgas, Inc. | ARG | 28.1\% | 91.640 |
| 5 | Motorola Mobilit | MMI | 50.6\% | 38.820 | New | Estee Lauder | EL | 27.7\% | 65.350 |
| 5 | TJX Companies, I | TJX | 48.1\% | 41.710 | 2 | Philip Morris In | PM | 27.6\% | 89.510 |
| 9 | V F Corp | VFC | 45.2\% | 152.050 | 4 | Simon Property G | SPG | 27.2\% | 155.600 |
| 2 | Lennar Corporati | LEN | 43.1\% | 27.740 | 3 | CERNER CORP | CERN | 26.7\% | 81.110 |
| 7 | Goodrich Corp. | GR | 41.9\% | 125.460 | 2 | Jabil Circuit In | JBL | 26.6\% | 23.450 |
| 7 | Grainger (W.W.) | GWW | 41.7\% | 207.820 | New | Red Hat Inc. | RHT | 26.2\% | 59.610 |
| New | FOSSIL INC | FOSL | 37.8\% | 130.670 | 3 | Cintas Corporati | CTAS | 26.0\% | 39.170 |
| 2 | The Home Depot, | HD | 35.4\% | 51.790 | 3 | MATTEL INC | MAT | 26.0\% | 33.600 |
| New | CBS Corp CI-B | CBS | 34.5\% | 33.380 | New | Gilead Sciences | GILD | 25.8\% | 52.020 |
| 4 | WYNDHAM WORLDWIDE CORP | WYN | 34.4\% | 50.340 | 4 | McDonald's Corpo | MCD | 25.3\% | 97.450 |
| New | Discover Financi | DFS | 34.2\% | 33.900 | 2 | NISOURCE INC | NI | 25.2\% | 24.650 |
| 2 | Polo Ralph Laure | RL | 33.3\% | 172.270 | New | Crown Castle Int | CCl | 24.5\% | 56.610 |

[^9]
## Price Return - 12-Month and 1-Month Performance

Top 50 S\&P 500 Companies By average rank of 12-month and 1-month price return.


Source: BotA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance


Screen for April

| Mo. |  |  | Avg |  | Mo. |  |  | Avg |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  |  | ercent | Price | In |  |  | rcent | Price |
| Scrn. | Company | Ticker | Rank | 04/30/2012 | Scrn. | Company | Ticker | Rank | 04/30/2012 |
| 3 | O'Reilly Automot | ORLY | 1.2 | 105.510 | 2 | Amazon.com | AMZN | 10.0 | 231.900 |
| New | The Sherw in-Will | SHW | 3.6 | 120.280 | 2 | Discovery Commun | DISCA | 10.1 | 54.430 |
| 3 | Dollar Tree, Inc | DLTR | 3.9 | 101.660 | 2 | Family Dollar St | FDO | 10.1 | 67.550 |
| New | MasterCard, Inc | MA | 4.5 | 452.270 | New | Range Resources | RRC | 10.5 | 66.660 |
| 3 | Intuitiv e Surgic | ISRG | 5.0 | 578.200 | New | eBay | EBAY | 10.6 | 41.020 |
| 3 | WYNDHAM WORLDWIDE CORP | WYN | 5.1 | 50.340 | New | $V$ F Corp | VFC | 10.6 | 152.050 |
| 2 | ROSS STORES INC | ROST | 6.0 | 61.500 | New | Sunoco Inc. | SUN | 11.3 | 49.290 |
| New | HARLEY-DAVIDSON INC | HOG | 6.6 | 52.330 | 3 | Macy 's | M | 11.9 | 41.020 |
| New | Cabot Oil \& Gas | COG | 7.0 | 35.140 | New | The Hershey Comp | HSY | 12.6 | 67.010 |
| New | AutoZone Inc. | AZO | 7.1 | 396.160 | New | Lorillard, Inc. | LO | 12.6 | 135.290 |
| 2 | Biogen Idec | BIIB | 7.1 | 134.010 | New | SEMPRA ENERGY | SRE | 13.1 | 64.740 |
| 2 | Simon Property G | SPG | 7.6 | 155.600 | New | Amgen | AMGN | 13.1 | 71.110 |
| New | DR Horton Incorp | DHI | 7.6 | 16.350 | New | ONEOK INC | OKE | 13.1 | 85.890 |
| 4 | priceline.com | PCLN | 7.6 | 760.820 | New | Kimberly - Clark C | KMB | 13.6 | 78.470 |
| 6 | TJX Companies, I | TJX | 8.1 | 41.710 | 2 | TripAdv isor LLC | TRIP | 13.6 | 37.510 |
| New | CERNER CORP | CERN | 8.1 | 81.110 | 3 | FMC CORP | FMC | 14.1 | 110.450 |
| New | Gilead Sciences | GILD | 8.1 | 52.020 | 2 | Mead Johnson | MJN | 14.6 | 85.560 |
| 2 | Watson Pharmaceu | WPI | 9.0 | 75.360 | New | American Tower C | AM T | 14.6 | 65.580 |
| New | PulteGroup Incor | PHM | 9.1 | 9.840 | New | Nike | NKE | 15.1 | 111.870 |
| New | CF Industries | CF | 9.1 | 193.060 | 2 | STARBUCKS CORP | SBUX | 15.5 | 57.370 |
| 2 | Bed Bath \& Bey on | BBBY | 9.1 | 70.390 | 3 | The Home Depot, | HD | 15.6 | 51.790 |
| New | Crown Castle Int | CCl | 9.1 | 56.610 | 2 | American Express | AXP | 15.6 | 60.210 |
| New | Visa Inc. | V | 9.6 | 122.980 | New | Kraft Foods Inc. | KFT | 16.1 | 39.870 |
| 2 | Gap Inc. | GPS | 9.6 | 28.500 | 2 | Airgas, Inc. | ARG | 16.6 | 91.640 |
| New | Estee Lauder | EL | 9.6 | 65.350 | New | Altria Group, In | MO | 16.6 | 32.210 |

## Price Return - 12-Month and 1-Month Reversal

Top 50 S\&P 500 Companies By average rank of 12 -month and reversal 1-month price return.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Back tested performance is hypothetical in nature and reflects application of the

Screen for April


## Most Active

Top 50 S\&P 500 Companies By Most Actively Traded Stocks.
Most Actively Traded Stocks: Stocks have the highest monthly share trading volume.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end May 1986 to month end August 2003. The
Sector Concentration Staples


| Absoluter eturns |  |
| :---: | :---: |
| Last1 M onth | -2.27\% |
| Last 3 M onth s | $5.12 \%$ |
| Last 6 M onth s | $11.18 \%$ |
| Last 12 Months | -8.41\% |
| 2012 Y T D | $13.29 \%$ |

unshaded portion represents actual performance since September 2003. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for April

| Mo. <br> In <br> Scrn | Company | Ticker | Trading <br> Volume <br> (In Mils) | $\begin{array}{r} \text { Price } \\ 04 / 30 / 2012 \end{array}$ | Mo. <br> In <br> Scrn | Company | Ticker | Trading Volume (In Mils) | $\begin{array}{r} \text { Price } \\ 04 / 30 / 2012 \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 93 | BANK OF AMERICA CORP | BAC | 4570 | 8.110 | 105 | YAHOO! | YHOO | 337 | 15.540 |
| 89 | SPRINT | S | 1152 | 2.480 | New | GENWORTH FINANCI | GNW | 328 | 6.010 |
| 105 | MICROSOFT CORP | MSFT | 973 | 32.015 | 28 | QUALCOMM INC. | QCOM | 317 | 63.830 |
| 88 | FORD MOTOR CO | F | 971 | 11.280 | 18 | CORNING INC. | GLW | 313 | 14.350 |
| 105 | GENERAL ELECTRIC | GE | 881 | 19.580 | 105 | EXXONMOBIL CORP. | XOM | 313 | 86.340 |
| 105 | PFIZER INC. | PFE | 876 | 22.900 | 19 | HALLIBURTON COMP | HAL | 309 | 34.220 |
| 105 | CISCO SYSTEMS | CSCO | 808 | 20.155 | 11 | CHARLES SCHWAB C | SCHW | 309 | 14.280 |
| 105 | INTEL CORPORATIO | INTC | 791 | 28.395 | 105 | DELL INC. | DELL | 306 | 16.370 |
| 12 | CITIGROUP INC | C | 773 | 33.045 | 3 | ALPHA NATURAL RE | ANR | 305 | 16.130 |
| 37 | MICRON TECHNOLOG | MU | 763 | 6.590 | 29 | NEWS CORPORATION | NWSA | 299 | 19.605 |
| 67 | J.P. MORGAN CHAS | JPM | 641 | 42.980 | New | DUKE ENERGY | DUK | 291 | 21.430 |
| 3 | APPLE INC | AAPL | 583 | 583.980 | New | EBAY | EBAY | 290 | 41.020 |
| 105 | ORACLE CORP | ORCL | 575 | 29.400 | 2 | AMERICAN INTERNA | AIG | 286 | 34.030 |
| 43 | ALCOA INC. | AA | 566 | 9.730 | 22 | HUNTINGTON BANCS | HBAN | 282 | 6.690 |
| 4 | CHESAPEAKE ENERG | CHK | 566 | 18.440 | 32 | VERIZON COMMUNIC | VZ | 281 | 40.380 |
| 14 | MORGAN STANLEY | MS | 546 | 17.280 | 18 | MERCK \& CO. | MRK | 275 | 39.240 |
| 58 | WELLS FARGO \& CO | WFC | 537 | 33.415 | 2 | FIFTH THIRD BANC | FITB | 269 | 14.225 |
| 78 | AT\&T INC. | T | 514 | 32.910 | New | SUPERVALU INC. | SVU | 268 | 5.940 |
| 37 | REGIONS FINANCIA | RF | 509 | 6.740 | 6 | PULTEGROUP INCOR | PHM | 268 | 9.840 |
| 105 | EMC CORP | EMC | 394 | 28.210 | New | PROCTER \& GAMBLE | PG | 267 | 63.640 |
| 24 | HEWLETT-PACKARD | HPQ | 364 | 24.760 | New | WAL*MART STORES | WMT | 258 | 58.910 |
| 36 | ADVANCED MICRO D | AMD | 360 | 7.360 | 22 | NVIDIA CORPORATI | NVDA | 252 | 13.000 |
| 22 | KEYCORP | KEY | 355 | 8.040 | New | XEROX CORP | XRX | 248 | 7.780 |
| 15 | FREEPORT-MCMORAN | FCX | 350 | 38.300 | 90 | COMCAST CORP (C | CMCSA | 247 | 30.345 |
| New | BOSTON SCIENTIFI | BSX | 346 | 6.260 | New | DOW CHEMICAL | DOW | 244 | 33.880 |

## Earnings Momentum

## Top 50 S\&P 500 Companies By EPS MOMENTUM

Earnings Momentum: The difference between 12-month trailing EPS and year-ago12-month trailing EPS divided by yearago 12-month trailing EPS.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The
 unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for April

| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  |  | EPS | Price |
| Scrn. Company | Ticker | Momentum | 04/30/2012 |  |
|  |  |  |  |  |
| 11 | TESORO CORP. | TSO | 1938.1 | 23.250 |
| 7 | FIRST HORIZON NA | FHN | 1016.9 | 9.180 |
| 3 | EOG RESOURCES IN | EOG | 548.4 | 109.810 |
| 3 | GOODYEAR TIRE \& | GT | 400.0 | 10.980 |
| 3 | MERCK \& CO. | MRK | 334.6 | 39.240 |
| 4 | LSI CORPORATION | LSI | 316.7 | 8.040 |
| 9 | CF INDUSTRIES | CF | 310.7 | 193.060 |
| 3 | MARATHON PETROLE | MPC | 282.9 | 41.610 |
| 15 | WYNN RESORTS LTD | WYNN | 280.0 | 133.400 |
| 6 | AMEREN CORP | AEE | 270.7 | 32.790 |
| 7 | SUNTRUST BANKS, | STI | 256.8 | 24.280 |
| New | RANGE RESOURCES | RRC | 250.0 | 66.660 |
| 6 | WILLIAMS COS INC | WMB | 230.6 | 34.030 |
| 3 | EQUITY RESIDENTI | EQR | 200.0 | 61.440 |
| 2 | CROWN CASTLE INT | CCI | 195.1 | 56.610 |
| 13 | NUCOR | NUE | 192.7 | 39.210 |
| 4 | DR HORTON INCORP | DHI | 180.0 | 16.350 |
| 16 | TEXTRON | TXT | 153.2 | 26.640 |
| 4 | FORD MOTOR CO | F | 153.0 | 11.280 |
| New | NEWFIELD EXPLORA | NFX | 151.8 | 35.900 |
| 3 | ASSURANT INC. | AIZ | 151.0 | 40.340 |
| 4 | ZIONS BANCORPORA | ZION | 148.1 | 20.390 |
| 7 | NABORS INDUSTRIES LTD | NBR | 147.3 | 16.650 |
| 6 | CAREFUSION | CFN | 140.6 | 25.910 |
| 3 | REGIONS FINANCIA | RF | 128.6 | 6.740 |


| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  |  | EPS | Price |
| Scrn. | Company | Ticker | Momentum | $04 / 30 / 2012$ |
|  |  |  |  |  |
| 16 | VALERO ENERGY CO | VLO | 127.0 | 24.700 |
| New | HARMAN INTERNATIONAL INDS | HAR | 119.9 | 49.580 |
| 6 | NVIDIA CORPORATI | NVDA | 118.2 | 13.000 |
| 3 | CLOROX CO. | CLX | 114.7 | 70.100 |
| 10 | ROBERT HALF INTL | RHI | 110.5 | 29.800 |
| 7 | E*TRADE FINANCIA | ETFC | 110.0 | 10.630 |
| 4 | VERISIGN | VRSN | 108.3 | 41.110 |
| 15 | PACCAR INC | PCAR | 105.7 | 42.950 |
| New | HOST HOTELS \& RE | HST | 100.0 | 16.640 |
| 10 | JDS UNIPHASE CORP | JDSU | 100.0 | 12.170 |
| 3 | DENBURY RESOURCES INC | DNR | 98.6 | 19.040 |
| 10 | HUNTINGTON BANCS | HBAN | 96.9 | 6.690 |
| New | APPLE INC | AAPL | 94.8 | 583.980 |
| 16 | HARLEY-DAVIDSON INC | HOG | 94.7 | 52.330 |
| New | PRICELINE.COM | PCLN | 93.4 | 760.820 |
| 3 | FMC CORP | FMC | 92.6 | 110.450 |
| New | DISCOVER FINANCI | DFS | 92.1 | 33.900 |
| New | DISCOVERY COMMUN | DISCA | 90.5 | 54.430 |
| New | FIFTH THIRD BANC | FITB | 90.2 | 14.225 |
| New | PROLOGIS, INC. | PLD | 89.9 | 35.760 |
| New | SIMON PROPERTY G | SPG | 89.8 | 155.600 |
| New | SEMPRA ENERGY | SRE | 87.4 | 64.740 |
| New | STARWOOD HOTELS | HOT | 85.9 | 59.200 |
| New | PEPCO HOLDINGS INC | POM | 85.5 | 18.920 |
| 6 | INTERPUBLIC GROU | IPG | 83.9 | 11.810 |

## Projected Five-Year EPS Growth

Top 50 S\&P 500 Companies By PROJ. 5-YR EPS GROWTH
Projected 5-Year EPS Growth: The five-year EPS growth rate estimated by BofAML Fundamental Equity Research. If no BofAML estimate exist, then the IBES Mean Long Term Growth Estimate is used.
 screen prior to its introduction and is not intended to be indicative of future performance
Screen for April

| Mo. In |  |  | EPS Gr | Price | Mo. In |  |  | EPS Gr | Price |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn | Company | Ticker | Next 5Yr | 04/30/2012 | Scrn | Company | Ticker |  | 04/30/2012 |
| 18 | WYNN RESORTS LTD | WYNN | 86.9 | 133.400 | New | E*TRADE FINANCIA | ETFC | 22.4 | 10.630 |
| New | RANGE RESOURCES | RRC | 51.5 | 66.660 | 35 | METROPCS COMMUNI | PCS | 21.9 | 7.300 |
| New | CABOT OIL \& GAS | COG | 45.1 | 35.140 | 29 | CELGENE CORP | CELG | 21.7 | 72.925 |
| 24 | GOODYEAR TIRE \& | GT | 43.6 | 10.980 | 7 | JOHNSON CONTROLS | JCI | 21.6 | 31.970 |
| 13 | COMERICA INCORPO | CMA | 40.0 | 32.020 | 2 | ANADARKO PETROLE | APC | 20.6 | 73.210 |
| New | WESTERN DIGITAL | WDC | 39.4 | 38.810 | 30 | DIRECTV GROUP IN | DTV | 20.5 | 49.280 |
| 7 | SUNTRUST BANKS, | STI | 35.6 | 24.280 | 10 | NABORS INDUSTRIES LTD | NBR | 20.5 | 16.650 |
| 5 | SEARS HOLDINGS CORP | SHLD | 32.3 | 53.780 | 78 | AMAZON.COM | AMZN | 20.0 | 231.900 |
| 2 | EL PASO CORP | EP | 32.0 | 29.670 | 7 | CB RICHARD ELLIS | CBG | 20.0 | 18.810 |
| 27 | TEXTRON | TXT | 31.9 | 26.640 | 13 | CHIPOTLE MEXICAN | CMG | 20.0 | 414.150 |
| 10 | NETFLIX, INC. | NFLX | 30.0 | 80.140 | 5 | DOLLAR TREE, INC | DLTR | 20.0 | 101.660 |
| 8 | LENNAR CORPORATI | LEN | 28.8 | 27.740 | New | EXPRESS SCRIPTS | ESRX | 20.0 | 55.790 |
| New | PULTEGROUP INCOR | PHM | 28.0 | 9.840 | 7 | FLOWSERVE CORP | FLS | 20.0 | 114.930 |
| 16 | EQT CORPORATION | EQT | 27.3 | 49.820 | 5 | O'REILLY AUTOMOT | ORLY | 20.0 | 105.505 |
| 26 | DISCOVERY COMMUN | DISCA | 27.0 | 54.430 | 34 | RED HAT INC. | RHT | 20.0 | 59.610 |
| 12 | DENBURY RESOURCES INC | DNR | 26.2 | 19.040 | 149 | YAHOO! | YHOO | 20.0 | 15.540 |
| 8 | NOBLE ENERGY | NBL | 25.7 | 99.320 | 30 | PRICELINE.COM | PCLN | 20.0 | 760.820 |
| 22 | AUTONATION, INC. | AN | 25.7 | 34.580 | 5 | BORGWARNER INC. | BWA | 19.8 | 79.040 |
| 10 | ABERCROMBIE \& FI | ANF | 25.0 | 50.170 | 3 | VISA INC. | V | 19.6 | 122.980 |
| 17 | F5 NETWORKS, INC | FFIV | 25.0 | 133.930 | New | HELMERICH \& PAYNE | HP | 19.3 | 51.390 |
| 13 | M\&T BANK CORP | MTB | 25.0 | 86.270 | 4 | EDWARDS LIFESCIE | EW | 19.2 | 82.970 |
| 44 | SALESFORCE.COM, | CRM | 25.0 | 155.730 | 4 | CERNER CORP | CERN | 19.1 | 81.110 |
| 3 | MARRIOTT INTERNA | MAR | 24.3 | 39.090 | 3 | COGNIZANT TECHNO | CTSH | 18.9 | 73.330 |
| 7 | BB\&T CORPORATION | BBT | 23.7 | 32.040 | 3 | VIACOM INC. (CL. | VIAB | 18.6 | 46.390 |
| New | SOUTHWEST AIRLIN | LUV | 22.9 | 8.280 | 3 | KIMCO REALTY COR | KIM | 18.4 | 19.410 |

## Positive Earnings Surprise

## Top S\&P 500 Companies By POSITIVE EPS SURPRISE

Earnings Surprise: A forecast earnings surprise variable which compares BofAML estimates to those of the consensus after adjusting for the range of estimates. Stocks are ranked from 1 to 10, with 1 being among the most optimistic, relative to the consensus. 10 being among the most pessimistic.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for April


## Earnings Estimate Revision

Top 50 S\&P 500 Companies By UPWARD EPS EST. REVISION
EPS Estimate Revision: The difference between the I/B/E/S FY1 estimate and that of three months ago divided by the absolute value of the I/B/E/S FY1 estimate of three months ago.


Source: BofA Merrill Lynch US Quantitative Strategy
The performance chart represents actual returns since July 1989. There is no back tested performance.


Screen for April

| Mo. |  |
| :--- | :--- |
| In |  |
| Scrn. | Company |
|  |  |
| 2 | WESTERN DIGITAL |
| 3 | DR HORTON INCORP |
| 3 | LSI CORPORATION |
| 4 | TERADYNE INC. |
| 3 | VULCAN MATERIALS CO |
| 2 | WASHINGTON POST -CL B |
| 10 | APPLE INC |
| 3 | PULTEGROUP INCOR |
| 2 | ADVANCED MICRO D |
| 3 | APPLIED MATERIAL |
| 4 | KLA-TENCOR CORP. |
| 6 | DENBURY RESOURCES INC |
| New | AMERICAN INTERNA |
| 2 | MARATHON PETROLE |
| New | REGIONS FINANCIA |
| New | AON PLC |
| 3 | DISCOVER FINANCI |
| 2 | ANADARKO PETROLE |
| 5 | TEXTRON |
| New | COMERICA INCORPO |
| 2 | LENNAR CORPORATI |
| 4 | BB\&T CORPORATION |
| 3 | EOG RESOURCES IN |
| New | THE SHERWIN-WILL |
| New | PPG INDUSTRIES I |

## Equity Duration

Top 50 S\&P 500 Companies By HIGH DURATION
Equity Duration: An adaptation of our Dividend Discount Model that measures the interest-rate sensitivity of a stock. Longer duration (higher numbers) suggests more interest-rate sensitivity.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance


Screen for April

| Mo. |  |  |  |  | Mo. |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  |  | Equity | Price | In |  | Ticker | Equity Duration | Price |
| Scrn. Company |  | Ticker | Duration | 04/30/2012 | Scrn. Company |  |  |  | $04 / 30 / 2012$ |
| 40 | PATTERSON COS IN | PDCO | 72.2 | 34.090 | 4 | NIKE | NKE | 37.1 | 111.870 |
| 16 | MOTOROLA MOBILIT | MMI | 57.1 | 38.820 | 28 | GENWORTH FINANCI | GNW | 36.9 | 6.010 |
| 6 | AMERICAN INTERNA | AIG | 51.2 | 34.030 | 2 | VERISIGN | VRSN | 36.9 | 41.110 |
| 31 | TYSON FOODS, INC | TSN | 51.1 | 18.250 | 2 | FMC CORP | FMC | 36.8 | 110.450 |
| 15 | TEXAS INSTRUMENT | TXN | 47.2 | 31.940 | 6 | PROGRESSIVE CORP | PGR | 36.8 | 21.300 |
| 39 | NORDSTROM | JWN | 47.0 | 55.860 | 15 | COSTCO WHOLESALE | COST | 36.7 | 88.180 |
| 10 | AMAZON.COM | AMZN | 43.5 | 231.900 | New | EOG RESOURCES IN | EOG | 36.5 | 109.810 |
| 3 | XL GROUP PLC | XL | 42.7 | 21.510 | 10 | ALTERA CORP. | ALTR | 36.4 | 35.570 |
| 9 | POLO RALPH LAURE | RL | 42.6 | 172.270 | 3 | WHOLE FOODS MARK | WFM | 36.4 | 83.070 |
| 21 | PRECISION CASTPA | PCP | 42.6 | 176.370 | 9 | GRAINGER (W.W.) | GWW | 36.3 | 207.820 |
| 15 | INTEL CORPORATIO | INTC | 42.0 | 28.395 | 2 | DANAHER CORP | DHR | 36.0 | 54.220 |
| 24 | SALESFORCE.COM, | CRM | 39.7 | 155.730 | 4 | GOLDMAN SACHS GR | GS | 36.0 | 115.150 |
| 5 | MASTERCARD, INC | MA | 39.7 | 452.270 | 4 | RED HAT INC. | RHT | 35.8 | 59.610 |
| 28 | ROBERT HALF INTL | RHI | 39.5 | 29.800 | 6 | FEDEX CORPORATIO | FDX | 35.8 | 88.240 |
| 3 | CITRIX SYSTEMS I | CTXS | 39.1 | 85.610 | 8 | GOODRICH CORP. | GR | 35.8 | 125.460 |
| 13 | MEAD JOHNSON | MJN | 39.0 | 85.560 | New | SARA LEE CORPORA | SLE | 35.7 | 22.040 |
| 10 | INTUITIVE SURGIC | ISRG | 39.0 | 578.200 | New | PUBLIC STORAGE, | PSA | 35.7 | 143.260 |
| 10 | BALL CORP. | BLL | 38.8 | 41.760 | 5 | ALCOA INC. | AA | 35.5 | 9.730 |
| 15 | ESTEE LAUDER | EL | 38.7 | 65.350 | 3 | ALLERGAN INC. | AGN | 35.4 | 96.000 |
| 5 | PERRIGO COMPANY | PRGO | 38.5 | 104.900 | 4 | MONSANTO COMPANY | MON | 35.4 | 76.180 |
| 2 | NRG ENERGY, INC. | NRG | 37.7 | 17.000 | New | STATE STREET COR | STT | 35.4 | 46.220 |
| 17 | FLUOR CORP | FLR | 37.3 | 57.750 | 2 | BEAM INC. | BEAM | 35.3 | 56.780 |
| 11 | CHIPOTLE MEXICAN | CMG | 37.3 | 414.150 | 2 | UNUM GROUP | UNM | 35.3 | 23.740 |
| 6 | TJX COMPANIES, I | TJX | 37.1 | 41.710 | 4 | HESS CORP. | HES | 35.3 | 52.140 |
| 5 | BOSTON PROPERTIE | BXP | 37.1 | 108.250 | New | EBAY | EBAY | 35.1 | 41.020 |

## Earnings Torpedo

## Top S\&P 500 Companies By LOW EPS TORPEDO

Earnings Torpedo: I/B/E/S FY2 estimate less latest actual annual EPS divided by month-end price.


| In |  | EPS Price |  |  |  |  | EPS Price |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn. | Company | Ticker | Torpedo | 04/30/2012 | Scrn. | Company | Ticker | Torpedo | 04/30/2012 |
| 5 | FIRST SOLAR, INC | FSLR | -0.112 | 18.400 | 2 | NEWFIELD EXPLORA | NFX | -0.013 | 35.900 |
| 6 | ALPHA NATURAL RE | ANR | -0.107 | 16.130 | 15 | LEXMARK INTERNAT | LXK | -0.013 | 30.100 |
| 28 | NRG ENERGY, INC. | NRG | -0.080 | 17.000 | 3 | ARCHER DANIELS M | ADM | -0.012 | 30.830 |
| 3 | WPX ENERGY INC | WPX | -0.070 | 17.570 | 15 | PPL CORPORATION | PPL | -0.012 | 27.350 |
| 6 | COMPUTER SCIENCE | CSC | -0.068 | 28.060 | 3 | WINDSTREAM COMMU | WIN | -0.011 | 11.240 |
| 4 | SPRINT | S | -0.067 | 2.480 | 4 | BRISTOL-MYERS SQ | BMY | -0.011 | 33.370 |
| 13 | FOREST LABS | FRX | -0.058 | 34.830 | 4 | PG\&E CORPORATION | PCG | -0.011 | 44.180 |
| 19 | APOLLO GROUP INC | APOL | -0.050 | 35.220 | New | CLIFFS NATURAL R | CLF | -0.010 | 62.260 |
| 7 | DEVRY INC | DV | -0.049 | 32.150 | 27 | PUBLIC SERVICE E | PEG | -0.009 | 31.150 |
| New | SANDISK CORPORAT | SNDK | -0.041 | 37.000 | 4 | FIRSTENERGY | FE | -0.009 | 46.820 |
| 19 | ENTERGY CORPORAT | ETR | -0.035 | 65.560 | 7 | HOSPIRA INC. | HSP | -0.009 | 35.120 |
| 25 | EXELON CORPORATI | EXC | -0.028 | 39.010 | 10 | MICROCHIP TECHNOLOGY INC | MCHP | -0.008 | 35.370 |
| 7 | NETFLIX, INC. | NFLX | -0.026 | 80.140 | 27 | CENTURYLINK INC | CTL | -0.008 | 38.560 |
| 27 | DIAMOND OFFSHORE | DO | -0.025 | 68.550 | New | SOUTHWESTERN ENE | SWN | -0.008 | 31.580 |
| 26 | AMEREN CORP | AEE | -0.021 | 32.790 | 3 | NORTHROP GRUMMAN | NOC | -0.007 | 63.280 |
| 6 | HEWLETT-PACKARD | HPQ | -0.018 | 24.760 | New | CHESAPEAKE ENERG | CHK | -0.007 | 18.440 |
| 3 | PITNEY BOWES INC | PBI | -0.018 | 17.130 | 5 | DISCOVER FINANCI | DFS | -0.007 | 33.900 |
| 2 | CONSOL ENERGY | CNX | -0.018 | 33.240 | 4 | KEYCORP | KEY | -0.007 | 8.040 |
| 16 | ELI LILLY \& CO. | LLY | -0.017 | 41.390 | 3 | ALTERA CORP. | ALTR | -0.005 | 35.570 |
| 8 | CORNING INC. | GLW | -0.017 | 14.350 | New | PEABODY ENERGY | BTU | -0.005 | 31.110 |
| 27 | EDISON INTERNATI | EIX | -0.016 | 44.010 | 2 | CARNIVAL CORPORA | CCL | -0.004 | 32.495 |
| 6 | APPLIED MATERIAL | AMAT | -0.014 | 11.990 | New | CONSTELLATION BR | STZ | -0.004 | 21.600 |
| 10 | LINEAR TECHNOLOGY CORP | LLTC | -0.014 | 32.710 | 3 | NVIDIA CORPORATI | NVDA | -0.003 | 13.000 |
| 3 | MARATHON PETROLE | MPC | -0.014 | 41.610 | 2 | SEMPRA ENERGY | SRE | -0.002 | 64.740 |
| 3 | CF INDUSTRIES | CF | -0.013 | 193.060 | 3 | MERCK \& CO. | MRK | -0.002 | 39.240 |

## Negative Earnings Surprise

Top S\&P 500 Companies By NEGATIVE EPS SURPRISE


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The


| Absolute Returns |  |
| :--- | ---: |
| Last1 M onth | $-1.37 \%$ |
| Last 3 M onth s | $5.02 \%$ |
| Last 6 M onth s | $11.20 \%$ |
| Last12 Months | $0.62 \%$ |
| 2012 YTD | $11.83 \%$ |

screen prior to its introduction and is not intended to be indicative of future performance

## Screen for April

| In |  | ML vs. |  | Price |
| :---: | :---: | :---: | :---: | :---: |
| Scrn. | Company | Ticker | Con | 04/30/2012 |
| 4 | AMERICAN TOWER C | AM T | 10 | 65.580 |
| 8 | BALL CORP. | BLL | 10 | 41.760 |
| 31 | CVS/CAREMARK | CVS | 10 | 44.620 |
| 3 | CAREFUSION | CFN | 10 | 25.910 |
| 2 | COACHINC. | COH | 10 | 73.160 |
| 7 | DAVITA INC. | DVA | 10 | 88.580 |
| 4 | EMERSON | EMR | 10 | 52.540 |
| New | EXPRESS SCRIPTS | ESRX | 10 | 55.790 |
| 7 | GOODRICH CORP. | GR | 10 | 125.460 |
| 3 | H.J. HEINZ COMPA | HNZ | 10 | 53.310 |
| 6 | HEWLETT-PACKARD | HPQ | 10 | 24.760 |
| 7 | HONEYWELL INTERN | HON | 10 | 60.660 |
| 7 | HOSPIRA INC. | HSP | 10 | 35.120 |
| New | International Pa | IP | 10 | 33.310 |
| 4 | KOHL'S | KSS | 10 | 50.130 |
| 7 | L-3 COMMUNICATIO | LLL | 10 | 73.540 |
| 15 | LABORATORY CORPO | LH | 10 | 87.890 |
| 4 | MCDONALD'S CORPO | MCD | 10 | 97.450 |
| 12 | MCKESSON CORPORA | MCK | 10 | 91.410 |
| 2 | MOLSON COORS BRE | TAP | 10 | 41.580 |
| 7 | M YLAN INC. | M Y L | 10 | 21.690 |
| 4 | PRECISION CASTPA | PCP | 10 | 176.370 |
| 78 | QUALCOMM INC. | QCOM | 10 | 63.830 |
| New | ROCKWELL COLLINS | COL | 10 | 55.890 |
| 3 | SEALED AIR CORP. | SEE | 10 | 19.180 |
| 4 | ST JUDE MEDICAL | STJ | 10 | 38.720 |
| 5 | STAPLES, INC. | SPLS | 10 | 15.400 |
| New | SUNTRUST BANKS, | STI | 10 | 24.280 |
| 3 | SUNOCOINC. | SUN | 10 | 49.290 |
| 5 | the coca cola co | KO | 10 | 76.320 |
| New | TYCO INTERNATION | TYC | 10 | 56.130 |
| 7 | us steel | X | 10 | 28.330 |



## One-Year Return on Equity

## Top 50 S\&P 500 Companies By ROE (1-Yr Average)

Return on Equity One-Year Average: Net income divided by average equity provided.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end April 1997. The unshaded portion represents actual performance since May 1997. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

## Screen for April

| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  |  |  | Price |
| Scrn. | Company | Ticker | ROE | $\mathbf{0 4 / 3 0 / 2 0 1 2}$ |
|  |  |  |  |  |
| 39 | PHILIP MORRIS IN | PM | 430.5 | 89.510 |
| 34 | THE WESTERN UNIO | WU | 192.8 | 18.380 |
| 2 | LIMITED BRANDS I | LTD | 105.4 | 49.700 |
| 169 | COLGATE-PALMOLIV | CL | 104.0 | 98.940 |
| 61 | LOCKHEED MARTIN | LMT | 103.5 | 90.540 |
| 28 | BOEING CO. | BA | 97.3 | 76.800 |
| 16 | LINEAR TECHNOLOGY CORP | LLTC | 84.3 | 32.710 |
| 117 | YUM! BRANDS, INC | YUM | 77.1 | 72.730 |
| 6 | THE HERSHEY COMP | HSY | 75.8 | 67.010 |
| 37 | ALTRIA GROUP, IN | MO | 74.9 | 32.210 |
| 3 | MARRIOTT INTERNA | MAR | 74.7 | 39.090 |
| 58 | INTL BUSINESS MA | IBM | 74.0 | 207.080 |
| 111 | CAMPBELL SOUP | CPB | 72.6 | 33.830 |
| 4 | VERISIGN | VRSN | 68.5 | 41.110 |
| 10 | ACCENTURE PLC | ACN | 62.7 | 64.950 |
| 147 | KELLOGG CO | K | 56.0 | 50.570 |
| 92 | COACH INC. | COH | 53.8 | 73.160 |
| 7 | APOLLO GROUP INC | APOL | 51.1 | 35.220 |
| 5 | BLOCK H \& R INC | HRB | 50.5 | 14.700 |
| 51 | TJX COMPANIES, I | TJX | 47.4 | 41.710 |
| 12 | PRICELINE.COM | PCLN | 47.3 | 760.820 |
| 28 | APPLE INC | AAPL | 47.1 | 583.980 |
| 2 | ROSS STORES INC | ROST | 46.5 | 61.500 |
| 2 | TRIPADVISOR LLC | TRIP | 42.7 | 37.510 |
| 61 | THE MCGRAW-HILL | MHP | 42.5 | 49.170 |

# Five-Year Return on Equity 

Top 50 S\&P 500 Companies By ROE (5-Yr Average)
Return on Equity Five-year Average: Five-year average return on equity.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end April 1997. The

unshaded portion represents actual performance since May 1997. Back tested performance is hypothetical in nature and reflects application of the
screen prior to its introduction and is not intended to be indicative of future performance
Screen for April

| Mo. |  | $5-\mathrm{Yr}$ |  |  | Mo. |  | $5-\mathrm{Yr}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Avg | Price | In |  |  | Avg | Price |
| Scrn | Company | Ticker | ROE | 04/30/2012 | Scrn | Company | Ticker | ROE | 04/30/2012 |
| 47 | LORILLARD, INC. | LO | 200.7 | 135.290 | 50 | THE MCGRAW-HILL | M HP | 47.0 | 49.170 |
| 66 | AUTOZONE INC. | AZO | 169.6 | 396.160 | 121 | WATERS CORPORATI | WAT | 45.7 | 84.110 |
| 50 | PHILIP MORRIS IN | PM | 162.8 | 89.510 | 92 | COACH INC. | COH | 45.6 | 73.160 |
| 39 | BOEING CO. | BA | 142.2 | 76.800 | 33 | MICROSOFT CORP | MSFT | 43.8 | 32.015 |
| 33 | LINEAR TECHNOLOGY CORP | LLTC | 136.0 | 32.710 | 132 | TJX COMPANIES, I | TJX | 43.7 | 41.710 |
| 59 | YUM! BRANDS, INC | YUM | 131.6 | 72.730 | 2 | TRIPADVISOR LLC | TRIP | 42.7 | 37.510 |
| 59 | PITNEY BOWES INC | PBI | 125.2 | 17.130 | 59 | ROCKWELL COLLINS | COL | 42.6 | 55.890 |
| 112 | COLGATE-PALMOLIV | CL | 90.1 | 98.940 | 2 | LIMITED BRANDS I | LTD | 42.0 | 49.700 |
| 50 | WINDSTREAM COMMU | WIN | 90.1 | 11.240 | 3 | TENET HEALTHCARE | THC | 41.1 | 5.190 |
| 59 | CAMPBELL SOUP | CPB | 71.7 | 33.830 | 3 | NETFLIX, INC. | NFLX | 38.8 | 80.140 |
| 27 | LOCKHEED MARTIN | LMT | 70.9 | 90.540 | 14 | ROSS STORES INC | ROST | 38.2 | 61.500 |
| 29 | MEAD JOHNSON | MJN | 69.5 | 85.560 | 30 | PRICELINE.COM | PCLN | 38.1 | 760.820 |
| 134 | AVON PRODUCTS | AVP | 66.8 | 21.600 | 109 | FEDERATED INVEST | FII | 37.9 | 22.080 |
| 10 | ACCENTURE PLC | ACN | 65.0 | 64.950 | 27 | NORDSTROM | JWN | 35.6 | 55.860 |
| 62 | THE HERSHEY COMP | HSY | 64.1 | 67.010 | 34 | PAYCHEX | PAYX | 35.5 | 30.980 |
| 26 | ALTRIA GROUP, IN | MO | 62.8 | 32.210 | 98 | PEPSICO, INC. | PEP | 35.0 | 66.000 |
| 38 | INTL BUSINESS MA | IBM | 61.6 | 207.080 | 15 | FMC TECHNOLOGIES | FTI | 34.8 | 47.000 |
| 15 | DIRECTV GROUP IN | DTV | 58.8 | 49.280 | 51 | CATERPILLAR INC | CAT | 34.8 | 102.770 |
| 59 | KELLOGG CO | K | 58.0 | 50.570 | 26 | KIMBERLY-CLARK C | KMB | 34.2 | 78.470 |
| 120 | APOLLO GROUP INC | APOL | 56.0 | 35.220 | 15 | ALTERA CORP. | ALTR | 33.7 | 35.570 |
| New | EXPRESS SCRIPTS | ESRX | 53.0 | 55.790 | 14 | C.H. ROBINSON WO | CHRW | 33.6 | 59.740 |
| 14 | GILEAD SCIENCES | GILD | 51.2 | 52.020 | 11 | BLOCK H\&RINC | HRB | 33.0 | 14.700 |
| 59 | H.J. HEINZ COMPA | HNZ | 48.8 | 53.310 | 3 | CF INDUSTRIES | CF | 32.8 | 193.060 |
| 106 | DELL INC. | DELL | 48.5 | 16.370 | 7 | APPLE INC | AAPL | 32.8 | 583.980 |
| 15 | JOY GLOBAL INC | JOY | 48.3 | 70.770 | 27 | DIAMOND OFFSHORE | DO | 32.6 | 68.550 |

# One-Year Return on Equity (Adjusted for Debt) 

Top 50 S\&P 500 Companies By ROE (1-Yr Avg. Adj. for Debt)
Return on Equity One-Year Average (Adjusted for Debt): The ROE of companies with higher debt levels are considered lower than those of companies with lower debt levels based on their debt-to-equity ratios.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end April 1997. The
 unshaded portion represents actual performance since May 1997. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for April

| Mo. <br> In |  | Debt Adj |  | Price | Mo. |  | Debt Adj |  | Price |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn. | Company | Ticker | ROE | 04/30/2012 | Scrn. | Company | Ticker | ROE | 04/30/2012 |
| 5 | ACCENTURE PLC | ACN | 62.6 | 64.950 | 12 | TERADATA CORPORA | TDC | 21.2 | 69.780 |
| 92 | COACH INC. | COH | 53.1 | 73.160 | 13 | ROCKWELL AUTOMAT | ROK | 20.9 | 77.340 |
| 58 | APOLLO GROUP INC | APOL | 46.7 | 35.220 | 4 | ROBERT HALF INTL | RHI | 20.7 | 29.800 |
| 2 | ROSS STORES INC | ROST | 41.8 | 61.500 | 22 | TERADYNE INC. | TER | 20.2 | 17.210 |
| 161 | TJX COMPANIES, I | TJX | 35.8 | 41.710 | 22 | FREEPORT-MCMORAN | FCX | 20.0 | 38.300 |
| 34 | MASTERCARD, INC | MA | 34.4 | 452.270 | 9 | ESTEE LAUDER | EL | 19.9 | 65.350 |
| 22 | CUMMINS INC | CMI | 32.0 | 115.830 | 13 | KLA-TENCOR CORP. | KLAC | 19.7 | 52.135 |
| 34 | MICROSOFT CORP | MSFT | 31.6 | 32.015 | 4 | FAMILY DOLLAR ST | FDO | 19.5 | 67.550 |
| 63 | VARIAN MEDICAL SYSTEMS INC | VAR | 29.5 | 63.420 | 12 | 3M COMPANY | MMM | 19.0 | 89.360 |
| 5 | DOLLAR TREE, INC | DLTR | 28.4 | 101.660 | 3 | ELI LILLY \& CO. | LLY | 19.0 | 41.390 |
| New | FOSSIL INC | FOSL | 27.3 | 130.670 | 10 | GOOGLE INC | GOOG | 18.6 | 604.850 |
| 22 | GRAINGER (W.W.) | GWW | 25.1 | 207.820 | 45 | SIGMA-ALDRICH CO | SIAL | 17.9 | 70.900 |
| 2 | BLOCK H \& R INC | HRB | 24.9 | 14.700 | 4 | EBAY | EBAY | 17.6 | 41.020 |
| 12 | INTUIT INC. | INTU | 23.6 | 57.970 | 18 | MICROCHIP TECHNOLOGY INC | MCHP | 17.6 | 35.370 |
| 3 | EXXONMOBIL CORP. | XOM | 23.2 | 86.340 | 3 | MARATHON PETROLE | MPC | 17.6 | 41.610 |
| 6 | CF INDUSTRIES | CF | 23.1 | 193.060 | 6 | FRANKLIN RESOURC | BEN | 17.6 | 125.510 |
| 38 | BMC SOFTWARE INC | BMC | 22.9 | 41.260 | 9 | POLO RALPH LAURE | RL | 17.6 | 172.270 |
| 13 | CHIPOTLE MEXICAN | CMG | 22.7 | 414.150 | New | THE SHERWIN-WILL | SHW | 17.5 | 120.280 |
| 27 | THE MCGRAW-HILL | M HP | 22.6 | 49.170 | 3 | ROCKWELL COLLINS | COL | 17.4 | 55.890 |
| 22 | INTEL CORPORATIO | INTC | 22.6 | 28.395 | 7 | BIOGEN IDEC | BIIB | 17.4 | 134.010 |
| 51 | AUTOMATIC DATA P | ADP | 22.4 | 55.620 | 10 | QUALCOMM INC. | QCOM | 17.3 | 63.830 |
| 11 | BROWN-FORMAN -CL B | BF.B | 22.1 | 86.350 | New | TOTAL SYSTEM SER | TSS | 16.9 | 23.520 |
| 61 | NIKE | NKE | 22.1 | 111.870 | 21 | ANALOG DEVICES I | ADI | 16.9 | 38.980 |
| 2 | BIG LOTS INC | BIG | 21.5 | 36.640 | 7 | GENUINE PARTS CO | GPC | 16.8 | 64.780 |
| 16 | CHEVRON CORP. | CVX | 21.3 | 106.560 | New | MATTEL INC | MAT | 16.6 | 33.600 |

# Five-Year Return on Equity (Adjusted by Debt) 

Top 50 S\&P 500 Companies By ROE (5-Yr Avg. Adj. for Debt)
Return on Equity Five-year Average (Adjusted for Debt): The average five year ROE of companies with higher debt levels are considered lower than those of companies with lower debt levels based on their debt-to-equity ratios.


| Mo. |  | Debt |  |  | Mo. |  | Debt |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  | Adj 5Yr Price |  |  | In |  | Adj 5Yr Price |  |  |
| Scrn. | Company | Ticker | ROE | 04/30/2012 | Scrn. | Company | Ticker | ROE | 04/30/2012 |
| 5 | ACCENTURE PLC | ACN | 65.0 | 64.950 | 21 | STARBUCKS CORP | SBUX | 20.6 | 57.370 |
| 58 | APOLLO GROUP INC | APOL | 51.2 | 35.220 | 5 | DOLLAR TREE, INC | DLTR | 20.4 | 101.660 |
| 92 | COACH INC. | COH | 45.1 | 73.160 | 27 | CORNING INC. | GLW | 20.4 | 14.350 |
| 34 | MICROSOFT CORP | MSFT | 36.2 | 32.015 | 62 | CHEVRON CORP. | CVX | 20.2 | 106.560 |
| 29 | ROSS STORES INC | ROST | 34.4 | 61.500 | 26 | TOTAL SYSTEM SER | TSS | 20.0 | 23.520 |
| 66 | TJX COMPANIES, I | TJX | 33.0 | 41.710 | 15 | FLOWSERVE CORP | FLS | 19.8 | 114.930 |
| 27 | MASTERCARD, INC | MA | 32.1 | 452.270 | 2 | BIG LOTS INC | BIG | 19.8 | 36.640 |
| 63 | VARIAN MEDICAL SYSTEMS INC | VAR | 30.0 | 63.420 | 11 | BROWN-FORMAN -CL B | BF.B | 19.5 | 86.350 |
| 49 | AMAZON.COM | AMZN | 28.4 | 231.900 | 179 | JOHNSON \& JOHNSO | JNJ | 19.2 | 65.100 |
| 99 | EXXONMOBIL CORP. | XOM | 25.4 | 86.340 | 179 | SIGMA-ALDRICH CO | SIAL | 18.9 | 70.900 |
| 19 | THE MCGRAW-HILL | M HP | 25.0 | 49.170 | 15 | FMC TECHNOLOGIES | FTI | 18.9 | 47.000 |
| 12 | TERADATA CORPORA | TDC | 24.7 | 69.780 | 7 | FLIR SYSTEMS INC | FLIR | 18.6 | 22.460 |
| 33 | 3M COMPANY | MMM | 22.5 | 89.360 | 10 | GOOGLE INC | GOOG | 18.5 | 604.850 |
| 59 | AUTOMATIC DATA P | ADP | 22.0 | 55.620 | 3 | CHIPOTLE MEXICAN | CMG | 18.5 | 414.150 |
| 27 | DIAMOND OFFSHORE | DO | 21.5 | 68.550 | 51 | SCHLUMBERGER LIM | SLB | 18.4 | 74.140 |
| 19 | BMC SOFTWARE INC | BMC | 21.4 | 41.260 | 50 | FLUOR CORP | FLR | 18.1 | 57.750 |
| 43 | PRECISION CASTPA | PCP | 21.2 | 176.370 | New | ROCKWELL COLLINS | COL | 17.8 | 55.890 |
| 10 | GRAINGER (W.W.) | GWW | 21.2 | 207.820 | 3 | JOY GLOBAL INC | JOY | 17.6 | 70.770 |
| 110 | NIKE | NKE | 21.2 | 111.870 | 2 | ELI LILLY \& CO. | LLY | 17.4 | 41.390 |
| 3 | CF INDUSTRIES | CF | 21.1 | 193.060 | New | FEDERATED INVEST | FII | 17.4 | 22.080 |
| 57 | CUMMINS INC | CMI | 21.1 | 115.830 | 6 | MICROCHIP TECHNOLOGY INC | MCHP | 17.4 | 35.370 |
| 34 | WESTERN DIGITAL | WDC | 20.9 | 38.810 | New | ROCKWELL AUTOMAT | ROK | 17.1 | 77.340 |
| 8 | THE MOSAIC COMPA | MOS | 20.9 | 52.820 | 15 | THE SHERWIN-WILL | SHW | 17.0 | 120.280 |
| 16 | WATERS CORPORATI | WAT | 20.9 | 84.110 | 51 | ROBERT HALF INTL | RHI | 16.9 | 29.800 |
| New | FOSSIL INC | FOSL | 20.7 | 130.670 | 3 | QUALCOMM INC. | QCOM | 16.8 | 63.830 |

## Return on Assets

## Top 50 S\&P 500 Companies by ROA.

Return on Assets: Net income plus interest and taxes as a percent of average total assets.
 unshaded portion represents actual performance since May 1997. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for April

Mo.

| In |  | Price |  |  | In |  | Ticker | Price |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn. | Company | Ticker | ROA | 04/30/2012 | Scrn | Company |  | ROA | 04/30/2012 |
| 92 | COACH INC. | COH | 34.7 | 73.160 | 13 | CHIPOTLE MEXICAN | CMG | 17.2 | 414.150 |
| 47 | LORILLARD, INC. | LO | 31.4 | 135.290 | 4 | YUM! BRANDS, INC | YUM | 17.0 | 72.730 |
| 28 | APPLE INC | AAPL | 31.4 | 583.980 | 10 | ACCENTURE PLC | ACN | 17.0 | 64.950 |
| 30 | PRICELINE.COM | PCLN | 30.7 | 760.820 | 7 | CUMMINS INC | CMI | 16.7 | 115.830 |
| 103 | LINEAR TECHNOLOGY CORP | LLTC | 27.4 | 32.710 | 60 | WATERS CORPORATI | WAT | 16.2 | 84.110 |
| 39 | PHILIP MORRIS IN | PM | 24.6 | 89.510 | 7 | F5 NETWORKS, INC | FFIV | 16.1 | 133.930 |
| 2 | TRIPADVISOR LLC | TRIP | 22.8 | 37.510 | 13 | KLA-TENCOR CORP. | KLAC | 16.1 | 52.135 |
| 44 | FASTENAL CO | FAST | 22.7 | 46.820 | 11 | BROWN-FORMAN -CL B | BF.B | 16.0 | 86.350 |
| 82 | MICROSOFT CORP | MSFT | 21.4 | 32.015 | 21 | ANALOG DEVICES I | ADI | 15.9 | 38.980 |
| 129 | MOODY'S CORPORAT | MCO | 21.4 | 40.950 | 46 | VARIAN MEDICAL SYSTEMS INC | VAR | 15.9 | 63.420 |
| 7 | APOLLO GROUP INC | APOL | 21.1 | 35.220 | 4 | GRAINGER (W.W.) | GWW | 15.8 | 207.820 |
| 63 | C.H. ROBINSON WO | CHRW | 20.9 | 59.740 | 25 | ALTERA CORP. | ALTR | 15.8 | 35.570 |
| 5 | DOLLAR TREE, INC | DLTR | 20.7 | 101.660 | 36 | GOOGLE INC | GOOG | 15.8 | 604.850 |
| 2 | ROSS STORES INC | ROST | 20.5 | 61.500 | 52 | GILEAD SCIENCES | GILD | 15.8 | 52.020 |
| 29 | MEAD JOHNSON | MJN | 19.8 | 85.560 | 9 | TERADATA CORPORA | TDC | 15.7 | 69.780 |
| 30 | MASTERCARD, INC | MA | 19.5 | 452.270 | 4 | NIKE | NKE | 15.5 | 111.870 |
| 28 | T. ROWE PRICE GR | TROW | 19.5 | 63.115 | 4 | TERADYNE INC. | TER | 15.2 | 17.210 |
| 64 | COLGATE-PALMOLIV | CL | 19.4 | 98.940 | New | THE HERSHEY COMP | HSY | 15.1 | 67.010 |
| New | FOSSIL INC | FOSL | 18.9 | 130.670 | 4 | AUTOZONE INC. | AZO | 15.0 | 396.160 |
| 37 | TJX COMPANIES, I | TJX | 18.4 | 41.710 | 6 | FRANKLIN RESOURC | BEN | 14.8 | 125.510 |
| 22 | INTEL CORPORATIO | INTC | 18.2 | 28.395 | New | CELGENE CORP | CELG | 14.5 | 72.925 |
| 47 | INTUITIVE SURGIC | ISRG | 18.1 | 578.200 | New | MATTEL INC | MAT | 14.4 | 33.600 |
| 66 | COGNIZANT TECHNO | CTSH | 17.5 | 73.330 | New | BIOGEN IDEC | BIIB | 14.4 | 134.010 |
| 8 | BED BATH \& BEYON | BBBY | 17.4 | 70.390 | New | DIRECTV GROUP IN | DTV | 14.4 | 49.280 |
| 3 | CF INDUSTRIES | CF | 17.4 | 193.060 | New | HALLIBURTON COMP | HAL | 14.3 | 34.220 |

## Return on Capital

## Top 50 S\&P 500 Companies By ROC

Return on Capital: The sum of net income, interest expense and minority interest, as a percent of average total invested capital which is inclusive of long-term debt, preferred stock, common equity, and minority interest.

unshaded portion represents actual performance since May 1997. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

## Screen for April

| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  | Ret on | Price |  |
| Scrn. | Company | Ticker | Cap | 04/30/2012 |
|  |  |  |  |  |
| 6 | DUN \& BRADSTREET CORP | DNB | $110 \%$ | 77.780 |
| 47 | LORILLARD, INC. | LO | $110 \%$ | 135.290 |
| 10 | ACCENTURE PLC | ACN | $65 \%$ | 64.950 |
| 50 | PHILIP MORRIS IN | PM | $62 \%$ | 89.510 |
| 22 | MOODY'S CORPORAT | MCO | $61 \%$ | 40.950 |
| 92 | COACH INC. | COH | $53 \%$ | 73.160 |
| 43 | AUTOZONE INC. | AZO | $49 \%$ | 396.160 |
| 9 | APOLLO GROUP INC | APOL | $47 \%$ | 35.220 |
| 31 | APPLE INC | AAPL | $47 \%$ | 583.980 |
| 30 | PRICELINE.COM | PCLN | $44 \%$ | 760.820 |
| 26 | MEAD JOHNSON | MJN | $43 \%$ | 85.560 |
| New | CHEVRON CORP. | CVX | $42 \%$ | 106.560 |
| 29 | ROSS STORES INC | ROST | $42 \%$ | 61.500 |
| 138 | COLGATE-PALMOLIV | CL | $41 \%$ | 98.940 |
| 46 | TJX COMPANIES, I | TJX | $39 \%$ | 41.710 |
| 47 | INTL BUSINESS MA | IBM | $37 \%$ | 207.080 |
| 46 | LINEAR TECHNOLOGY CORP | LLTC | $37 \%$ | 32.710 |
| 42 | LOCKHEED MARTIN | LMT | $37 \%$ | 90.540 |
| 3 | FORD MOTOR CO | F | $36 \%$ | 11.280 |
| 63 | C.H. ROBINSON WO | CHRW | $35 \%$ | 59.740 |
| 57 | PAYCHEX | PAYX | $35 \%$ | 30.980 |
| 67 | THE WESTERN UNIO | WU | $35 \%$ | 18.380 |
| 3 | VERISIGN | VRSN | $35 \%$ | 41.110 |
| New | AFLAC INC | AFL | $34 \%$ | 45.040 |
| 19 | BOEING CO. | BA | $34 \%$ | 76.800 |

Mo.
In Ret on Price

| Scrn. | Company | Ticker | Cap | $04 / 30 / 2012$ |
| :--- | :--- | :--- | :--- | ---: |
|  |  |  |  |  |
| New | CELGENE CORP | CELG | $34 \%$ | 72.925 |
| 13 | CUMMINS INC | CMI | $34 \%$ | 115.830 |
| 34 | MASTERCARD, INC | MA | $34 \%$ | 452.270 |
| 50 | YUM! BRANDS, INC | YUM | $34 \%$ | 72.730 |
| 5 | TRIPADVISOR LLC | TRIP | $33 \%$ | 37.510 |
| 3 | CLOROX CO. | CLI | $32 \%$ | 70.100 |
| New | GILEAD SCIENCES | GILD | $32 \%$ | 52.020 |
| 76 | MICROSOFT CORP | MSFT | $32 \%$ | 32.015 |
| 5 | BLOCK H \& R INC | HRB | $31 \%$ | 14.700 |
| 9 | DIRECTV GROUP IN | DTV | $31 \%$ | 49.280 |
| 98 | THE MCGRAW-HLL | MHP | $31 \%$ | 49.170 |
| 4 | CF INDUSTRIES | CF | $30 \%$ | 193.060 |
| 110 | ROCKWELL COLLINS | COL | $30 \%$ | 55.890 |
| 5 | DOLLAR TREE, INC | DLTR | $29 \%$ | 101.660 |
| 63 | VARIAN MEDICAL SYSTEMS INC | VAR | $29 \%$ | 63.420 |
| 2 | CAMPBELL SOUP | CPB | $28 \%$ | 33.830 |
| New | FOSSIL INC | FOSL | $28 \%$ | 130.670 |
| 5 | LIMITED BRANDS I | LTD | $28 \%$ | 49.700 |
| New | ALTRIA GROUP, IN | MO | $27 \%$ | 32.210 |
| 10 | ROCKWELL AUTOMAT | ROK | $27 \%$ | 77.340 |
| 2 | DELL INC. | DELL | $26 \%$ | 16.370 |
| 4 | FASTENAL CO | FAST | $26 \%$ | 46.820 |
| 27 | FREEPORT-MCMORAN | FCX | $26 \%$ | 38.300 |
| 15 | JOY GLOBAL INC | JOY | $26 \%$ | 70.770 |
| 9 | THE HERSHEY COMP | HSY | $26 \%$ | 67.010 |

Beta

## Top 50 S\&P 500 Companies By BETA

Beta: A measure of non-diversifiable risk. It is calculated using a regression incorporating 60 months of price performance versus that of the S\&P 500.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The
 nshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for April

| Mo. |  |  |  |  |
| :--- | :--- | :--- | :--- | ---: |
| In |  |  |  | Price |
| Scrn. Company | Ticker | Beta | 04/30/2012 |  |
|  |  |  |  |  |
| 28 | AMERICAN INTERNA | AIG | 2.63 | 34.030 |
| 42 | GENWORTH FINANCI | GNW | 2.38 | 6.010 |
| 43 | HARTFORD FINANCI | HIG | 2.32 | 20.550 |
| 42 | WYNDHAM WORLDWIDE CORP | WYN | 2.32 | 50.340 |
| 42 | PRINCIPAL FINANC | PFG | 2.17 | 27.670 |
| 55 | GOODYEAR TIRE \& | GT | 2.11 | 10.980 |
| 47 | TEXTRON | TXT | 2.09 | 26.640 |
| 43 | LINCOLN NATIONAL | LNC | 2.07 | 24.770 |
| 12 | CITIGROUP INC | C | 2.05 | 33.045 |
| 7 | CB RICHARD ELLIS | CBG | 2.02 | 18.810 |
| 37 | GANNETT CO | GCI | 1.98 | 13.820 |
| 21 | XL GROUP PLC | XL | 1.97 | 21.510 |
| 29 | CLIFFS NATURAL R | CLF | 1.96 | 62.260 |
| 76 | US STEEL | JDSU | 1.93 | 28.330 |
| 41 | JDS UNIPHASE CORP | F | 1.92 | 12.170 |
| 37 | FORD MOTOR CO | WYNN | 1.91 | 11.283 |
| 42 | WYNN RESORTS LTD | DOW | 1.89 | 33.800 |
| 37 | DOW CHEMICAL | PRU | 1.89 | 60.540 |
| 43 | PRUDENTIAL FINAN | HST | 1.88 | 16.640 |
| 37 | HOST HOTELS \& RE | BAC | 1.87 | 8.110 |
| 38 | BANK OF AMERICA CORP | AMD | 1.83 | 7.360 |
| 121 | ADVANCED MICRO D | CBS | 1.83 | 33.380 |
| 34 | CBS CORP CL-B | IP | 1.81 | 33.310 |
| 37 | INTERNATIONAL PA | MAS | 1.81 | 13.180 |
| 38 | MASCO CORP |  |  |  |

## Variability of Earnings

Top S\&P 500 Companies By HIGH VARIABILITY OF EPS
Variability of EPS: The degree of variability in quarterly EPS over the past 5 years. Stocks are ranked from 10 to 1 with 10 being the most variable.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The

Sector Concentration | Other |
| :---: |
| Industrials |
| Energy |
| $11 \%$ |
| Info Tech |
| $13 \%$ |

| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $-1.33 \%$ |
| Last 3 M onth s | $3.23 \%$ |
| Last 6 M onth s | $6.75 \%$ |
| Last 12 Months | $-8.67 \%$ |
| 2012 Y T D | $10.75 \%$ | screen prior to its introduction and is not intended to be indicative of future performance

## Screen for April

| M 0 . |  |  |  |  | M 0 . |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  |  | EPS | Price | In |  |  | EPS | Price |
| Scrn | Company | Ticker | R isk | 04/30/2012 | Scrn | Company | Ticker | Risk | 04/30/2012 |
| 50 | AES CORPORATION | AES | 10 | 12.520 | 6 | AMEREN CORP | AEE | 9 | 32.790 |
| 43 | ALLEGHENY TECHNO | ATI | 10 | 42.940 | 27 | AM ERIPRISE FINANCIAL INC | AMP | 9 | 54.210 |
| 5 | BORGWARNER INC. | BWA | 10 | 79.040 | 11 | ALPHA NATURALRE | ANR | 9 | 16.130 |
| 43 | BOSTON PROPERTIE | BXP | 10 | 108.250 | 11 | AUTODESK INC. | ADSK | 9 | 39.370 |
| 37 | BROADCOM CORP. | BRCM | 10 | 36.600 | 7 | BEAM INC. | BEAM | 9 | 56.780 |
| 40 | CAPITAL ONE FINA | COF | 10 | 55.480 | 7 | CB RICHARD ELLIS | CBG | 9 | 18.810 |
| 20 | DOW CHEMICAL | DOW | 10 | 33.880 | 6 | CBS CORPCL-B | CBS | 9 | 33.380 |
| 35 | FEDEX CORPORATIO | FDX | 10 | 88.240 | 39 | CFINDUSTRIES | C F | 9 | 193.060 |
| 25 | HARLEY-DAVIDSON INC | HOG | 10 | 52.330 | 22 | CARMAX, INC. | KMX | 9 | 30.870 |
| 7 | INTERNATIONAL PA | IP | 10 | 33.310 | 7 | CLIFFS NATURALR | CLF | 9 | 62.260 |
| 40 | J.P. MORGAN CHAS | JPM | 10 | 42.980 | 24 | DENBURY RESOURCES INC | DNR | 9 | 19.040 |
| 28 | LIFE TECHNOLOGIE | LIFE | 10 | 46.360 | 15 | EOG RESOURCES IN | EOG | 9 | 109.810 |
| 47 | MORGAN STANLEY | M S | 10 | 17.280 | 19 | FIRST SOLAR, INC | FSLR | 9 | 18.400 |
| 24 | MARSH \& MCLENNAN | M M C | 10 | 33.450 | 13 | HESS CORP. | HES | 9 | 52.140 |
| 55 | MEADWESTVACO COR | M WV | 10 | 28.340 | 13 | INTERPUBLIC GROU | IPG | 9 | 11.810 |
| 34 | METLIFE INC. | MET | 10 | 36.030 | 40 | JOHNSON CONTROLS | JCI | 9 | 31.970 |
| 34 | NABORS INDUSTRIES LTD | NBR | 10 | 16.650 | 49 | LEGGETT \& PLATT INC | LEG | 9 | 21.770 |
| 46 | NEWMONT MINING C | NEM | 10 | 47.650 | 30 | LIMITED BRANDS I | LTD | 9 | 49.700 |
| 13 | PACCAR INC | PCAR | 10 | 42.950 | 15 | MERCK \& CO. | M R K | 9 | 39.240 |
| 3 | PERKINELMER, INC | PKI | 10 | 27.600 | 20 | NRG ENERGY, INC. | NRG | 9 | 17.000 |
| 43 | PROGRESSIVE CORP | PGR | 10 | 21.300 | 20 | NETAPP | NTAP | 9 | 38.825 |
| 55 | PUBLIC STORAGE, | PSA | 10 | 143.260 | 22 | NUCOR | NUE | 9 | 39.210 |
| 3 | RANGERESOURCES | RRC | 10 | 66.660 | 16 | OWENS-ILLINOIS I | O1 | 9 | 23.250 |
| 44 | SALESFORCE.COM, | CRM | 10 | 155.730 | 7 | ROBERT HALF INTL | R HI | 9 | 29.800 |
| 37 | SOUTHWESTERN ENE | SWN | 10 | 31.580 | 22 | STARBUCKS CORP | SBUX | 9 | 57.370 |
| 25 | STARWOOD HOTELS | HOT | 10 | 59.200 | 37 | SOUTHWEST AIRLIN | LUV | 9 | 8.280 |
| 79 | THE KROGER CO. | KR | 10 | 23.270 | 43 | THE ALLSTATE COR | ALL | 9 | 33.330 |
| 52 | UPS | UPS | 10 | 78.140 | 8 | THE MOSAIC COMPA | MOS | 9 | 52.820 |
| 36 | WASHINGTON POST -CLB | WPO | 10 | 378.170 | 2 | TITANIUM METALS | TIE | 9 | 14.770 |
| 15 | WYNN RESORTS LTD | WYNN | 10 | 133.400 | 33 | VERISIGN | VRSN | 9 | 41.110 |
| 33 | YAHOO! | YHOO | 10 | 15.540 | 15 | VORNADO REALTY T | VNO | 9 | 85.840 |
|  |  |  |  |  | 55 | EBAY | EBAY | 9 | 41.020 |

## Estimate Dispersion

Top S\&P 500 Companies By EPS ESTIMATE DISPERSION
EPS Estimate Dispersion: The coefficient of variation among I/B/E/S FY2 ESTIMATES. Presented as a decile rank



| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $-1.83 \%$ |
| Last 3 M onths | $1.05 \%$ |
| Last 6 M onths | $8.68 \%$ |
| Last 12 Months | $-12.86 \%$ |
| 2012 YTD | $12.22 \%$ |

Source: BofA Merrill Lynch US Quantitative Strategy
The performance chart represents actual returns since July 1989. There is no back tested performance.
Screen for April

| Mo. |  |  |  |  | Mo. |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  |  | EPS Est. Price |  | In |  |  | EPS Est. Price |  |
| Scrn | Company | Ticker | Dispers. | 04/30/2012 | Scrn. | Company | Ticker | Dispers. | 04/30/2012 |
| 9 | ALPHA NATURAL RE | ANR | 10 | 16.130 | New | COMPUTER SCIENCE | CSC | 9 | 28.060 |
| 10 | AMAZON.COM | AMZN | 10 | 231.900 | New | CROWN CASTLE INT | CCl | 9 | 56.610 |
| 5 | CABLEVISION SYST | CVC | 10 | 14.820 | New | DENBURY RESOURCES INC | DNR | 9 | 19.040 |
| 3 | EL PASO CORP | EP | 10 | 29.670 | 71 | DR HORTON INCORP | DHI | 9 | 16.350 |
| 23 | FRONTIER COMMUNI | FTR | 10 | 4.025 | New | DEVON ENERGY | DVN | 9 | 69.850 |
| New | METROPCS COMMUNI | PCS | 10 | 7.300 | 33 | EOG RESOURCES IN | EOG | 9 | 109.810 |
| 157 | MICRON TECHNOLOG | MU | 10 | 6.590 | 4 | EQT CORPORATION | EQT | 9 | 49.820 |
| 16 | MOTOROLA MOBILIT | MMI | 10 | 38.820 | 3 | FIRST SOLAR, INC | FSLR | 9 | 18.400 |
| 27 | NRG ENERGY, INC. | NRG | 10 | 17.000 | 13 | HESS CORP. | HES | 9 | 52.140 |
| 7 | NETFLIX, INC. | NFLX | 10 | 80.140 | 68 | LENNAR CORPORATI | LEN | 9 | 27.740 |
| 38 | RANGE RESOURCES | RRC | 10 | 66.660 | 13 | MASCO CORP | MAS | 9 | 13.180 |
| 48 | SEARS HOLDINGS CORP | SHLD | 10 | 53.780 | 4 | MURPHY OIL CORP | MUR | 9 | 54.970 |
| New | SANDISK CORPORAT | SNDK | 10 | 37.000 | New | MARATHON OIL COR | MRO | 9 | 29.340 |
| 52 | SPRINT | S | 10 | 2.480 | 6 | MARATHON PETROLE | MPC | 9 | 41.610 |
| 15 | SUNOCOINC. | SUN | 10 | 49.290 | 12 | NEWFIELD EXPLORA | NFX | 9 | 35.900 |
| 10 | TESORO CORP. | TSO | 10 | 23.250 | 15 | NEWMONT MINING C | NEM | 9 | 47.650 |
| 36 | VULCAN MATERIALS CO | VMC | 10 | 42.810 | 3 | NOBLE ENERGY | NBL | 9 | 99.320 |
| 4 | WPX ENERGY INC | WPX | 10 | 17.570 | 14 | NOVELLUS | NVLS | 9 | 46.800 |
| 88 | ALCOA INC. | AA | 9 | 9.730 | 3 | PIONEER NATURAL | PXD | 9 | 115.820 |
| 75 | ANADARKO PETROLE | APC | 9 | 73.210 | 74 | PULTEGROUP INCOR | PHM | 9 | 9.840 |
| 18 | APPLIED MATERIAL | AMAT | 9 | 11.990 | 3 | QEP RESOURCES INC | QEP | 9 | 30.810 |
| 2 | CENTURYLINK INC | CTL | 9 | 38.560 | 15 | SOUTHWEST AIRLIN | LUV | 9 | 8.280 |
| 3 | CINCINNATIFINANCIAL CORP | CINF | 9 | 35.650 | 2 | STERICYCLE | SRCL | 9 | 86.600 |
| New | CONOCOPHILLIPS | COP | 9 | 54.605 | 4 | TITANIUM METALS | TIE | 9 | 14.770 |
| 4 | CONSOL ENERGY | CNX | 9 | 33.240 | 43 | US STEEL | X | 9 | 28.330 |
| 5 | CABOT OIL \& GAS | COG | 9 | 35.140 | 3 | WHIRLPOOL CORP | WHR | 9 | 64.020 |
| 4 | CHESAPEAKE ENERG | CHK | 9 | 18.440 | 4 | WINDSTREAM COMMU | WIN | 9 | 11.240 |

## Price

## Top 50 S\&P 500 Companies By LOW PRICE

Low Price: Absolute price level of the stock at month-end.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The

$\begin{array}{llllllllllllllllll}86 & 87 & 88 & 89 & 90 & 91 & 92 & 93 & 94 & 95 & 96 & 97 & 98 & 99 & 00 & 01 & 02 & 03 \\ 04 & 05 & 06 & 07 & 08 & 09 & 10 & 11 & 12\end{array}$

| A b solute R eturns |  |
| :--- | ---: |
| Last 1 M onth | $-3.70 \%$ |
| Last 3 M onth s | $3.29 \%$ |
| Last 6 M onth s | $9.61 \%$ |
| Last 12 M onth s | $-16.60 \%$ |
| 2012 Y T D | $11.32 \%$ |

## Screen for April

| Mo. |  |  |  | M 0 . |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  | Price |  | In |  | Price |  |
| Scr | Company | Ticker | 04/30/2012 | Scrn | Company | Ticker | 04/30/2012 |
| 57 | SPRINT | S | 2.480 | 28 | APPLIED MATERIAL | AM AT | 11.990 |
| 37 | FRONTIER COMMUNI | FTR | 4.025 | 8 | SAIC INC | SAI | 12.160 |
| 100 | TENET HEALTHCARE | THC | 5.190 | 11 | JDS UNIPHASE CORP | JDSU | 12.170 |
| 23 | SUPERVALU INC. | SVU | 5.940 | 24 | DEAN FOODS COMPA | DF | 12.280 |
| 21 | GENWORTH FINANCI | GNW | 6.010 | 19 | PEOPLE'S UNITED | PBCT | 12.325 |
| 34 | BOSTON SCIENTIFI | BSX | 6.260 | 6 | DONNELLEY (R R ) \& SONS CO | RRD | 12.510 |
| 94 | MICRON TECHNOLOG | M U | 6.590 | 29 | AES CORPORATION | AES | 12.520 |
| 41 | HUNTINGTON BANCS | HBAN | 6.690 | 5 | NVIDIA CORPORATI | NVDA | 13.000 |
| 41 | REGIONS FINANCIA | R F | 6.740 | 24 | MASCO CORP | MAS | 13.180 |
| 20 | HUDSON CITY BANC | HCBK | 7.060 | 14 | GANNETT CO | GCI | 13.820 |
| 9 | METROPCS COMMUNI | PCS | 7.300 | 22 | FIFTH THIRD BANC | FITB | 14.225 |
| 65 | ADVANCED MICRO D | AM D | 7.360 | 11 | CHARLES SCHWAB C | SCHW | 14.280 |
| 45 | XEROX CORP | XRX | 7.780 | 8 | CORNING INC. | GLW | 14.350 |
| 37 | KEYCORP | KEY | 8.040 | 4 | BLOCK H\&R INC | HRB | 14.700 |
| 121 | LSICORPORATION | LSI | 8.040 | 5 | TITANIUM METALS | TIE | 14.770 |
| 19 | BANK OF AMERICA CORP | BAC | 8.110 | 7 | CABLEVISION SYST | CVC | 14.820 |
| 18 | SOUTHWEST AIRLIN | LUV | 8.280 | 10 | SLM CORP | SLM | 14.830 |
| 27 | FIRST HORIZON NA | FHN | 9.180 | 3 | ELECTRONIC ARTS | EA | 15.380 |
| 13 | ALCOA INC. | AA | 9.730 | 7 | STAPLES, INC. | SPLS | 15.400 |
| 32 | PULTEGROUP INCOR | PHM | 9.840 | 4 | YAHOO! | YHOO | 15.540 |
| 15 | E*TRADE FINANCIA | ETFC | 10.630 | New | INTERNATIONAL GA | IG T | 15.580 |
| 9 | GOODYEAR TIRE \& | G T | 10.980 | 2 | ALPHA NATURAL RE | ANR | 16.130 |
| 37 | WINDSTREAM COMMU | WIN | 11.240 | 32 | DR HORTON INCORP | DHI | 16.350 |
| 16 | FORD MOTOR CO | F | 11.280 | 2 | DELL INC. | DELL | 16.370 |
| 96 | INTERPUBLIC GROU | IPG | 11.810 | New | SYMANTEC CORPORA | SYMC | 16.535 |

## Neglect-Institutional Ownership

## Top 50 S\&P 500 Companies By Low Institutional holdings

Neglect: Those companies with the lowest proportions of float-adjusted shares held by institutional owners are considered more neglected.


| Mo. |  |  |  |  | Mo. |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  |  | \% Held | Price | In |  | Ticker | \% Held By Inst | $\begin{array}{r} \text { Price } \\ 04 / 30 / 2012 \end{array}$ |
| Scrn. | Company | Ticker | By Inst 04/30/2012 |  | Scrn. Company |  |  |  |  |
| New | AON PLC | AON | 0.0\% | 51.800 | 29 | SAIC INC | SAI | 58.8\% | 12.160 |
| New | EXPRESS SCRIPTS | ESRX | 0.0\% | 55.790 | 9 | ALCOA INC. | AA | 59.2\% | 9.730 |
| 27 | BERKSHIRE HATHAWAY | BRK.B | 37.4\% | 80.450 | 57 | DTE ENERGY COMPA | DTE | 59.3\% | 56.380 |
| 134 | CONSOLIDATED EDI | ED | 43.4\% | 59.450 | 33 | PACCAR INC | PCAR | 59.3\% | 42.950 |
| New | NORTHEAST UTILIT | NU | 44.6\% | 36.770 | 127 | TECO ENERGY INC | TE | 59.4\% | 18.020 |
| 189 | THE SOUTHERN COM | SO | 45.1\% | 45.940 | 23 | ALTRIA GROUP, IN | MO | 60.1\% | 32.210 |
| 23 | MOLEX INCORPORAT | MOLX | 45.5\% | 27.590 | 49 | AMEREN CORP | AEE | 60.9\% | 32.790 |
| 12 | BROWN-FORMAN -CLB | BF.B | 48.3\% | 86.350 | 33 | INTL BUSINESS MA | IBM | 61.1\% | 207.080 |
| 46 | FRONTIER COMMUNI | FTR | 48.7\% | 4.025 | 25 | WAL*MART STORES | WMT | 61.6\% | 58.910 |
| 86 | EXXONMOBIL CORP. | XOM | 50.2\% | 86.340 | 38 | HORMEL FOODS CORP | HRL | 62.0\% | 29.060 |
| 70 | DUKE ENERGY | DUK | 50.7\% | 21.430 | 33 | PUBLIC SERVICE E | PEG | 62.1\% | 31.150 |
| 28 | WINDSTREAM COMMU | WIN | 51.0\% | 11.240 | 5 | AGL RESOURCES IN | GAS | 62.2\% | 39.430 |
| 63 | INTEGRYS ENERGY GROUP INC | TEG | 52.2\% | 54.640 | 6 | CINCINNATI FINANCIAL CORP | CINF | 62.7\% | 35.650 |
| 2 | UPS | UPS | 52.9\% | 78.140 | New | ORACLE CORP | ORCL | 63.0\% | 29.400 |
| 54 | VERIZON COMMUNIC | VZ | 54.2\% | 40.380 | 18 | INTEL CORPORATIO | INTC | 63.3\% | 28.395 |
| 18 | BANK OF AMERICA CORP | BAC | 54.3\% | 8.110 | 15 | TITANIUM METALS | TIE | 63.3\% | 14.770 |
| 54 | PEPCO HOLDINGS INC | POM | 54.3\% | 18.920 | 118 | PRUDENTIAL FINAN | PRU | 63.4\% | 60.540 |
| 86 | GENERAL ELECTRIC | GE | 54.4\% | 19.580 | 51 | CITIGROUP INC | C | 63.5\% | 33.045 |
| 17 | FORD MOTOR CO | F | 54.9\% | 11.280 | 20 | HUDSON CITY BANC | HCBK | 63.6\% | 7.060 |
| 173 | BB\&T CORPORATION | BBT | 55.2\% | 32.040 | 3 | AMERICAN ELECTRI | AEP | 63.8\% | 38.840 |
| 40 | SCANA CORPORATIO | SCG | 55.3\% | 46.120 | 9 | DUPONT (E.I.) DE | DD | 63.8\% | 53.460 |
| 63 | AT\&T INC. | T | 56.8\% | 32.910 | 14 | XCEL ENERGY INC. | XEL | 63.8\% | 27.060 |
| 54 | DOMINION RESOURC | D | 57.4\% | 52.190 | 11 | THE COCA COLA CO | KO | 64.0\% | 76.320 |
| 67 | PROGRESS ENERGY | PGN | 57.9\% | 53.220 | 2 | REGIONS FINANCIA | RF | 64.4\% | 6.740 |
| 70 | PROCTER \& GAMBLE | PG | 58.6\% | 63.640 | New | JOHNSON \& JOHNSO | JNJ | 64.9\% | 65.100 |

## Neglect-Analyst Coverage

Top 50 S\&P 500 Companies By Low Analyst Coverage
Neglect: Those companies with the lowest number of analysts submitting ratings to FirstCall.


|  |  |
| :---: | :---: |
| Absolute Returns |  |
| Last 1 M onth | -1.62\% |
| Last 3 m onths | $4.84 \%$ |
| Last 6 m onths | $10.34 \%$ |
| Last 12 Months | -3.14\% |
| 2012 Y T D | $9.35 \%$ |

Source: BofA Merrill Lynch US Quantitative Strategy
The performance chart represents actual returns since July 1989. There is no back tested performance.
Screen for April

| Mo. <br> In |  |  No. of  <br>  Analyst Price <br> Ticker   <br> Coverage $04 / 30 / 2012$  |  |  | $\begin{aligned} & \text { M o. } \\ & \text { In } \end{aligned}$ |  | No. of <br> Analyst <br> Price |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn. | Company |  |  |  |  | Company | Ticker |  |  |
| 2 | LEUCADIA NATIONAL CORP | LUK | 1 | 24.860 | 17 | DUN \& BRADSTREET CORP | DNB | 9 | 77.780 |
| 53 | WASHINGTON POST -CLB | WPO | 1 | 378.170 | 5 | FASTENALCO | FAST | 9 | 46.820 |
| 115 | LOEWS CORP | L | 3 | 41.130 | 33 | FMC CORP | FMC | 9 | 110.450 |
| 52 | HARMAN INTERNATIONAL INDS | HAR | 4 | 49.580 | 7 | GENUINE PARTS CO | GPC | 9 | 64.780 |
| 98 | PITNEY BOWES INC | PBI | 5 | 17.130 | 8 | MOLSON COORS BRE | TAP | 9 | 41.580 |
| 115 | SNAP-ON INC | SNA | 5 | 62.540 | 12 | ASSURANT INC. | AIZ | 10 | 40.340 |
| 55 | TITANIUM METALS | TIE | 5 | 14.770 | 7 | BEAM INC. | BEAM | 10 | 56.780 |
| 87 | WHIRLPOOL CORP | WHR | 5 | 64.020 | 4 | EASTMAN CHEMICAL | EM N | 10 | 53.970 |
| 34 | AVERY DENNISON C | AVY | 6 | 31.980 | 17 | GOODYEAR TIRE \& | GT | 10 | 10.980 |
| 7 | CB RICHARD ELLIS | CBG | 6 | 18.810 | 9 | NISOURCE INC | NI | 10 | 24.650 |
| 115 | DONNELLEY (R R ) \& SONS CO | RRD | 6 | 12.510 | 13 | REPUBLIC SERVICE | RSG | 10 | 27.370 |
| 77 | LEGGETT \& PLATT INC | LEG | 6 | 21.770 | 17 | THE MCGRAW-HILL | M HP | 10 | 49.170 |
| 39 | SLM CORP | SLM | 6 | 14.830 | 15 | BROWN-FORMAN -CLB | BF.B | 11 | 86.350 |
| 84 | AES CORPORATION | AES | 7 | 12.520 | New | HORMEL FOODS CORP | HRL | 11 | 29.060 |
| 51 | MOODY'S CORPORAT | MCO | 7 | 40.950 | 9 | MEADWESTVACO COR | M WV | 11 | 28.340 |
| 86 | SEARS HOLDINGS CORP | SHLD | 7 | 53.780 | 24 | ONEOK INC | OKE | 11 | 85.890 |
| 31 | BLOCKH\&RINC | HR B | 8 | 14.700 | 14 | PALL CORP | PLL | 11 | 59.610 |
| 56 | CINCINNATIFINANCIAL CORP | CINF | 8 | 35.650 | 9 | plum creek timbe | PCL | 11 | 42.040 |
| 63 | INTEGRYS ENERGY GROUP INC | TEG | 8 | 54.640 | New | SCANA CORPORATIO | SCG | 11 | 46.120 |
| 4 | WPX ENERGY INC | WPX | 8 | 17.570 | New | SUNOCOINC. | SUN | 11 | 49.290 |
| 5 | AGL RESOURCES IN | GAS | 9 | 39.430 | New | WASTE MANAGEMENT | WM | 11 | 34.200 |

## Size

## Top 50 S\&P 500 Companies By SMALL SIZE

Firm Size: Month-end market value.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

## Screen for April

| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  |  | Market | Price |
| Scrn. Company | Ticker | Value | $04 / 30 / 2012$ |  |
|  |  |  |  |  |
| 7 | FIRST SOLAR, INC | FSLR | 1086 | 18.400 |
| 20 | TITANIUM METALS | TIE | 1211 | 14.770 |
| 25 | SUPERVALU INC. | SVU | 1259 | 5.940 |
| 20 | AUTONATION, INC. | AN | 1452 | 34.580 |
| 23 | WASHINGTON POST -CL B | WPO | 1891 | 378.170 |
| 21 | DEVRY INC | DV | 1929 | 32.150 |
| 35 | FEDERATED INVEST | FII | 2031 | 22.080 |
| 3 | SEARS HOLDINGS CORP | SHLD | 2044 | 53.780 |
| 71 | TENET HEALTHCARE | THC | 2128 | 5.190 |
| 19 | LEXMARK INTERNAT | LXK | 2137 | 30.100 |
| 9 | METROPCS COMMUNI | PCS | 2146 | 7.300 |
| 11 | DONNELLEY (R R) \& SONS CO | RRD | 2227 | 12.510 |
| 27 | DEAN FOODS COMPA | DF | 2260 | 12.280 |
| 29 | FIRST HORIZON NA | FHN | 2350 | 9.180 |
| 36 | BIG LOTS INC | BIG | 2418 | 36.640 |
| 39 | RYDER SYSTEM INC | R | 2485 | 48.720 |
| 4 | GOODYEAR TIRE \& | GT | 2690 | 10.980 |
| 9 | E*TRADE FINANCIA | ETFC | 2700 | 10.630 |
| 11 | JDS UNIPHASE CORP | JDSU | 2797 | 12.170 |
| New | GENWORTH FINANCI | GNW | 2951 | 6.010 |
| 20 | PATTERSON COS IN | PDCO | 3000 | 34.090 |
| 19 | LEGGETT \& PLATT INC | LEG | 3048 | 21.770 |
| 3 | NASDAQ OMX GROUP INC | NDAQ | 3071 | 24.570 |
| 6 | GAMESTOP CORP | GME | 3095 | 22.760 |
| 38 | PERKINELMER, INC | PKI | 3119 | 27.600 |


| A b solute Returns |  |
| :---: | :---: |
| Last 1 M onth | -1.88\% |
| Last 3 M onth s | $3.19 \%$ |
| Last 6 M onth s | $9.34 \%$ |
| Last 12 Month s | -7.42\% |
| 2012 Y T D | $11.28 \%$ |

Mo.

| In |  |  | Market |  |
| :--- | :--- | :--- | ---: | ---: |
| Scrn. | Company | Price <br> Ticker | Value | $04 / 30 / 2012$ |
|  |  |  |  |  |
| 89 | TERADYNE INC. | TER | 3201 | 17.210 |
| 7 | URBAN OUTFITTERS | URBN | 3215 | 28.960 |
| 5 | CABLEVISION SYST | CVC | 3216 | 14.820 |
| 5 | TESORO CORP. | TSO | 3232 | 23.250 |
| 6 | LEGG MASON INC | LM | 3233 | 26.070 |
| 21 | GANNETT CO | GCI | 3275 | 13.820 |
| 43 | APARTMENT INVEST | AIV | 3285 | 27.150 |
| 61 | NOVELLUS | NVLS | 3314 | 46.800 |
| 20 | PULTEGROUP INCOR | PHM | 3316 | 9.840 |
| 7 | BEMIS COMPANY IN | BMS | 3336 | 32.390 |
| 6 | SAIC INC | SAI | 3356 | 12.160 |
| 10 | AVERY DENNISON C | AVY | 3390 | 31.980 |
| 4 | PITNEY BOWES INC | PBI | 3426 | 17.130 |
| New | FLIR SYSTEMS INC | FLIR | 3459 | 22.460 |
| 52 | HARMAN INTERNATIONAL INDS | HAR | 3471 | 49.580 |
| 4 | WPX ENERGY INC | WPX | 3496 | 17.570 |
| 2 | ALPHA NATURAL RE | ANR | 3549 | 16.130 |
| 2 | ASSURANT INC. | AIZ | 3550 | 40.340 |
| 5 | TRIPADVISOR LLC | TRIP | 3563 | 37.510 |
| 39 | SNAP-ON INC | SNA | 3627 | 62.540 |
| 13 | SEALED AIR CORP. | SEE | 3683 | 19.180 |
| New | CONSTELLATION BR | STZ | 3715 | 21.600 |
| New | HUDSON CITY BANC | HCBK | 3728 | 7.060 |
| New | DUN \& BRADSTREET CORP | DNB | 3733 | 77.780 |
| New | ZIONS BANCORPORA | ZION | 3752 | 20.390 |

## Foreign Exposure

Top 50 S\&P 500 Companies By FOREIGN EXPOSURE
Foreign Exposure: The ratio of foreign sales to total sales.


The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for April

| Mo.I | Company | Ticker | Foreign | Price |  | Company | Ticker | Foreign | Price 04/30/2012 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 12 | COCACOLA ENTERP | CCE | 100.0\% | 30.120 | 16 | NOBLE CORPORATIO | NE | 77.4\% | 38.060 |
| 50 | PHILIP MORRIS IN | PM | 100.0\% | 89.510 | 35 | FMC TECHNOLOGIES | FTI | 77.3\% | 47.000 |
| 15 | BROADCOM CORP. | BRCM | 98.5\% | 36.600 | 5 | BORGWARNER INC. | BWA | 76.5\% | 79.040 |
| 38 | MOLSON COORS BRE | TAP | 97.7\% | 41.580 | 87 | AFLAC INC | AFL | 75.9\% | 45.040 |
| 182 | INTEL CORPORATIO | INTC | 94.7\% | 28.395 | 144 | INTL FLAVORS \& FRAGRANCES | IFF | 75.6\% | 60.210 |
| 126 | QUALCOMM INC. | QCOM | 94.0\% | 63.830 | 50 | LSI CORPORATION | LSI | 74.6\% | 8.040 |
| 170 | ADVANCED MICRO D | AMD | 93.1\% | 7.360 | 55 | NEWMONT MINING C | NEM | 74.0\% | 47.650 |
| 13 | DIAMOND OFFSHORE | DO | 90.3\% | 68.550 | 9 | XILINX INC. | XLNX | 73.8\% | 36.380 |
| 158 | TEXAS INSTRUMENT | TXN | 89.3\% | 31.940 | 40 | OWENS-ILLINOIS I | OI | 73.8\% | 23.250 |
| 42 | JABIL CIRCUIT IN | JBL | 86.0\% | 23.450 | 2 | AVERY DENNISON C | AVY | 72.9\% | 31.980 |
| 163 | AES CORPORATION | AES | 85.8\% | 12.520 | 20 | LINEAR TECHNOLOGY CORP | LLTC | 72.7\% | 32.710 |
| 126 | NVIDIA CORPORATI | NVDA | 85.1\% | 13.000 | 50 | NOVELLUS | NVLS | 72.5\% | 46.800 |
| 26 | SANDISK CORPORAT | SNDK | 84.9\% | 37.000 | 7 | TE CONNECTIVITY | TEL | 72.3\% | 36.460 |
| 97 | TERADYNE INC. | TER | 84.5\% | 17.210 | 15 | WYNN RESORTS LTD | WYNN | 71.9\% | 133.400 |
| 78 | MICRON TECHNOLOG | MU | 84.5\% | 6.590 | 2 | ROWAN COMPANIES | RDC | 71.9\% | 34.530 |
| 34 | WESTERN DIGITAL | WDC | 83.3\% | 38.810 | 156 | AUTODESK INC. | ADSK | 71.5\% | 39.370 |
| 122 | ALTERA CORP. | ALTR | 82.3\% | 35.570 | 29 | THE WESTERN UNIO | WU | 71.4\% | 18.380 |
| 123 | ANALOG DEVICES I | ADI | 82.2\% | 38.980 | 86 | WATERS CORPORATI | WAT | 71.3\% | 84.110 |
| 81 | COLGATE-PALMOLIV | CL | 82.1\% | 98.940 | 3 | FLUOR CORP | FLR | 70.2\% | 57.750 |
| 144 | APPLIED MATERIAL | AMAT | 81.3\% | 11.990 | 29 | CATERPILLAR INC | CAT | 70.1\% | 102.770 |
| 75 | HARMAN INTERNATIONAL INDS | HAR | 81.3\% | 49.580 | 55 | EXPEDITORSINTL WASH INC | EXPD | 70.0\% | 40.000 |
| 139 | AVON PRODUCTS | AVP | 81.3\% | 21.600 | 3 | YUM! BRANDS, INC | YUM | 70.0\% | 72.730 |
| 174 | KLA-TENCOR CORP. | KLAC | 80.8\% | 52.135 | 52 | AGILENT TECHNOLO | A | 69.5\% | 42.180 |
| 56 | MICROCHIP TECHNOLOGY INC | MCHP | 79.1\% | 35.370 | 3 | MCDONALD'SCORPO | MCD | 68.4\% | 97.450 |
| 38 | CORNING INC. | GLW | 78.8\% | 14.350 | 3 | AMPHENOL CORPORA | APH | 67.8\% | 58.140 |

## Valuation Backdrop

S\&P 500 Risk Premium (DDM Expected Return less AAA Corporate Bond Rate)


Source: BofA Merrill Lynch US Quantitative Strategy

Inflation vs. P/E Model (1965 to present)
Note: We exclude deflationary points from trend line calculation. Historically, the relationship between inflation and valuation breaks down during deflationary periods. For example, from 1949 to1950
S\&P 500 valuation was below average, and from 1954 to 1955, valuation was well above average.


S\&P 500 PE-to-Growth Ratio (Trailing PIE Divided by Proj. 5-Yr EPS Growth)


BofAML Universe Sector/Industry Factor Evaluation

|  | \# of Comp | \% Univ BofAML | Valuation Analysis |  |  |  |  |  |  |  | Expectation Analysis |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Impl. <br> Return | Reqd <br> Return | DDM <br> Alpha | Eqty. <br> Duration | BofAML <br> Adj ßeta | P/E <br> Ratio | Pricel Book | Yield | Earnings (Decile) |  |  |  |  | PR 5yr Growth | EPS Growth |  |
|  |  |  |  |  |  |  |  |  |  |  | Surprise | Risk | Torp | Disp | Est. Rev. |  | 2012E | 2013E |
| Economic Sectors |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Energy | 107 | 12.0 | 11.9 | 11.6 | 0.3 | 26.3 | 0.9 | 10.7 | 2.0 | 2.6 | 4 | 6 | 4 | 8 | 5 | 8.4 | 5 | 16 |
| Materials | 63 | 3.8 | 10.8 | 15.1 | -4.3 | 29.8 | 1.2 | 12.4 | 2.5 | 2.2 | 6 | 7 | 6 | 5 | 6 | 7.6 | 2 | 16 |
| Industrials | 120 | 9.9 | 11.9 | 14.0 | -2.1 | 25.8 | 1.2 | 12.6 | 2.7 | 2.2 | 5 | 5 | 6 | 3 | 5 | 13.0 | 15 | 15 |
| Consumer Discretionary | 189 | 12.5 | 12.3 | 14.0 | -1.7 | 28.5 | 1.2 | 11.8 | 3.0 | 1.4 | 6 | 5 | 6 | 5 | 5 | 19.3 | 9 | 28 |
| Consumer Staples | 55 | 9.9 | 11.4 | 9.2 | 2.2 | 27.9 | 0.7 | 15.3 | 3.2 | 2.9 | 7 | 2 | 4 | 2 | 6 | 8.4 | 6 | 10 |
| Health Care | 143 | 11.7 | 12.4 | 10.3 | 2.1 | 27.3 | 0.8 | 13 | 2.7 | 2.0 | 7 | 4 | 4 | 3 | 5 | 9.3 | 4 | 9 |
| Financials | 232 | 14.2 | 11.9 | 15.5 | -3.6 | 26.4 | 1.3 | 11 | 1.2 | 2.5 | 5 | 7 | 6 | 4 | 5 | 9.9 | 18 | 10 |
| Information Technology | 149 | 19.9 | 13.8 | 13.1 | 0.7 | 25.1 | 1.1 | 12.3 | 3.4 | 1.0 | 4 | 4 | 6 | 4 | 4 | 13.8 | 17 | 13 |
| Telecommunication Services | 18 | 2.8 | 10.3 | 9.7 | 0.6 | 20.2 | 0.8 | 18.9 | 2.0 | 4.9 | 4 | 7 | 4 | 4 | 7 | 6.3 | 15 | 34 |
| Utilities | 49 | 3.4 | 9.8 | 8.3 | 1.5 | 26.9 | 0.7 | 15.2 | 1.6 | 4.1 | 5 | 4 | 3 | 3 | 6 | 3.9 | -2 | 4 |
| Capitalization Sectors (\$ Million) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| O To 1071 | 225 | 0.9 | 11.8 | 14.6 | -2.8 | 29.0 | 1.2 | 24.8 | 1.5 | 1.6 | 6 | 7 | 7 | 7 | 6 | 12.5 | nm | 78 |
| 1085 To 2553 | 225 | 2.9 | 11.9 | 13.9 | -2 | 27.5 | 1.1 | 14.8 | 1.7 | 2.1 | 5 | 6 | 5 | 6 | 6 | 11.0 | 14 | 18 |
| 2562 To 5433 | 225 | 6.2 | 11.3 | 14.0 | -2.7 | 29.1 | 1.2 | 14.6 | 1.8 | 1.7 | 5 | 6 | 6 | 5 | 6 | 10.7 | 18 | 18 |
| 5448 To 13399 | 225 | 14.2 | 11.7 | 13.4 | -1.7 | 29.0 | 1.1 | 11.5 | 2.2 | 1.6 | 6 | 5 | 5 | 5 | 5 | 13.6 | 7 | 24 |
| 13457 To 546057 | 225 | 75.8 | 12.4 | 12.2 | 0.2 | 25.9 | 1.0 | 12.2 | 2.4 | 2.3 | 5 | 5 | 5 | 4 | 5 | 11.0 | 10 | 12 |
| Risk Sectors |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0.30 To 0.73 | 211 | 24.1 | 11.6 | 8.1 | 3.5 | 25.9 | 0.6 | 13.6 | 2.7 | 3.2 | 6 | 4 | 4 | 4 | 6 | 8.1 | 5 | 11 |
| 0.74 To 0.97 | 218 | 22.6 | 11.3 | 10.6 | 0.7 | 29.0 | 0.9 | 13.7 | 2.6 | 2.3 | 6 | 4 | 5 | 4 | 5 | 9.4 | 8 | 11 |
| 0.98 To 1.17 | 207 | 25.8 | 13.5 | 13.2 | 0.3 | 24.7 | 1.1 | 12.4 | 2.6 | 1.5 | 5 | 4 | 6 | 5 | 4 | 12.9 | 13 | 15 |
| 1.18 To 1.42 | 218 | 16.9 | 12.1 | 15.5 | -3.4 | 26.8 | 1.3 | 10.4 | 1.8 | 1.8 | 5 | 7 | 6 | 5 | 5 | 12.4 | 12 | 21 |
| 1.43 To 3.26 | 212 | 9.7 | 12.1 | 21.2 | -9.1 | 26.7 | 1.8 | 10.8 | 1.4 | 1.5 | 5 | 8 | 7 | 5 | 5 | 18.0 | 14 | 16 |
| Uncoded | 59 | 0.9 | 12.2 |  |  | 30.3 |  | 13 | 2.2 | 1.7 | 5 | 9 | 6 | 7 | 5 | 15.0 | 69 | 21 |
| DDM Alpha |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Most Undervalued | 153 | 23.1 | 14.0 | 10.1 | 3.9 | 22.7 | 0.8 | 11.8 | 3.0 | 2.1 | 4 | 3 | 5 | 4 | 5 | 14.1 | 14 | 12 |
| Undervalued | 153 | 22.7 | 12.0 | 11.0 | 1 | 25.3 | 0.9 | 13 | 2.3 | 2.6 | 6 | 4 | 5 | 3 | 5 | 10.8 | 9 | 12 |
| Fair Value | 153 | 16.8 | 11.6 | 13.3 | -1.7 | 29.4 | 1.1 | 13.2 | 2.1 | 1.8 | 5 | 6 | 6 | 4 | 5 | 11.9 | 9 | 14 |
| Overvalued | 153 | 10.4 | 11.0 | 15.0 | -4 | 28.9 | 1.2 | 13.1 | 2.3 | 1.6 | 6 | 5 | 6 | 4 | 5 | 12.2 | 9 | 16 |
| Most Overvalued | 153 | 8.9 | 10.7 | 18.8 | -8.1 | 30.8 | 1.6 | 11.9 | 1.7 | 1.5 | 5 | 7 | 6 | 4 | 4 | 10.5 | 18 | 15 |
| Uncoded | 360 | 18.1 | 12.2 | 12.4 | -0.2 | 30.3 | 1.0 | 11.5 | 1.9 | 2.6 | 6 | 6 | 4 | 6 | 5 | 7.8 | 5 | 20 |


|  | \# of Comp | \% Univ <br> BofAML | Valuation Analysis |  |  |  |  |  |  |  | Expectation Analysis |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  | Earnings (Decile) |  |  |  |  | PR 5yr <br> Growth | EPS Growth |  |
|  |  |  | Return | Return | Alpha | Duration | Adj ßeta | Ratio | Book | Yield | Surprise | Risk | Torp | Disp | Est. Rev. |  | 2012E | 2013E |
| ENERGY | 107 | 12.0 | 11.9 | 11.6 | 0.3 | 26.3 | 0.9 | 10.7 | 2.0 | 2.6 | 4 | 6 | 4 | 8 | 5 | 8.0 | 5 | 16 |
| ENERGY EQUIP \& SVS | 13 | 1.8 | 12.3 | 15.6 | -3.3 | 27.6 | 1.3 | 13.5 | 2.2 | 1.1 | 6 | 5 | 8 | 6 | 8 | 15.8 | 17 | 22 |
| OIL \& GAS | 94 | 10.2 | 11.7 | 10.9 | 0.8 | 25.8 | 0.9 | 10.3 | 2.0 | 2.9 | 4 | 7 | 4 | 8 | 5 | 6.7 | 3 | 16 |
| MATERIALS | 63 | 3.8 | 10.8 | 15.1 | -4.3 | 29.8 | 1.2 | 12.4 | 2.5 | 2.2 | 6 | 7 | 6 | 5 | 6 | 7.6 | 2 | 16 |
| CHEMICALS | 24 | 2.5 | 10.8 | 14.5 | -3.7 | 29.7 | 1.2 | 13.1 | 3.3 | 2.1 | 5 | 6 | 6 | 4 | 5 | 8.0 | 10 | 11 |
| CONTAINERS \& PCKG | 11 | 0.3 | 10.3 | 12.8 | -2.5 | 32.9 | 1.1 | 12.5 | 2.6 | 1.5 | 7 | 5 | 6 | 4 | 7 | 7.0 | 9 | 18 |
| METALS \& MINING | 23 | 0.9 | 11.0 | 16.3 | -5.3 | 29.0 | 1.4 | 10.8 | 1.6 | 2.6 | 7 | 7 | 7 | 8 | 8 | 6.9 | -11 | 27 |
| PAPER \& FOREST PROD | 5 | 0.2 | 11.6 | 21.2 | -9.6 | 25.1 | 1.8 | 13.8 | 1.7 | 2.8 | 9 | 10 | 4 | 7 | 8 | 6.4 | -22 | 33 |
| INDUSTRIALS | 120 | 9.9 | 11.9 | 14.0 | -2.1 | 25.8 | 1.2 | 12.6 | 2.7 | 2.2 | 5 | 5 | 6 | 3 | 5 | 12.9 | 15 | 15 |
| AEROSPACE \& DEF | 21 | 2.5 | 11.7 | 13.5 | -1.8 | 27.8 | 1.1 | 13.0 | 3.3 | 2.2 | 6 | 3 | 5 | 3 | 6 | 10.9 | 5 | 12 |
| BLDGS PRODUCTS | 2 | 0.0 |  | 20.1 |  |  | 1.7 | 14.0 | 1.2 | 0.0 |  | 10 | 8 | 7 | 9 | 11.8 | 3 | 38 |
| CONSTR. \& ENGR | 8 | 0.2 | 12.4 | 14.5 | -2.1 | 31.2 | 1.2 | 11.7 | 1.7 | 0.7 | 3 | 5 | 7 | 5 | 5 | 15.0 | 27 | 14 |
| ELECTRICAL EQUIP | 7 | 0.5 | 12.6 | 14.3 | -1.7 | 25.0 | 1.2 | 15.0 | 3.6 | 2.3 | 8 | 4 | 5 | 3 | 5 | 13.8 | 13 | 16 |
| IND CONGLOMERATES | 4 | 2.3 | 13.3 | 15.0 | -1.7 | 21.5 | 1.2 | 12.7 | 2.0 | 2.9 | 4 | 4 | 6 | 3 | 5 | 14.4 | 12 | 15 |
| MACHINERY | 22 | 1.6 | 12.1 | 17.0 | -4.9 | 24.1 | 1.4 | 10.7 | 2.9 | 1.9 | 3 | 7 | 8 | 4 | 3 | 14.0 | 24 | 14 |
| TRADING COMPANIES | 5 | 0.2 | 11.8 | 12.9 | -1.1 | 33.0 | 1.1 | 16.6 | 3.2 | 1.6 | 6 | 3 | 6 | 3 | 3 | 15.1 | 22 | 16 |
| COMMERCIAL SVS | 23 | 0.7 | 11.2 | 9.5 | 1.7 | 30.3 | 0.8 | 17.2 | 2.4 | 1.6 | 6 | 4 | 5 | 4 | 5 | 12.0 | 8 | 14 |
| AIR FREIGHT \& LOGIS | 4 | 0.8 | 11.3 | 11.8 | -0.5 | 27.9 | 1.0 | 14.8 | 4.5 | 2.3 | 7 | 9 | 6 | 3 | 4 | 11.2 | 13 | 14 |
| AIRLINES | 11 | 0.2 | 10.0 | 11.2 | -1.2 | 35.6 | 0.9 | 6.2 | 1.5 | 0.1 | 8 | 9 | 10 | 9 | 6 | 16.2 | 98 | 32 |
| MARINE | 1 | 0.0 | 11.8 | 13.2 | -1.4 | 28.5 | 1.1 | 15.8 | 2.5 | 0.0 | 1 | 4 | 7 | 4 | 4 | 15.0 | 22 | 8 |
| ROAD \& RAIL | 11 | 0.9 | 8.7 | 13.5 | -4.8 | 28.2 | 1.1 | 13.4 | 2.8 | 2.0 | 8 | 3 | 7 | 2 | 5 | 13.2 | 14 | 14 |
| TRANSPORT INFRA | 1 | 0.0 | 10.8 |  |  | 32.0 |  | 13.2 | 2.1 | 0.0 | 8 |  | 7 | 4 | 4 | 12.0 | 28 | 20 |
| CONSUMER DISCR | 189 | 12.5 | 12.3 | 14.0 | -1.7 | 28.5 | 1.2 | 11.8 | 3.0 | 1.4 | 6 | 5 | 6 | 5 | 5 | 19.0 | 9 | 28 |
| AUTO COMP | 14 | 0.5 | 15.0 | 19.7 | -4.7 | 20.7 | 1.7 | 8.8 | 2.3 | 1.2 | 5 | 9 | 7 | 6 | 6 | 18.4 | 14 | 21 |
| AUTOMOBILES | 3 | 0.6 | 14.6 | 15.3 | -0.7 | 18.4 | 1.3 | 6.3 | 1.9 | 0.9 | 4 |  | 8 | 8 | 7 | 11.3 | 0 | 37 |
| HOUSEHOLD DURABLES | 13 | 0.3 | 11.7 | 15.6 | -3.9 | 25.1 | 1.3 | 21.5 | 2.3 | 1.6 | 6 | 4 | 7 | 7 | 3 | 13.9 | 206 | 42 |
| TEXTILES, APPAREL | 15 | 0.9 | 10.9 | 14.9 | -4 | 33.3 | 1.2 | 19.1 | 4.6 | 0.9 | 7 | 4 | 6 | 3 | 4 | 14.3 | 16 | 18 |
| HOTELS, RESTAURANTS \& LEISURE | 35 | 2.5 | 10.6 | 15.6 | -5 | 31.0 | 1.3 | 20.6 | 3.8 | 1.8 | 7 | 5 | 5 | 4 | 4 | 36.1 | 9 | 16 |
| DIV CONSUMER SVS | 17 | 0.2 | 10.7 | 11.6 | -0.9 | 31.4 | 1.0 | 12.3 | 1.8 | 0.9 | 5 | 5 | 3 | 6 | 5 | 5.5 | -17 | 8 |
| MEDIA | 26 | 3.1 | 14.2 | 14.0 | 0.2 | 24.2 | 1.2 | 6.7 | 2.1 | 1.6 | 6 | 4 | 7 | 4 | 4 | 15.4 | 6 | 38 |
| DISTRIBUTORS | 2 | 0.1 | 11.7 | 10.8 | 0.9 | 26.6 | 0.9 | 15.9 | 3.3 | 2.1 | 5 | 3 | 6 | 3 | 4 | 12.4 | 18 | 12 |
| INTERNET \& CATALOG RETAIL | 11 | 1.1 | 10.2 | 13.0 | -2.8 | 37.3 | 1.1 | 38.8 | 8.4 | 0.0 | 3 | 6 | 5 | 8 | 7 | 19.3 | 7 | 50 |
| MULTILINE RETAIL | 9 | 0.9 | 12.0 | 11.6 | 0.4 | 29.9 | 0.9 | 14.2 | 2.9 | 1.5 | 7 | 4 | 6 | 3 | 5 | 11.8 | 8 | 16 |
| SPECIALTY RETAIL | 44 | 2.4 | 11.9 | 12.2 | -0.3 | 28.9 | 1.0 | 15.7 | 3.6 | 1.4 | 5 | 4 | 6 | 4 | 3 | 14.0 | 16 | 14 |



Source: BofA Merrill Lynch US Equity and US Quant Strategy

## Performance Calculation Methodology

For each of the strategies represented in this report, rebalancing and performance calculations are conducted each month, using data and closing prices corresponding to the market's close on the last business day of each month. The performance of each index is computed on the basis of price return. The performance is presented relative to the benchmark which consists of the equal weighted price performance of stocks in the S\&P 500 as of the last business day of each month. For Alpha Surprise model, the performance is also represented as relative to the market capitalization-weighted S\&P 500 benchmark.

The results of quantitative strategies presented here may differ from the S\&P 500 in that they are significantly less diversified, and, as such, their performance is more exposed to specific stock or sector results. Therefore investors following these strategies may experience greater volatility in their returns.

The performance results do not reflect transaction costs, tax withholdings or any investment advisory fees. Had these costs been reflected, the performance would have been lower. The performance results of individuals following the strategies presented here will differ from the performance contained in this report for a variety of reasons, including differences related to incurring transaction costs and/or investment advisory fees, as well as differences in the time and price that securities were acquired and disposed of, and differences in the weighting of such securities. The performance results of individuals following these strategies will also differ based on differences in treatment of dividends received, including the amount received and whether and when such dividends were reinvested.

## Dividend Yield and Dividend Growth Strategies

We also provide total returns for dividend oriented strategies (high dividend yield strategy and high dividend growth strategy). The total return performance calculation assumes that dividends paid on securities in a portfolio are deposited in a cash account on the ex-dividend date, and are not reinvested. The performance is presented relative to the equal weighted total returns index of stocks in the S\&P 500 as of the last business day of each month.

This report includes strategies for informational or descriptive purposes, and inclusion here is not equivalent to a recommendation of the strategy or portfolio.

Past performance should not and cannot be viewed as an indicator of future performance. A complete performance record is available upon request.

## Advances \& Declines

Advances and declines are based on the price returns of each stock for each relevant period. The portfolio rebalancing done each month constitutes the start of a new period for each stock in the portfolio. The performance period for the stock being removed will end when the stock is removed from the portfolio. For the stock being added, the performance period will begin when it is added to the portfolio.

## Definitions

Absolute return: Absolute return is calculated based on monthly returns and reflects simple price appreciation (depreciation) over the stated period. Stocks in each screen are equally weighted. Returns do not reflect dividend or transaction costs.

Dividend Discount Model Alpha: The implied return from the BofAML Quantitative Strategy three-stage dividend discount model less the required return from a Capital Asset Pricing Model. Presented as a decile rank.

Dividend Yield: Indicated dividend divided by month-end price.
Price/Book Value: Month-end price divided by the most recently reported book value per share.

Price/Cash Flow: Month-end price divided by the most recently reported cash flow. Cash flow is defined as earnings post extraordinary items plus depreciation.

Price/Free Cash Flow: Month-end price divided by most recently reported free cash flow. Free Cash flow is defined as earnings post extraordinary items plus depreciation minus capital expenditures.

Price/Sales: Month-end market value divided by most recently reported sales.

EVIEBITDA: Enterprise Value (Equity Market Capitalization + Long Term Debt + Short Term Debt + Preferred Stock + Minority Interest - Cash \& Cash Equivalents) divided by EBITDA (Reported Net Income + Special Items - Minority Interest + Interest Expense + Income Tax Expense + Depreciation and Amortization) - most recently reported.

Relative Strength: The ratio of the 30-week moving average of price to the 75week moving average.

Most Active: Stocks have the highest monthly share trading volume.
Low Price: Absolute price level of the stock at month-end.
5Wk/30Wk Moving Average: The ratio between the average daily closing price of a stock over five weeks versus that over thirty weeks.

10Wk/40Wk Moving Average: The ratio between the average daily closing price of a stock over ten weeks versus that over forty weeks.

Price/200-Day Moving Average: A ratio between month-end closing price and average closing price over the last 200 days.

Price Return - 12-Month Performance: Absolute price return over the last twelve months.

Price Return - 11-Month Performance: Absolute price return from one year ago, ignoring the most recent month.

Price Return - 9-Month Performance: Absolute price return over the last nine months.

Price Return - 3-Month Performance: Absolute price return over the last three months.

Price Return - 12-Month and 1-Month Performance: Equal weighted rank of stocks by (1) highest price return over the last twelve months and (2) highest price return over the most recently ended month.

Price Return - 12-Month and 1-Month Reversal: Equal weighted rank of stocks by (1) highest price return over the last twelve months and (2) lowest price return over the last one month.

Earnings Momentum: The difference between 12-month trailing EPS and yearago 12-month trailing EPS divided by year-ago 12-month trailing EPS.

Projected 5-Year EPS Growth: The five-year EPS growth rate estimated by BofAML Fundamental Equity Research. If no BofAML estimate exist, then I/B/E/S Mean Long Term Growth Estimate is used.

Earnings Torpedo: I/B/E/S FY2 estimate less latest actual annual EPS divided by month-end price.

Earnings Surprise: A forecast earnings surprise variable which compares BofAML estimates to those of the consensus after adjusting for the range of estimates. Stocks are ranked from 1 to 10, with 1 being among the most optimistic, relative to the consensus, 10 being among the most pessimistic. Consensus estimated earnings data are courtesy of I/B/E/S.

EPS Estimate Revision: The difference between the I/B/E/S FY1 estimate and that of three months ago divided by the absolute value of $\mathrm{I} / \mathrm{B} / \mathrm{E} / \mathrm{S}$ FY1 estimate of three months ago.

Beta: A measure of non-diversifiable risk. It is calculated using regression Strategy incorporating 60 months of price performance versus that of the S\&P 500.

Variability of EPS: The degree of variability in quarterly EPS over the past 5 years. Stocks are ranked from 10 to 1 with 10 being the most variable.

EPS Estimate Dispersion: The coefficient of variation among I/B/E/S FY2 estimates. Presented as a decile rank.

Dividend Growth: The growth between trailing 4-quarter total common dividends and year-ago trailing 4-quarter total common dividends.

Neglect-Institutional Ownership: Those companies with the lowest proportions of float-adjusted shares held by institutional owners are considered more neglected.

Neglect-Analyst Coverage: Those companies with the lowest number of analysts submitting ratings to FirstCall.

Firm Size: Month-end market value.

Foreign Exposure: The ratio of foreign sales to total sales.
Equity Duration: An adaptation of our Dividend Discount Model which measures the interest-rate sensitivity of a stock. Longer durations (higher numbers) suggest more interest-rate sensitivity.

P/E-to-Growth: Trailing twelve months P/E divided by the five-year EPS growth rate estimated by BofAML Fundamental Equity Research. If no BofAML estimate exist, then the IBES Mean Long Term Growth Estimate is used.

Return on Equity One-Year Average: Net income divided by average equity provided.

Return on Equity Five-Year Average: Five-year average return on equity.

Return on Assets: Net income plus interest and taxes as a percent of average total assets.

Return on Capital: The sum of net income, interest expense and minority interest, as a percent of average total invested capital which is inclusive of longterm debt, preferred stock, common equity, and minority interest.

Return on Equity One-Year Average (Adjusted for Debt): The ROE of companies with higher debt levels are considered lower than those of companies with lower debt levels based on their debt-to-equity ratios.

Return on Equity Five-Year Average (Adjusted for Debt): The average five year ROE of companies with higher debt levels are considered lower than those of companies with lower debt levels based on their debt-to-equity ratios.

## Link to Definitions

## Macro

Click here for definitions of commonly used terms.

## Important Disclosures

Due to the nature of strategic analysis, the issuers or securities recommended or discussed in this report are not continuously followed. Accordingly, investors must regard this report as providing stand-alone analysis and should not expect continuing analysis or additional reports relating to such issuers and/or securities.

Due to the nature of quantitative analysis, the issuers or securities recommended or discussed in this report are not continuously followed. Accordingly, investors must regard this report as providing stand-alone analysis and should not expect continuing analysis or additional reports relating to such issuers and/or securities.

BofA Merrill Lynch Research personnel (including the analyst(s) responsible for this report) receive compensation based upon, among other factors, the overall profitability of Bank of America Corporation, including profits derived from investment banking revenues.

## Other Important Disclosures

Officers of MLPF\&S or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments.

BofA Merrill Lynch Global Research policies relating to conflicts of interest are described at http://www.ml.com/media/43347.pdf.
"BofA Merrill Lynch" includes Merrill Lynch, Pierce, Fenner \& Smith Incorporated ("MLPF\&S") and its affiliates. Investors should contact their BofA Merrill Lynch representative or Merrill Lynch Global Wealth Management financial advisor if they have questions concerning this report.

Information relating to Non-US affiliates of BofA Merrill Lynch and Distribution of Affiliate Research Reports:
MLPF\&S distributes, or may in the future distribute, research reports of the following non-US affiliates in the US (short name: legal name): Merrill Lynch (France): Merrill Lynch Capital Markets (France) SAS; Merrill Lynch (Frankfurt): Merrill Lynch International Bank Ltd., Frankfurt Branch; Merrill Lynch (South Africa): Merrill Lynch South Africa (Pty) Ltd.; Merrill Lynch (Milan): Merrill Lynch International Bank Limited; MLI (UK): Merrill Lynch International; Merrill Lynch (Australia): Merrill Lynch Equities (Australia) Limited; Merrill Lynch (Hong Kong): Merrill Lynch (Asia Pacific) Limited; Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd.; Merrill Lynch (Canada): Merrill Lynch Canada Inc; Merrill Lynch (Mexico): Merrill Lynch Mexico, SA de CV, Casa de Bolsa; Merrill Lynch (Argentina): Merrill Lynch Argentina SA; Merrill Lynch (Japan): Merrill Lynch Japan Securities Co., Ltd.; Merrill Lynch (Seoul): Merrill Lynch International Incorporated (Seoul Branch); Merrill Lynch (Taiwan): Merrill Lynch Securities (Taiwan) Ltd.; DSP Merrill Lynch (India): DSP Merrill Lynch Limited; PT Merrill Lynch (Indonesia): PT Merrill Lynch Indonesia; Merrill Lynch (Israel): Merrill Lynch Israel Limited; Merrill Lynch (Russia): Merrill Lynch CIS Limited, Moscow; Merrill Lynch (Turkey I.B.): Merrill Lynch Yatirim Bank A.S.; Merrill Lynch (Turkey Broker): Merrill Lynch Menkul Değerler A.Ş.; Merrill Lynch (Dubai): Merrill Lynch International, Dubai Branch; MLPF\&S (Zurich rep. office): MLPF\&S Incorporated Zurich representative office; Merrill Lynch (Spain): Merrill Lynch Capital Markets Espana, S.A.S.V.; Merrill Lynch (Brazil): Bank of America Merrill Lynch Banco Multiplo S.A.

This research report has been approved for publication and is distributed in the United Kingdom to professional clients and eligible counterparties (as each is defined in the rules of the Financial Services Authority) by Merrill Lynch International and Banc of America Securities Limited (BASL), which are authorized and regulated by the Financial Services Authority and has been approved for publication and is distributed in the United Kingdom to retail clients (as defined in the rules of the Financial Services Authority) by Merrill Lynch International Bank Limited, London Branch, which is authorized by the Central Bank of Ireland and is subject to limited regulation by the Financial Services Authority - details about the extent of its regulation by the Financial Services Authority are available from it on request; has been considered and distributed in Japan by Merrill Lynch Japan Securities Co., Ltd., a registered securities dealer under the Financial Instruments and Exchange Act in Japan; is distributed in Hong Kong by Merrill Lynch (Asia Pacific) Limited, which is regulated by the Hong Kong SFC and the Hong Kong Monetary Authority; is issued and distributed in Taiwan by Merrill Lynch Securities (Taiwan) Ltd.; is issued and distributed in India by DSP Merrill Lynch Limited; and is issued and distributed in Singapore by Merrill Lynch International Bank Limited (Merchant Bank) and Merrill Lynch (Singapore) Pte Ltd. (Company Registration No.'s F 06872E and 198602883D respectively) and Bank of America Singapore Limited (Merchant Bank). Merrill Lynch International Bank Limited (Merchant Bank) and Merrill Lynch (Singapore) Pte Ltd. are regulated by the Monetary Authority of Singapore. Merrill Lynch Equities (Australia) Limited (ABN 65006276795 ), AFS License 235132 provides this report in Australia in accordance with section 911B of the Corporations Act 2001 and neither it nor any of its affiliates involved in preparing this research report is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this report in Brazil. Merrill Lynch (Dubai) is authorized and regulated by the Dubai Financial Services Authority (DFSA). Research reports prepared and issued by Merrill Lynch (Dubai) are prepared and issued in accordance with the requirements of the DFSA conduct of business rules.

Merrill Lynch (Frankfurt) distributes this report in Germany. Merrill Lynch (Frankfurt) is regulated by BaFin.
This research report has been prepared and issued by MLPF\&S and/or one or more of its non-US affiliates. MLPF\&S is the distributor of this research report in the US and accepts full responsibility for research reports of its non-US affiliates distributed to MLPF\&S clients in the US. Any US person receiving this research report and wishing to effect any transaction in any security discussed in the report should do so through MLPF\&S and not such foreign affiliates.

## General Investment Related Disclosures:

This research report provides general information only. Neither the information nor any opinion expressed constitutes an offer or an invitation to make an offer, to buy or sell any securities or other financial instrument or any derivative related to such securities or instruments (e.g., options, futures, warrants, and contracts for differences). This report is not intended to provide personal investment advice and it does not take into account the specific investment objectives, financial situation and the particular needs of any specific person. Investors should seek financial advice regarding the appropriateness of investing in financial instruments and implementing investment strategies discussed or recommended in this report and should understand that statements regarding future prospects may not be realized. Any decision to purchase or subscribe for securities in any offering must be based solely on existing public information on such security or the information in the prospectus or other offering document issued in connection with such offering, and not on this report.

Securities and other financial instruments discussed in this report, or recommended, offered or sold by Merrill Lynch, are not insured by the Federal Deposit Insurance Corporation and are not deposits or other obligations of any insured depository institution (including, Bank of America, N.A.). Investments in general and, derivatives, in particular, involve numerous risks, including, among others, market risk, counterparty default risk and liquidity risk. No security, financial instrument or derivative is suitable for all investors. In some cases, securities and other financial instruments may be difficult to value or sell and reliable information about the value or risks related to the security or financial instrument may be difficult to obtain. Investors should note that income from such securities and other financial
instruments, if any, may fluctuate and that price or value of such securities and instruments may rise or fall and, in some cases, investors may lose their entire principal investment. Past performance is not necessarily a guide to future performance. Levels and basis for taxation may change.

This report may contain a short-term trading idea or recommendation, which highlights a specific near-term catalyst or event impacting the company or the market that is anticipated to have a short-term price impact on the equity securities of the company. Short-term trading ideas and recommendations are different from and do not affect a stock's fundamental equity rating, which reflects both a longer term total return expectation and attractiveness for investment relative to other stocks within its Coverage Cluster. Short-term trading ideas and recommendations may be more or less positive than a stock's fundamental equity rating.

BofA Merrill Lynch is aware that the implementation of the ideas expressed in this report may depend upon an investor's ability to "short" securities or other financial instruments and that such action may be limited by regulations prohibiting or restricting "shortselling" in many jurisdictions. Investors are urged to seek advice regarding the applicability of such regulations prior to executing any short idea contained in this report.

Foreign currency rates of exchange may adversely affect the value, price or income of any security or financial instrument mentioned in this report. Investors in such securities and instruments, including ADRs, effectively assume currency risk.

UK Readers: The protections provided by the U.K. regulatory regime, including the Financial Services Scheme, do not apply in general to business coordinated by BofA Merrill Lynch entities located outside of the United Kingdom. BofA Merrill Lynch Global Research policies relating to conflicts of interest are described at http://www.ml.com/media/43347.pdf.

Officers of MLPF\&S or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments.

MLPF\&S or one of its affiliates is a regular issuer of traded financial instruments linked to securities that may have been recommended in this report. MLPF\&S or one of its affiliates may, at any time, hold a trading position (long or short) in the securities and financial instruments discussed in this report.

BofA Merrill Lynch, through business units other than BofA Merrill Lynch Global Research, may have issued and may in the future issue trading ideas or recommendations that are inconsistent with, and reach different conclusions from, the information presented in this report. Such ideas or recommendations reflect the different time frames, assumptions, views and analytical methods of the persons who prepared them, and BofA Merrill Lynch is under no obligation to ensure that such other trading ideas or recommendations are brought to the attention of any recipient of this report.

In the event that the recipient received this report pursuant to a contract between the recipient and MLPF\&S for the provision of research services for a separate fee, and in connection therewith MLPF\&S may be deemed to be acting as an investment adviser, such status relates, if at all, solely to the person with whom MLPF\&S has contracted directly and does not extend beyond the delivery of this report (unless otherwise agreed specifically in writing by MLPF\&S). MLPF\&S is and continues to act solely as a broker-dealer in connection with the execution of any transactions, including transactions in any securities mentioned in this report.

## Copyright and General Information regarding Research Reports:

Copyright 2012 Merrill Lynch, Pierce, Fenner \& Smith Incorporated. All rights reserved. iQmethod, iQmethod 2.0, iQprofile, iQtoolkit, iQworks are service marks of Merrill Lynch \& Co., Inc. iQanalytics®, iQcustom®, iQdatabase® are registered service marks of Merrill Lynch \& Co., Inc. This research report is prepared for the use of BofA Merrill Lynch clients and may not be redistributed, retransmitted or disclosed, in whole or in part, or in any form or manner, without the express written consent of BofA Merrill Lynch. BofA Merrill Lynch Global Research reports are distributed simultaneously to internal and client websites and other portals by BofA Merrill Lynch and are not publicly-available materials. Any unauthorized use or disclosure is prohibited. Receipt and review of this research report constitutes your agreement not to redistribute, retransmit, or disclose to others the contents, opinions, conclusion, or information contained in this report (including any investment recommendations, estimates or price targets) without first obtaining expressed permission from an authorized officer of BofA Merrill Lynch.

Materials prepared by BofA Merrill Lynch Global Research personnel are based on public information. Facts and views presented in this material have not been reviewed by, and may not reflect information known to, professionals in other business areas of BofA Merrill Lynch, including investment banking personnel. BofA Merrill Lynch has established information barriers between BofA Merrill Lynch Global Research and certain business groups. As a result, BofA Merrill Lynch does not disclose certain client relationships with, or compensation received from, such companies in research reports. To the extent this report discusses any legal proceeding or issues, it has not been prepared as nor is it intended to express any legal conclusion, opinion or advice. Investors should consult their own legal advisers as to issues of law relating to the subject matter of this report. BofA Merrill Lynch Global Research personnel's knowledge of legal proceedings in which any BofA Merrill Lynch entity and/or its directors, officers and employees may be plaintiffs, defendants, co-defendants or co-plaintiffs with or involving companies mentioned in this report is based on public information. Facts and views presented in this material that relate to any such proceedings have not been reviewed by, discussed with, and may not reflect information known to, professionals in other business areas of BofA Merrill Lynch in connection with the legal proceedings or matters relevant to such proceedings.

This report has been prepared independently of any issuer of securities mentioned herein and not in connection with any proposed offering of securities or as agent of any issuer of any securities. None of MLPF\&S, any of its affiliates or their research analysts has any authority whatsoever to make any representation or warranty on behalf of the issuer(s). BofA Merrill Lynch Global Research policy prohibits research personnel from disclosing a recommendation, investment rating, or investment thesis for review by an issuer prior to the publication of a research report containing such rating, recommendation or investment thesis.

Any information relating to the tax status of financial instruments discussed herein is not intended to provide tax advice or to be used by anyone to provide tax advice. Investors are urged to seek tax advice based on their particular circumstances from an independent tax professional.

The information herein (other than disclosure information relating to BofA Merrill Lynch and its affiliates) was obtained from various sources and we do not guarantee its accuracy. This report may contain links to third-party websites. BofA Merrill Lynch is not responsible for the content of any third-party website or any linked content contained in a third-party website. Content contained on such third-party websites is not part of this report and is not incorporated by reference into this report. The inclusion of a link in this report does not imply any endorsement by or any affiliation with BofA Merrill Lynch. Access to any third-party website is at your own risk, and you should always review the terms and privacy policies at third-party websites before submitting any personal information to them. BofA Merrill Lynch is not responsible for such terms and privacy policies and expressly disclaims any liability for them.

Certain outstanding reports may contain discussions and/or investment opinions relating to securities, financial instruments and/or issuers that are no longer current. Always refer to the most recent research report relating to a company or issuer prior to making an investment decision.

In some cases, a company or issuer may be classified as Restricted or may be Under Review or Extended Review. In each case, investors should consider any investment opinion relating to such company or issuer (or its security and/or financial instruments) to be suspended or withdrawn and should not rely on the analyses and investment opinion(s) pertaining to such issuer (or its securities and/or financial instruments) nor should the analyses or opinion(s) be considered a solicitation of any kind. Sales persons and financial advisors affiliated with MLPF\&S or any of its affiliates may not solicit purchases of securities or financial instruments that are Restricted or Under Review and may only solicit securities under Extended Review in accordance with firm policies.

Neither BofA Merrill Lynch nor any officer or employee of BofA Merrill Lynch accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this report or its contents.

## Monthly insights for equity management

## Cash deployment strategies led again in May

For the second consecutive month, strategies that align with the theme of returning cash to shareholders were the top-performing group (Chart 1). Dividend Yield was the best performing factor, down $2.9 \%$ on a total return basis compared to the S\&P 500 total return of $-7.1 \%$. DDM Valuation was also among the top five. Dividend Growth-which has actually been one of the most consistent strategies we follow despite the risk-on/risk-off nature of the market the last few years-outperformed again in May, as it has every month this year. It is currently the second best performing strategy year-to-date, up $9.4 \%$. We expect "bird in the hand" strategies to continue to outperform for both cyclical and secular reasons, due to the dynamics of low supply (record low payout ratios, protracted low interest rates) and high demand (retiring Baby Boomers seeking income, search for yield among pension funds, etc). For details, see our recent report: Seeking yields that can grow.

## Long-term trend factors also did well

Technical strategies, which made up the top five screens in April, outperformed again in last month. Six of the ten best performing factors in May were longer-term momentum factors. This suggests that leadership in May was similar to that of the past year. Relative Strength ( $30 \mathrm{wk} / 75 \mathrm{wk}$ ) was the second best performing factor in May ( $-4.2 \%$ ) and the best performing factor YTD (+10.1\%).

## Value and Risk strategies lagged

Value factors, including Earnings Yield and Price to Book, were among the worstperforming factors in May, with most posting negative double digit returns. When volatility is rising and profits growth is slowing, investors instead tend to pay up for higher quality investments. While return-based Quality factors (ROE, ROC, ROA) underperformed slightly last month, they still fared better than most other strategy groups. Risk factors fared worst, with High Beta (-12.8\%) the second worst performing factor. Year-to-date, risk factors are down over $20 \%$, while all other strategy groups are still in positive territory.

Chart 1: Average price performance by strategy group (top decile) - May 2012


Equity \& Quant Strategy | United States 08 June 2012 (Corrected)

# Bank of America Merrill Lynch 

| Savita Subramanian | +16468553878 |
| :--- | ---: |
| Equity \& Quant Strategist |  |
| MLPF\&S |  |
| savita.subramanian@baml.com |  |
| Dan Suzuki, CFA | +16468552827 |
| Equity Strategist |  |
| MLPF\&S |  |
| dan.suzuki@baml.com | +16468553327 |
| Jill Carey |  |
| Equity Strategist |  |
| MLPF\&S |  |
| jill.carey@baml.com |  |


| Top 5 screens in May | Perf |
| :--- | :--- |
| Dividend Yield (Total Return) | $-2.9 \%$ |
| Relative Strength (30wk/75wk) | $-4.2 \%$ |
| Price Returns (12-Month plus 1-Month) | $-4.3 \%$ |
| DDM Valuation | $-4.4 \%$ |
| Institutional Neglect | $-4.7 \%$ |
| S\&P 500 | $-6.3 \%$ |

Source: BofA Merrill Lynch US Equity and US Quant Strategy

| Btm 5 screens in May | Perf |
| :--- | ---: |
| Forward Earnings Yield | $-13.1 \%$ |
| High Beta | $-12.8 \%$ |
| High Foreign Exposure | $-11.4 \%$ |
| Low Price to Book Value | $-11.3 \%$ |
| Earnings Yield | $-11.3 \%$ |
| S\&P 500 | $-6.3 \%$ |

Source: BofA Merrill Lynch US Equity and US Quant Strategy
Disclaimer: The valuations and screens contained herein are useful in assessing comparative valuations and comparative earnings prospects and are not intended to recommend transactions relating to any specific security. These indicators should be used in investment decisions only with other factors including financial risk, investment risk, management strategies and operating and financial outlooks.

[^10]BofA Merrill Lynch does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.
Refer to important disclosures on page 64 to 66. Link to Definitions on page 63.

## Contents

Performance Table ..... 4
Advances and Declines ..... 5
MLQS Financial Confidence \& Thematic Indicators ..... 6
GARP STRATEGIES:
Alpha Surprise Model ..... 7
P/E-to-Growth ..... 8
VALUATION STRATEGIES:
Dividend Discount Model Alpha ..... 9
Earnings Yield ..... 10
Forward Earnings Yield ..... 11
Price/Book Value ..... 12
Price/Cash Flow ..... 13
Price/Free Cash Flow ..... 14
Price/Sales ..... 15
EV / EBITDA ..... 16
Free Cash Flow / EV ..... 17
CASH DEPLOYMENT STRATEGIES:
Dividend Yield ..... 18
Dividend Growth ..... 19
Share Repurchase ..... 20
TECHNICAL STRATEGIES:
Relative Strength -30wk/75wk Moving Average ..... 21
Relative Strength - 5wk/30wk Moving Average ..... 22
Relative Strength - 10wk/40wk Moving Average ..... 23
Price to Moving Average (200 -Day) ..... 24
Price Return - 12-Month Performance ..... 25
Price Return - 9-Month Performance ..... 26
Price Return - 3-Month Performance ..... 27
Price Return - 11-Month Performance ..... 28
Price Return - 12-Month and 1-Month Performance ..... 29
Price Return - 12-Month and 1-Month Reversal ..... 30
Most Active ..... 31
GROWTH STRATEGIES:
Earnings Momentum ..... 32
Projected Five-Year EPS Growth ..... 33
Positive Earnings Surprise ..... 34
Earnings Estimate Revision ..... 35
Equity Duration ..... 36
GROWTH (NEGATIVE) STRATEGIES:
Earnings Torpedo ..... 37
Negative Earnings Surprise ..... 38
QUALITY STRATEGIES:
One-Year Return On Equity ..... 39
Five-Year Return on Equity ..... 40
One-Year Return on Equity (Adjusted for Debt) ..... 41
Five-Year Return on Equity (Adjusted by Debt) ..... 42
Return on Assets ..... 43
Return on Capital ..... 44
RISK STRATEGIES:
Beta ..... 45
Variability of Earnings ..... 46
Estimate Dispersion ..... 47
Low Price ..... 48
MISCELLANEOUS STRATEGIES:
Neglect-Institutional Ownership ..... 49
Neglect-Analyst Coverage ..... 50
Size ..... 51
Foreign Exposure ..... 52
Valuation Backdrop ..... 53
Performance Calculation Methodology ..... 59
Definitions ..... 60

Cases 12-E-0201 \& 12-G-0202
Exhibit

Quantitative Strategies Performance as of 5/31/2012

| Quantitative Strategies | Category | 1 M | 3 M | 6 M | 12 M | YTD | $5 \mathrm{Yr}{ }^{+}$ | Inception Date |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dividend Yield (Total Return) | Corp Cash Deployment | -2.9 | -0.9 | 4.0 | 7.5 | 0.9 | -6.5 | 12/31/1988 |
| Dividend Yield (Price Return) | Corp Cash Deployment | -3.5 | -2.2 | 1.4 | 2.2 | -1.1 | -29.9 | 12/31/1988 |
| Relative Strength (30wk/75wk) | Technical | -4.2 | 1.3 | 8.2 | -6.6 | 10.1 | -41.7 | 8/31/1995 |
| Price Returns (12-Month plus 1-Month) | Technical | -4.3 | 0.6 | 8.4 | -3.6 | 7.9 | 29.3 | 1/31/2010 |
| DDM Valuation | Value | -4.4 | -2.4 | 8.0 | 0.5 | 5.9 | -27.1 | 12/31/1988 |
| Institutional Neglect | Miscellaneous | -4.7 | -3.1 | 2.9 | -4.0 | 1.7 | -15.9 | 12/31/1988 |
| Price Returns (12-Month) | Technical | -5.6 | -0.6 | 6.2 | -2.8 | 6.4 | 30.0 | 1/31/2010 |
| Price Returns (9-Month) | Technical | -5.7 | -0.2 | 4.1 | -4.8 | 4.5 | 25.7 | 1/31/2010 |
| Price Returns (11-Month since 1 year ago) | Technical | -6.3 | -1.0 | 4.1 | -6.4 | 4.8 | 24.1 | 1/31/2010 |
| S\&P 500 Index (Price Return) | Benchmark | -6.3 | -4.1 | 5.1 | -2.6 | 4.2 | -14.4 |  |
| High Duration | Growth | -6.7 | -4.7 | 2.9 | -5.4 | 4.6 | -2.1 | 12/31/1988 |
| Relative Strength (Price/200-Day Moving Avg) | Technical | -6.9 | -4.4 | 0.1 | -8.6 | 0.8 | 20.7 | 1/31/2010 |
| High Dividend Growth (Total Return) | Corp Cash Deployment | -6.9 | -3.3 | 9.1 | -0.5 | 9.4 | 12.6 | 12/31/2004 |
| ROE (1-Yr Avg. Adj. by Debt) | Quality | -7.0 | -4.5 | 6.4 | 1.2 | 6.2 | 3.2 | 4/30/1997 |
| High Dividend Growth (Price Return) | Corp Cash Deployment | -7.0 | -3.8 | 7.8 | -2.9 | 8.5 | -1.1 | 12/31/2004 |
| S\&P 500 Equal Weighted (Total Return) | Benchmark | -7.1 | -5.6 | 4.1 | -5.4 | 3.9 | 2.3 |  |
| Analyst Coverage Neglect | Miscellaneous | -7.1 | -8.5 | 2.3 | -9.4 | 1.6 | -12.6 | 12/31/1988 |
| S\&P 500 Equal Weighted (Price Return) | Benchmark | -7.3 | -6.2 | 2.9 | -7.3 | 3.0 | -8.0 |  |
| Stock Repurchase | Corp Cash Deployment | -7.4 | -5.6 | 5.1 | -1.1 | 3.1 | -9.9 | 12/31/2004 |
| ROA | Quality | -7.5 | -4.2 | 9.6 | 3.2 | 8.9 | 3.9 | 4/30/1997 |
| Price Returns (12-Month plus 1-Month Reversal) | Technical | -7.5 | -4.0 | -0.3 | -12.4 | 1.1 | 23.2 | 1/31/2010 |
| ROE (1-Yr Average) | Quality | -7.7 | -6.6 | 4.7 | -3.7 | 4.3 | 2.5 | 4/30/1997 |
| Price Returns (3-Month) | Technical | -7.7 | -7.5 | 4.1 | -5.5 | 4.5 | 30.1 | 1/31/2010 |
| MLQS Alpha Surprise Model | GARP | -7.8 | -7.5 | 2.8 | -5.6 | 1.6 | -2.5 | 12/31/1988 |
| ROE (5-Yr Average) | Quality | -7.8 | -6.5 | 2.4 | -3.3 | 2.5 | 14.1 | 4/30/1997 |
| ROE (5-Yr Avg. Adj. by Debt) | Quality | -7.8 | -7.3 | -0.6 | -7.3 | 0.6 | 4.9 | 4/30/1997 |
| ROC | Quality | -7.9 | -6.1 | 6.0 | -1.4 | 5.1 | -1.2 | 4/30/1997 |
| Relative Strength ( $5 \mathrm{wk} / 30 \mathrm{wk}$ ) | Technical | -8.1 | -8.3 | -4.1 | -9.2 | -3.2 | 25.5 | 1/31/2010 |
| Negative Earnings Surprise | Growth (Negative) | -8.2 | -6.4 | 2.1 | -8.1 | 2.7 | -14.1 | 12/31/1988 |
| Low Price to Sales | Value | -8.3 | -11.4 | -2.8 | -14.2 | -1.0 | 1.7 | 12/31/1988 |
| Relative Strength ( 10 wk/40wk) | Technical | -8.4 | -6.1 | -1.4 | -10.4 | -1.0 | 18.5 | 1/31/2010 |
| Most Active | Technical | -8.9 | -8.5 | 2.8 | -14.7 | 3.3 | -28.3 | 8/31/2003 |
| EPS Momentum | Growth | -9.0 | -8.4 | 3.7 | -14.6 | 3.9 | -28.1 | 12/31/1988 |
| Low EPS Torpedo | Growth (Negative) | -9.1 | -10.7 | -1.6 | -9.9 | -1.8 | -10.0 | 12/31/1988 |
| Upward Estimate Revisions | Growth | -9.2 | -9.8 | 1.4 | -12.8 | 0.8 | -32.9 | 12/31/1988 |
| Low Price to Free Cash Flow | Value | -9.3 | -9.0 | 3.9 | -9.9 | 3.4 | -5.7 | 7/30/2003 |
| Low Price | Risk | -9.3 | -11.1 | 2.3 | -22.7 | 1.0 | -3.2 | 12/31/1988 |
| High Projected 5-Yr Growth | Growth | -9.3 | -7.4 | 3.0 | -12.3 | 6.4 | -10.5 | 12/31/1988 |
| Positive Earnings Surprise | Growth | -9.5 | -10.1 | -1.1 | -12.0 | -0.6 | -8.0 | 12/31/1988 |
| High Free Cash Flow to EV | Value | -10.1 | -10.6 | 3.9 | -7.4 | 2.8 | 18.8 | 7/31/2010 |
| Low PE to GROWTH | GARP | -10.1 | -11.3 | 0.9 | -15.3 | 2.8 | -20.2 | 4/30/1997 |
| Small Size | Miscellaneous | -10.2 | -11.5 | 0.5 | -15.4 | 0.0 | 8.1 | 12/31/1988 |
| High Variability of EPS | Risk | -10.2 | -10.3 | -1.7 | -15.8 | -0.5 | -13.3 | 12/31/1988 |
| Low EV/EBITDA | Value | -10.6 | -15.8 | -4.1 | -13.2 | -4.9 | -9.2 | 9/30/2001 |
| High EPS Estimate Dispersion | Risk | -10.7 | -13.8 | -2.5 | -20.0 | 0.3 | -37.5 | 12/31/1988 |
| Low Price to Cash Flow | Value | -10.7 | -15.6 | -5.8 | -18.9 | -4.9 | -12.0 | 12/31/1988 |
| Low Price to Book Value | Value | -11.3 | -10.9 | 3.4 | -17.0 | 5.5 | -47.8 | 12/31/1988 |
| Earnings Yield | Value | -11.3 | -12.2 | -1.0 | -12.8 | -0.3 | -21.4 | 12/31/1988 |
| High Foreign Exposure | Miscellaneous | -11.4 | -13.0 | -2.8 | -18.0 | -0.6 | 7.8 | 12/31/1988 |
| High Beta | Risk | -12.8 | -13.7 | 2.5 | -22.2 | 3.6 | -7.1 | 12/31/1988 |
| Forward Earnings Yield | Value | -13.1 | -16.4 | -3.9 | -20.6 | -2.5 | -25.7 | 12/31/1988 |

[^11]${ }^{\dagger}$ For screens that have less than 5 years history, the performance is since inception

[^12]Cases 12-E-0201 \& 12-G-0202
DUAH
Exhibit
(KXD-20)
Bank of America

Advances and Declines as of 5/31/2012

| Quantitative Strategies | 1M |  | 3M |  | 6M |  | 12M |  | YTD |  | $5 \mathrm{Yr}{ }^{\dagger}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Advances | Declines | Advances | Declines | Advances | Declines | Advances | Declines | Advances | Declines | Advances | Declines |
| Dividend Yield (Total Return) | 22 | 28 | 94 | 56 | 183 | 117 | 340 | 259 | 522 | 325 | 1666 | 1323 |
| Dividend Yield (Price Return) | 17 | 33 | 86 | 64 | 171 | 129 | 317 | 282 | 135 | 115 | 1585 | 1403 |
| Relative Strength (30wk/75wk) | 9 | 41 | 80 | 70 | 175 | 125 | 295 | 304 | 154 | 96 | 1508 | 1487 |
| Price Returns (12-Month plus 1-Month) | 10 | 40 | 81 | 69 | 180 | 120 | 307 | 292 | 151 | 99 | 764 | 764 |
| DDM Valuation | 11 | 53 | 95 | 96 | 234 | 158 | 391 | 363 | 187 | 140 | 1906 | 1755 |
| Institutional Neglect | 14 | 36 | 78 | 72 | 170 | 130 | 301 | 299 | 138 | 112 | 1532 | 1465 |
| Price Returns (12-Month) | 10 | 40 | 82 | 68 | 179 | 121 | 309 | 290 | 151 | 99 | 746 | 746 |
| Price Returns (9-Month) | 9 | 41 | 82 | 67 | 174 | 125 | 310 | 288 | 147 | 102 | 753 | 753 |
| Price Returns (11-Month since 1 year ago) | 8 | 42 | 81 | 69 | 177 | 123 | 307 | 292 | 149 | 101 | 734 | 734 |
| High Duration | 9 | 41 | 69 | 81 | 168 | 132 | 296 | 304 | 145 | 105 | 1561 | 1436 |
| Relative Strength (Price/200-Day Moving Avg) | 5 | 45 | 68 | 81 | 161 | 138 | 296 | 302 | 136 | 113 | 746 | 746 |
| High Dividend Growth (Total Return) | 6 | 44 | 75 | 75 | 188 | 112 | 304 | 295 | 464 | 384 | 1579 | 1412 |
| ROE (1-Yr Avg. Adj. by Debt) | 9 | 41 | 74 | 76 | 178 | 122 | 308 | 292 | 151 | 99 | 1555 | 1441 |
| High Dividend Growth (Price Return) | 6 | 44 | 74 | 76 | 185 | 115 | 299 | 300 | 160 | 90 | 1552 | 1440 |
| Analyst Coverage Neglect | 7 | 35 | 49 | 77 | 151 | 124 | 265 | 335 | 120 | 104 | 1547 | 1512 |
| Stock Repurchase | 3 | 47 | 64 | 86 | 173 | 126 | 295 | 304 | 139 | 110 | 1574 | 1423 |
| ROA | 6 | 44 | 72 | 78 | 174 | 126 | 298 | 302 | 147 | 103 | 1575 | 1422 |
| Price Returns (12-Month plus 1-Month Reversal) | 7 | 43 | 73 | 77 | 159 | 141 | 282 | 318 | 134 | 116 | 738 | 738 |
| ROE (1-Yr Average) | 6 | 44 | 65 | 84 | 168 | 131 | 289 | 309 | 139 | 110 | 1573 | 1424 |
| Price Returns (3-Month) | 6 | 44 | 61 | 89 | 162 | 137 | 305 | 294 | 139 | 110 | 766 | 766 |
| MLQS Alpha Surprise Model | 6 | 44 | 56 | 80 | 152 | 126 | 256 | 295 | 121 | 112 | 1395 | 1306 |
| ROE (5-Yr Average) | 6 | 44 | 64 | 86 | 165 | 135 | 292 | 307 | 137 | 113 | 1589 | 1409 |
| ROE (5-Yr Avg. Adj. by Debt) | 7 | 43 | 65 | 85 | 166 | 134 | 295 | 305 | 140 | 110 | 1542 | 1456 |
| ROC | 5 | 45 | 66 | 84 | 171 | 129 | 294 | 306 | 140 | 110 | 1574 | 1426 |
| Relative Strength ( $5 \mathrm{wk} / 30 \mathrm{wk}$ ) | 4 | 46 | 60 | 89 | 150 | 149 | 298 | 300 | 128 | 121 | 746 | 746 |
| Negative Earnings Surprise | 6 | 58 | 91 | 109 | 229 | 175 | 370 | 386 | 193 | 143 | 1930 | 1881 |
| Low Price to Sales | 8 | 42 | 50 | 99 | 141 | 158 | 255 | 342 | 121 | 128 | 1497 | 1491 |
| Relative Strength ( $10 \mathrm{wk} / 40 \mathrm{wk}$ ) | 4 | 46 | 69 | 81 | 162 | 138 | 299 | 301 | 135 | 115 | 740 | 740 |
| Most Active | 5 | 45 | 62 | 88 | 167 | 133 | 268 | 331 | 140 | 110 | 1467 | 1519 |
| EPS Momentum | 3 | 47 | 58 | 92 | 169 | 131 | 267 | 332 | 141 | 109 | 1487 | 1508 |
| Low EPS Torpedo | 8 | 42 | 62 | 88 | 149 | 151 | 268 | 331 | 125 | 125 | 1483 | 1512 |
| Upward Estimate Revisions | 4 | 46 | 54 | 95 | 156 | 143 | 272 | 327 | 129 | 120 | 1493 | 1503 |
| Low Price to Free Cash Flow | 4 | 46 | 61 | 89 | 167 | 133 | 275 | 325 | 140 | 110 | 1536 | 1454 |
| Low Price | 5 | 45 | 54 | 95 | 162 | 137 | 250 | 348 | 131 | 118 | 1455 | 1533 |
| High Projected 5-Yr Growth | 5 | 45 | 68 | 85 | 166 | 140 | 276 | 330 | 147 | 109 | 1728 | 1519 |
| Positive Earnings Surprise | 7 | 64 | 76 | 127 | 193 | 197 | 338 | 439 | 161 | 166 | 1959 | 1949 |
| High Free Cash Flow to EV | 2 | 38 | 52 | 79 | 145 | 116 | 242 | 288 | 121 | 95 | 639 | 639 |
| Low PE to GROWTH | 3 | 47 | 55 | 95 | 158 | 142 | 255 | 345 | 137 | 113 | 1525 | 1469 |
| Small Size | 4 | 46 | 52 | 98 | 156 | 144 | 258 | 342 | 127 | 123 | 1471 | 1521 |
| High Variability of EPS | 5 | 58 | 76 | 115 | 205 | 180 | 339 | 433 | 170 | 148 | 1975 | 1950 |
| Low EV/EBITDA | 6 | 44 | 44 | 106 | 146 | 154 | 266 | 334 | 119 | 131 | 1522 | 1472 |
| High EPS Estimate Dispersion | 7 | 47 | 51 | 107 | 148 | 163 | 262 | 351 | 127 | 133 | 1742 | 1835 |
| Low Price to Cash Flow | 5 | 45 | 42 | 108 | 136 | 164 | 238 | 360 | 115 | 135 | 1483 | 1507 |
| Low Price to Book Value | 4 | 46 | 59 | 93 | 169 | 135 | 257 | 349 | 147 | 106 | 1443 | 1574 |
| Earnings Yield | 2 | 48 | 53 | 97 | 160 | 140 | 267 | 333 | 136 | 114 | 1519 | 1475 |
| High Foreign Exposure | 0 | 50 | 50 | 100 | 144 | 156 | 243 | 357 | 129 | 121 | 1545 | 1448 |
| High Beta | 0 | 52 | 49 | 105 | 158 | 149 | 245 | 364 | 139 | 118 | 1467 | 1551 |
| Forward Earnings Yield | 2 | 48 | 40 | 109 | 141 | 158 | 229 | 370 | 121 | 128 | 1452 | 1536 |

${ }^{\dagger}$ For screens that have less than 5 years history, the advance/decline data is since inception.
Source: BofA Merrill Lynch US Equity and US Quant Strategy

## MLQS Financial Confidence \& Thematic Indicators

Financial Confidence


Source: BofA Merrill Lynch US Quantitative Strategy
 is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

Thematic (High 5-Year Projected Growth vs. High EPS Yield)


Source: BofA Merrill Lynch US Quantitative Strategy
 is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

## Alpha Surprise Model

## Top 50 S\&P 500 Companies By Alpha Surprise Model

Alpha Surprise Model: a $25 \% 75 \%$ combination of the DDM "Alpha" and the Positive EPS "Surprise" Models.


868788899091929394959697989900010203040506070809101112


| Absolute Returns |  |
| :--- | ---: |
| L ast 1 M on th | $-7.76 \%$ |
| L ast 3 M on ths | $-7.48 \%$ |
| L ast 6 M on ths | $2.80 \%$ |
| L ast 12 Month s | $-5.57 \%$ |
| 2012 Y TD | $1.60 \%$ |

Screen for May

| Mo. In |  |  | Alpha Surprise | Price |  | Мо. In |  |  | Alpha Surprise | Price |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn | Company | Ticker | Score | 05/31/2012 | S\&P | Scrn | Company | Ticker | Score | 05/31/2012 | S\&P |
| 4 | AUTOZONE INC | AZO | 1.00 | 380.26 | B+ | New | DEVON ENERGY CORP | DVN | 2.25 | 59.52 | B- |
| 2 | APPLE INC | AAPL | 1.00 | 577.73 | B | New | HESS CORP | HES | 2.25 | 43.70 | A- |
| 5 | DIAMOND OFFSHRE DRILLING INC | DO | 1.00 | 58.18 | B | 2 | MICROSOFT CORP | MSFT | 2.25 | 29.19 | A- |
| 2 | GOODYEAR TIRE \& RUBBER CO | GT | 1.00 | 10.45 | C | New | SPECTRA ENERGY CORP | SE | 2.25 | 28.71 | NA |
| 2 | M \& T BANK CORP | MTB | 1.00 | 81.32 | B+ | 6 | BED BATH \& BEYOND INC | BBBY | 2.50 | 72.25 | B+ |
| 6 | NETFLIX INC | NFLX | 1.00 | 63.44 | B | 3 | BEMIS CO INC | BMS | 2.50 | 30.36 | B+ |
| 2 | O'REILLY AUTOMOTIVE INC | ORLY | 1.00 | 95.79 | B+ | 5 | CHESAPEAKE ENERGY CORP | CHK | 2.50 | 16.90 | B- |
| 2 | WATSON PHARMACEUTICALS INC | WPI | 1.00 | 71.29 | B- | 2 | CONSOL ENERGY INC | CNX | 2.50 | 28.08 | B |
| 2 | WESTERN DIGITAL CORP | WDC | 1.00 | 31.39 | B | 4 | DOLLAR TREE INC | DLTR | 2.50 | 103.18 | B+ |
| 8 | RAYTHEON CO | RTN | 1.25 | 50.32 | A- | 2 | FEDERATED INVESTORS INC | FII | 2.50 | 20.09 | B+ |
| New | BIOGEN IDEC INC | BIIB | 1.75 | 130.75 | B | 2 | FIRST HORIZON NATIONAL CORP | FHN | 2.50 | 8.48 | B |
| 4 | BOEING CO | BA | 1.75 | 69.61 | B+ | 8 | FLUOR CORP | FLR | 2.50 | 46.88 | A- |
| 2 | LIFE TECHNOLOGIES CORP | LIFE | 1.75 | 40.91 | B | New | GENERAL DYNAMICS CORP | GD | 2.50 | 64.01 | A+ |
| 4 | WELLS FARGO \& CO | WFC | 1.75 | 32.05 | A- | 2 | PACCAR INC | PCAR | 2.50 | 37.57 | B+ |
| 4 | XILINX INC | XLNX | 1.75 | 31.97 | B | 2 | SANDISK CORP | SNDK | 2.50 | 32.70 | B- |
| 2 | BB\&T CORP | BBT | 2.00 | 30.22 | B+ | New | TRAVELERS COS INC | TRV | 2.50 | 62.49 | B+ |
| 19 | BOSTON SCIENTIFIC CORP | BSX | 2.00 | 5.74 | C | 2 | VALERO ENERGY CORP | VLO | 2.50 | 21.10 | B |
| 8 | EXXON MOBIL CORP | XOM | 2.00 | 78.63 | A+ | 8 | ALLERGAN INC | AGN | 2.75 | 90.25 | B+ |
| 5 | SOUTHERN CO | so | 2.00 | 45.91 | A- | New | APOLLO GROUP INC -CLA | APOL | 2.75 | 31.82 | B+ |
| 10 | TERADATA CORP | TDC | 2.00 | 66.48 | NA | New | DISCOVERY COMMUNICATIONS INC | DISCA | 2.75 | 50.10 | NA |
| 3 | APACHE CORP | APA | 2.25 | 81.38 | A- | New | ENTERGY CORP | ETR | 2.75 | 64.53 | A+ |
| 8 | AUTONATION INC | AN | 2.25 | 36.02 | B | New | STERICYCLE INC | SRCL | 2.75 | 87.26 | B+ |
| 8 | CARMAX INC | KMX | 2.25 | 28.21 | B+ | 4 | XCEL ENERGY INC | XEL | 2.75 | 28.02 | B |
|  |  |  |  |  |  | 2 | ZIONS BANCORPORATION | ZION | 2.75 | 19.03 | B |

## P/E-to-Growth

## Top 50 S\&P 500 Companies By Low PE to GROWTH

P/E-to-Growth: Trailing twelve months P/E divided by the five-year EPS growth rate estimated by BofAML Fundamental Equity Research. If no BofAML estimate exist, then IBES Mean Long Term Growth Estimate is used.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance


| Absolute Returns |  |
| :--- | ---: |
| Last 1 Month | $-10.14 \%$ |
| Last 3 Months | $-11.28 \%$ |
| Last 6 Months | $0.93 \%$ |
| Last 12 M onths | $-15.27 \%$ |
| 2012 YTD | $2.77 \%$ |

Screen for May

Mo.

| In | PE/ | Price |
| :--- | ---: | ---: |
| Scrn. Company | Ticker | Growth |

Mo.
In PEI Price
Scrn. Company

Ticker Growth 05/31/2012

| 2 | WESTERN DIGITAL CORP | WDC | 0.18 | 31.39 |
| :--- | :--- | :--- | :--- | ---: |
| 15 | AMERICAN INTERNATIONAL GROUIAIG | 0.26 | 29.18 |  |
| 5 | FORD MOTOR CO | F | 0.28 | 10.56 |
| 8 | GOODYEAR TIRE \& RUBBER CO | GT | 0.29 | 10.45 |
| 14 | COMERICA INC | CMA | 0.35 | 30.42 |
| 13 | CLIFFS NATURAL RESOURCES INC CLF | 0.36 | 47.78 |  |
| 36 | METROPCS COMMUNICATIONS INCPCS | 0.40 | 6.40 |  |
| 6 | JOY GLOBAL INC | JOY | 0.40 | 55.86 |
| 9 | WYNN RESORTS LTD | WYNN | 0.42 | 103.04 |
| 7 | DENBURY RESOURCES INC | DNR | 0.42 | 15.12 |
| 14 | FIFTH THIRD BANCORP | FITB | 0.47 | 13.35 |
| 4 | NABORS INDUSTRIES LTD | NBR | 0.49 | 13.55 |
| 8 | SUNTRUST BANKS INC | STI | 0.49 | 22.92 |
| 14 | M \& T BANK CORP | MTB | 0.52 | 81.32 |
| 14 | PEABODY ENERGY CORP | BTU | 0.53 | 23.36 |
| 6 | HALLIBURTON CO | HAL | 0.55 | 30.06 |
| 32 | DIAMOND OFFSHRE DRILLING INC | DO | 0.56 | 58.18 |
| 25 | DIRECTV | DTV | 0.56 | 44.45 |
| 8 | INTERPUBLIC GROUP OF COS | IPG | 0.57 | 10.39 |
| 10 | JOHNSON CONTROLS INC | JCI | 0.57 | 30.14 |
| 14 | KEYCORP | KEY | 0.58 | 7.50 |
| 10 | VIACOM INC | VIAB | 0.60 | 47.73 |
| 5 | CHESAPEAKE ENERGY CORP | CHK | 0.60 | 16.90 |
| 2 | E TRADE FINANCIAL CORP | ETFC | 0.60 | 8.49 |
| 11 | COVENTRY HEALTH CARE INC | CVH | 0.60 | 30.40 |

11 COVENTRY HEALTH CARE INC CVH $0.60 \quad 30.40$

| 4 | ASSURANT INC | AIZ | 0.61 | 33.38 |
| :--- | :--- | :--- | :--- | ---: |
| 8 | METLIFE INC | MET | 0.61 | 29.21 |
| 2 | TEXTRON INC | TXT | 0.62 | 23.63 |
| 5 | EQT CORP | EQT | 0.64 | 46.38 |
| 3 | SANDISK CORP | SNDK | 0.65 | 32.70 |
| 3 | HELMERICH \& PAYNE | HP | 0.65 | 45.30 |
| 5 | BAKER HUGHES INC | BHI | 0.66 | 41.73 |
| 8 | BB\&T CORP | BBT | 0.66 | 30.22 |
| 26 | CORNING INC | GLW | 0.67 | 12.99 |
| 9 | FLOWSERVE CORP | FLS | 0.67 | 102.78 |
| 8 | U S BANCORP | USB | 0.67 | 31.11 |
| 6 | BORGWARNER INC | BWA | 0.68 | 71.75 |
| 4 | DEERE \& CO | DE | 0.68 | 73.87 |
| 5 | AUTONATION INC | AN | 0.68 | 36.02 |
| 17 | DISCOVERY COMMUNICATIONS INCDISCA | 0.69 | 50.10 |  |
| New | NETFLIX INC | NFLX | 0.69 | 63.44 |
| 3 | NEWFIELD EXPLORATION CO | NFX | 0.69 | 29.96 |
| New | NEWS CORP | NWSA | 0.71 | 19.20 |
| 2 | CATERPILLAR INC | CAT | 0.72 | 87.62 |
| New | CUMMINS INC | CMI | 0.74 | 96.95 |
| 4 | NORFOLK SOUTHERN CORP | NSC | 0.74 | 65.52 |
| New | CITIGROUP INC | C | 0.75 | 26.51 |
| 4 | BOEING CO | BA | 0.75 | 69.61 |
| 9 | DISCOVER FINANCIAL SVCS INC | DFS | 0.75 | 33.11 |
| New | TE CONNECTIVITY LTD | TEL | 0.76 | 31.42 |

## Dividend Discount Model Alpha

## Top S\&P 500 Companies By DDM ALPHA

Dividend Discount Model Alpha: The implied return from the BofAML Quantitative Strategy three-stage dividend discount model less the required return from a Capital Asset Pricing Model. Presented as a decile rank.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance


| Absolute Returns |  |
| :--- | ---: |
| Last 1 Month | $-4.40 \%$ |
| Last 3 Months | $-2.41 \%$ |
| Last 6 Months | $8.01 \%$ |
| Last 12 Months | $0.46 \%$ |
| 2012 YTD | $5.93 \%$ |

Screen for May

| M 0 . |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| In |  |  | D D M | Price |
| Scrn | Company | Ticker | Alpha | 05/31/2012 |
| 11 | ABBOTT LABORATORIES | ABT | 1 | 61.79 |
| 6 | AUTOZONE INC | AZO | 1 | 380.26 |
| 3 | APPLE INC | AAPL | 1 | 577.73 |
| 11 | BAXTER INTERNATIONAL INC | BAX | 1 | 50.62 |
| 19 | CELGENE CORP | CELG | 1 | 68.25 |
| 104 | COLGATE-PALMOLIVE CO | CL | 1 | 98.30 |
| 14 | COMERICA INC | CMA | 1 | 30.42 |
| 28 | DIAMOND OFFSHRE DRILLING INC | DO | 1 | 58.18 |
| 11 | DIRECTV | DTV | 1 | 44.45 |
| 6 | DOLLAR TREE INC | DLTR | 1 | 103.18 |
| 6 | FAMILY DOLLAR STORES | FDO | 1 | 67.75 |
| 17 | FIRST HORIZON NATIONAL CORP | FHN | 1 | 8.48 |
| 41 | GENERAL M ILLS INC | GIS | 1 | 38.28 |
| 4 | GOODYEAR TIRE \& RUBBER CO | G T | 1 | 10.45 |
| 37 | JOHNSON \& JOHNSON | JN J | 1 | 62.43 |
| 5 | KEYCORP | KEY | 1 | 7.50 |
| 30 | KROGER CO | KR | 1 | 22.01 |
| 8 | LORILLARD INC | LO | 1 | 123.60 |
| 14 | $M$ \& T BANK CORP | M TB | 1 | 81.32 |
| 36 | METROPCS COMMUNICATIONS IN | PCS | 1 | 6.40 |
| 11 | NETFLIX INC | NFLX | 1 | 63.44 |
| 6 | O'REILLY AUTOMOTIVE INC | ORLY | 1 | 95.79 |
| 8 | SUNTRUST BANKS INC | STI | 1 | 22.92 |
| 47 | WAL-MART STORES INC | WM T | 1 | 65.82 |
| 2 | WATSON PHARMACEUTICALS INC | WPI | 1 | 71.29 |
| 2 | WESTERN DIGITAL CORP | WDC | 1 | 31.39 |
| 4 | WYNN RESORTS LTD | WYNN | 1 | 103.04 |
| 14 | XILINX INC | XLNX | 1 | 31.97 |
| 4 | AGL RESOURCES INC | GAS | 2 | 37.48 |
| New | ALEXION PHARMACEUTICALS INC | ALXN | 2 | 90.57 |
| 11 | ALTERA CORP | ALTR | 2 | 33.41 |


| M 0 . |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| In |  |  | D D M | Price |
| Scrn | Company | Ticker | Alpha | 05/31/2012 |
| 8 | ALTRIA GROUP INC | M O | 2 | 32.19 |
| 6 | AMGEN INC | AM G N | 2 | 69.52 |
| 8 | APOLLO GROUP INC -CLA | APOL | 2 | 31.82 |
| 11 | BARD (C.R.) INC | $B C R$ | 2 | 97.19 |
| 8 | $B B \& T C O R P$ | B BT | 2 | 30.22 |
| 29 | CHUBB CORP | CB | 2 | 72.07 |
| 42 | CLOROX COIDE | CLX | 2 | 68.80 |
| 16 | COMCAST CORP | CMCSA | 2 | 28.91 |
| 8 | CONSOLIDATED EDISON INC | ED | 2 | 60.36 |
| 28 | DAVITA INC | DVA | 2 | 81.25 |
| 20 | DISCOVERY COMMUNICATIONS INC | DISCA | 2 | 50.10 |
| 5 | DUKE ENERGY CORP | DUK | 2 | 21.98 |
| 2 | ENTERGY CORP | ETR | 2 | 64.53 |
| 5 | EXXON MOBIL CORP | XOM | 2 | 78.63 |
| 29 | GILEAD SCIENCES INC | GILD | 2 | 49.95 |
| 18 | HEWLETT-PACKARDCO | HPQ | 2 | 22.68 |
| 33 | INTL BUSINESS MACHINES CORP | IBM | 2 | 192.90 |
| 34 | KIM BERLY-CLARK CORP | K M B | 2 | 79.35 |
| 28 | KELLOGG CO | K | 2 | 48.78 |
| 37 | LABORATORY CP OF AMER HLDGS L | LH | 2 | 83.28 |
| 2 | PEPSICO INC | PEP | 2 | 67.85 |
| 30 | PG\&E CORP | PCG | 2 | 43.70 |
| 135 | PROCTER \& GAMBLECO | PG | 2 | 62.29 |
| 30 | PROGRESS ENERGY INC | PGN | 2 | 54.82 |
| 39 | QUEST DIAGNOSTICS INC | DGX | 2 | 56.90 |
| New | RAYTHEONCO | RTN | 2 | 50.32 |
| 21 | SOUTHERN CO | SO | 2 | 45.91 |
| 2 | ST JUDE MEDICAL INC | STJ | 2 | 38.42 |
| New | STERICYCLE INC | SRCL | 2 | 87.26 |
| 5 | U S BANCORP | U SB | 2 | 31.11 |
| 40 | WISCONSIN ENERGY CORP | WEC | 2 | 37.84 |
| 27 | XCEL ENERGY INC | XEL | 2 | 28.02 |

Earnings Yield
Top 50 S\&P 500 Companies By EARNINGS YIELD
Earnings Yield: Trailing 12-month EPS divided by month-end price.


Screen for May
Mo.

| In |  |  | Earnings | Price | In |  |  | Earning | Price |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn | Company | Ticker | Yield | 05/31/2012 | Scrn | Company | Ticker | Yield | 05/31/2012 |
| 26 | FORD MOTOR CO | F | 47.44\% | 10.56 | 6 | APACHE CORP | APA | 13.34\% | 81.38 |
| 16 | AMERICAN INTERNATIONAL GROUI |  | 37.83\% | 29.18 | 13 | DISCOVER FINANCIAL SVCS INC | DFS | 13.29\% | 33.11 |
| 14 | CLIFFS NATURAL RESOURCES INC |  | 23.40\% | 47.78 | 7 | VALERO ENERGY CORP | VLO | 12.94\% | 21.10 |
| 10 | MARATHON PETROLEUM CORP | MPC | 19.21\% | 36.07 | 38 | AETNA INC | AET | 12.84\% | 40.89 |
| 4 | ASSURANT INC | AIZ | 18.27\% | 33.38 | 5 | XEROX CORP | XRX | 12.74\% | 7.22 |
| 8 | METLIFE INC | MET | 18.21\% | 29.21 | 7 | GAMESTOP CORP | GME | 12.67\% | 19.18 |
| 5 | CONOCOPHILLIPS | COP | 17.70\% | 52.16 | 2 | AFLAC INC | AFL | 12.60\% | 40.08 |
| 4 | NEWFIELD EXPLORATION CO | NFX | 16.72\% | 29.96 | 11 | FREEPORT-MCMORAN COP\&GOLD | FCX | 12.58\% | 32.04 |
| 4 | CHESAPEAKE ENERGY CORP | CHK | 15.86\% | 16.90 | 26 | CORNING INC | GLW | 12.47\% | 12.99 |
| 5 | PEABODY ENERGY CORP | BTU | 15.84\% | 23.36 | New | JOY GLOBAL INC | JOY | 12.33\% | 55.86 |
| 20 | LEXMARK INTL INC -CL A | LXK | 15.79\% | 25.01 | 11 | KEYCORP | KEY | 12.27\% | 7.50 |
| 7 | TESORO CORP | TSO | 15.69\% | 22.12 | 4 | WESTERN UNION CO | WU | 11.77\% | 16.40 |
| 23 | CAPITAL ONE FINANCIAL CORP | COF | 15.16\% | 51.37 | 5 | TERADYNE INC | TER | 11.76\% | 14.45 |
| 3 | PITNEY BOWES INC | PBI | 14.74\% | 13.64 | New | DENBURY RESOURCES INC | DNR | 11.71\% | 15.12 |
| 3 | APOLLO GROUP INC -CLA | APOL | 14.36\% | 31.82 | 2 | FIFTH THIRD BANCORP | FITB | 11.69\% | 13.35 |
| 10 | DELL INC | DELL | 14.27\% | 12.33 | 16 | HEWLETT-PACKARD CO | HPQ | 11.51\% | 22.68 |
| 28 | GANNETT CO | GCI | 14.01\% | 13.06 | 2 | METROPCS COMMUNICATIONS INC | PCS | 11.41\% | 6.40 |
| 7 | CF INDUSTRIES HOLDINGS INC | CF | 13.99\% | 170.96 | 3 | HALLIBURTON CO | HAL | 11.31\% | 30.06 |
| 8 | CHEVRON CORP | CVX | 13.97\% | 98.31 | 14 | CONSTELLATION BRANDS | STZ | 11.30\% | 19.29 |
| 2 | WESTERN DIGITAL CORP | WDC | 13.86\% | 31.39 | New | DEVRY INC | DV | 11.20\% | 27.33 |
| 9 | CITIGROUP INC | C | 13.84\% | 26.51 | New | SANDISK CORP | SNDK | 11.13\% | 32.70 |
| 11 | COVENTRY HEALTH CARE INC | CVH | 13.82\% | 30.40 | New | DIAMOND OFFSHRE DRILLING INC | DO | 11.10\% | 58.18 |
| 11 | L-3 COMMUNICATIONS HLDGS INC | LLL | 13.68\% | 68.19 | 5 | RAYTHEON CO | RTN | 11.07\% | 50.32 |
| 14 | JPMORGAN CHASE \& CO | JPM | 13.60\% | 33.15 | New | INTERPUBLIC GROUP OF COS | IPG | 10.97\% | 10.39 |
| 8 | NORTHROP GRUMMAN CORP | NOC | 13.38\% | 58.75 | 6 | WELLPOINT INC | WLP | 10.94\% | 67.39 |

## Forward Earnings Yield

Top 50 S\&P 500 Companies By FORWARD EARNINGS YIELD
Earnings Yield: Rolling 12-month Forward EPS divided by month-end price.


868788899091929394959697989900010203040506070809101112

| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $-13.05 \%$ |
| Last 3 M onths | $-16.43 \%$ |
| Last 6 M onths | $-3.91 \%$ |
| Last 12 M onths | $-20.59 \%$ |
| 2012 YTD | $-2.52 \%$ | e: BofA Merrill Lynch US Quantitative Strategy

The shaded area in performance chart shows back tested results during the period from month end May1986 to month end December 1988. The unshaded
 portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for May


## Price/Book Value

## Top 50 S\&P 500 Companies By LOW PRICE/BOOK

Price/Book Value: Month-end price divided by latest reported book value per share.


868788899091929394959697989900010203040506070809101112


| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $-11.27 \%$ |
| Last 3 M onths | $-10.89 \%$ |
| Last 6 M onths | $3.37 \%$ |
| Last 12 M onths | $-16.99 \%$ |
| 2012 YTD | $5.46 \%$ |

The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

| Screen for May Mo. |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| In |  |  | Pricel | Price |
| Scrn | Company | Ticker | Book | 05/31/2012 |
| 78 | GENWORTH FINANCIAL INC | GNW | 0.17 | 5.24 |
| 10 | ALPHA NATURAL RESOURCES INC | ANR | 0.31 | 10.48 |
| 6 | FIRST SOLAR INC | FSLR | 0.34 | 12.56 |
| 45 | HARTFORD FINANCIAL SERVICES | HIG | 0.36 | 16.82 |
| 43 | BANK OF AMERICA CORP | BAC | 0.37 | 7.35 |
| 13 | CITIGROUP INC | C | 0.43 | 26.51 |
| 29 | MORGAN STANLEY | M S | 0.43 | 13.36 |
| 44 | LINCOLN NATIONAL CORP | LNC | 0.44 | 20.67 |
| 24 | E TRADE FINANCIAL CORP | ETFC | 0.48 | 8.49 |
| 29 | NRG ENERGY INC | NR G | 0.48 | 15.32 |
| 17 | AMERICAN INTERNATIONAL GROUI | AIG | 0.51 | 29.18 |
| 5 | WPX ENERGY INC | WPX | 0.52 | 14.67 |
| 32 | METLIFEINC | MET | 0.53 | 29.21 |
| 38 | ASSURANT INC | AIZ | 0.58 | 33.38 |
| 25 | PRUDENTIAL FINANCIAL INC | PRU | 0.62 | 46.45 |
| 41 | SUNTRUST BANKS INC | STI | 0.62 | 22.92 |
| 49 | LEGG MASON INC | LM | 0.63 | 25.45 |
| 67 | REGIONS FINANCIAL CORP | RF | 0.63 | 6.29 |
| 11 | ALCOA INC | AA | 0.65 | 8.55 |
| 23 | XL GROUP PLC | XL | 0.66 | 20.42 |
| 3 | NABORS INDUSTRIES LTD | NBR | 0.68 | 13.55 |
| 10 | GOLDMAN SACHS GROUP INC | GS | 0.69 | 95.70 |
| 26 | JPMORGAN CHASE \& CO | JPM | 0.70 | 33.15 |
| 37 | UNUM GROUP | UNM | 0.70 | 19.95 |
| 14 | BANK OF NEW YORK MELLON COR | BK | 0.71 | 20.36 |



## Price/Cash Flow

## Top 50 S\&P 500 Companies By LOW PRICE/CASH FLOW

Price/Cash Flow: Month-end price divided by latest reported cash flow. Cash flow is defined as earnings post extraordinary items plus depreciation.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance


| Absolute Returns |  |
| :--- | ---: |
| Last 1 Month | $-10.67 \%$ |
| Last 3 M onths | $-15.63 \%$ |
| Last 6 M onths | $-5.83 \%$ |
| Last 12 Months | $-18.91 \%$ |
| 2012 YTD | $-4.86 \%$ |

Screen for May

Mo.

| In |  | Price I | Price |  |
| :--- | :--- | :--- | :--- | ---: |
| Scrn. | Company | Ticker | Cash Flo | 05/31/2012 |

Mo.

| In |  | Price I | Price |  |
| :--- | :--- | :--- | :--- | ---: |
| Scrn. | Company | Ticker | Cash Flo | 05/31/2012 |

## Price/Free Cash Flow

## Top 50 S\&P 500 Companies By LOW PRICE/FREE CASH FLOW

Price/Free Cash Flow: Month-end price divided by latest reported free cash flow. Free Cash Flow is defined as the earnings after extraordinary items plus depreciation minus capital expenditures.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end May 1986 to month end July 2003. The unshaded portion represents actual performance since August 2003. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance



| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $-9.27 \%$ |
| Last 3 M onths | $-8.98 \%$ |
| Last 6 M onths | $3.87 \%$ |
| Last 12 Months | $-9.87 \%$ |
| 2012 YTD | $3.37 \%$ |

Screen for May

| Mo. In |  |  | Price I Free | Price | Mo. In |  |  | Price $/$ <br> Free | Price |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn. | Company | Ticker | Cash Flo | 05/31/2012 | Scrn. | Company | Ticker | Cash Flo | 05/31/2012 |
| 35 | FORD MOTOR CO | F | 1.99 | 10.56 | 7 | TERADYNE INC | TER | 8.22 | 14.45 |
| 8 | NETFLIX INC | NFLX | 2.98 | 63.44 | 14 | CONSTELLATION BRANDS | STZ | 8.27 | 19.29 |
| 8 | PITNEY BOWES INC | PBI | 3.48 | 13.64 | 2 | LSI CORP | LSI | 8.32 | 6.65 |
| 14 | XEROX CORP | XRX | 4.55 | 7.22 | 11 | HUNTINGTON BANCSHARES | HBAN | 8.34 | 6.54 |
| 20 | LEXMARK INTL INC -CL A | LXK | 5.21 | 25.01 | 4 | CENTERPOINT ENERGY INC | CNP | 8.41 | 20.23 |
| 6 | FRONTIER COMMUNICATIONS COF |  | 5.38 | 3.74 | 4 | STAPLES INC | SPLS | 8.47 | 13.14 |
| 28 | GANNETT CO | GCl | 5.63 | 13.06 | 5 | RAYTHEON CO | RTN | 8.62 | 50.32 |
| 13 | TESORO CORP | TSO | 5.72 | 22.12 | 8 | CABLEVISION SYS CORP -CL A | CVC | 8.82 | 11.44 |
| 3 | MARATHON PETROLEUM CORP | MPC | 6.06 | 36.07 | New | BANK OF NEW YORK MELLON COR |  | 8.87 | 20.36 |
| 19 | DELL INC | DELL | 6.42 | 12.33 | 17 | GENERAL DYNAMICS CORP | GD | 8.92 | 64.01 |
| 11 | COVENTRY HEALTH CARE INC | CVH | 6.47 | 30.40 | New | JOY GLOBAL INC | JOY | 8.97 | 55.86 |
| 7 | CF INDUSTRIES HOLDINGS INC | CF | 6.58 | 170.96 | 4 | INTERPUBLIC GROUP OF COS | IPG | 9.04 | 10.39 |
| 2 | WESTERN DIGITAL CORP | WDC | 6.66 | 31.39 | 29 | LILLY (ELI) \& CO | LLY | 9.09 | 40.95 |
| 3 | APOLLO GROUP INC -CLA | APOL | 6.68 | 31.82 | New | LEUCADIA NATIONAL CORP | LUK | 9.11 | 20.32 |
| 11 | L-3 COMMUNICATIONS HLDGS INC | LLL | 6.92 | 68.19 | 10 | APPLIED MATERIALS INC | AMAT | 9.20 | 10.33 |
| 14 | CLIFFS NATURAL RESOURCES INC |  | 6.94 | 47.78 | New | HARMAN INTERNATIONAL INDS | HAR | 9.28 | 39.22 |
| New | SYMANTEC CORP | SYMC | 7.10 | 14.84 | New | DUN \& BRADSTREET CORP | DNB | 9.35 | 67.57 |
| 5 | NORTHROP GRUMMAN CORP | NOC | 7.33 | 58.75 | 28 | MACY'S INC | M | 9.37 | 38.05 |
| 7 | GAMESTOP CORP | GME | 7.46 | 19.18 | 11 | FOREST LABORATORIES -CLA | FRX | 9.41 | 35.00 |
| 26 | AETNA INC | AET | 7.48 | 40.89 | 107 | CENTURYLINK INC | CTL | 9.41 | 39.22 |
| 4 | WESTERN UNION CO | WU | 7.52 | 16.40 | 3 | MARATHON OIL CORP | MRO | 9.45 | 24.91 |
| 13 | DISCOVER FINANCIAL SVCS INC | DFS | 7.63 | 33.11 | New | THERMO FISHER SCIENTIFIC INC | TMO | 9.48 | 50.48 |
| 8 | CITIGROUP INC | C | 7.66 | 26.51 | 3 | MERCK \& CO | MRK | 9.50 | 37.58 |
| 14 | KEYCORP | KEY | 7.67 | 7.50 | New | CAINC | CA | 9.50 | 24.87 |
| 16 | HEWLETT-PACKARD CO | HPQ | 7.82 | 22.68 | 2 | BOSTON SCIENTIFIC CORP | BSX | 9.67 | 5.74 |

## Price/Sales

## Top 50 S\&P 500 Companies By LOW PRICE/SALES

Price/Sales: Month-end market value divided by reported sales.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual
performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future
performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future
performance


| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $-8.33 \%$ |
| Last 3 M onths | $-11.36 \%$ |
| Last 6 M onths | $-2.80 \%$ |
| Last 12 M onths | $-14.24 \%$ |
| 2012 YTD | $-1.04 \%$ |

Screen for May
Mo.

| In |  | Mkt Val I |  |  | In |  | Mkt Val I |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn. | Company | Ticker |  | 05/31/2012 | Scrn. | Company | Ticker |  | 05/31/2012 |
| 78 | SEARS HOLDINGS CORP | SHLD | 0.05 | 49.40 | 2 | FIRST SOLAR INC | FSLR | 0.27 | 12.56 |
| 98 | VALERO ENERGY CORP | VLO | 0.09 | 21.10 | 22 | SAIC INC | SAI | 0.28 | 11.11 |
| 57 | TESORO CORP | TSO | 0.10 | 22.12 | 30 | GAMESTOP CORP | GME | 0.28 | 19.18 |
| 111 | SAFEWAY INC | SWY | 0.10 | 19.02 | 35 | AMERICAN INTERNATIONAL GROUI |  | 0.29 | 29.18 |
| 131 | SUNOCO INC | SUN | 0.11 | 46.45 | 6 | CONOCOPHILLIPS | COP | 0.29 | 52.16 |
| 112 | AUTONATION INC | AN | 0.11 | 36.02 | New | ALPHA NATURAL RESOURCES INC | ANR | 0.29 | 10.48 |
| 150 | GOODYEAR TIRE \& RUBBER CO | GT | 0.11 | 10.45 | 142 | FORD MOTOR CO | F | 0.30 | 10.56 |
| 113 | AMERISOURCEBERGEN CORP | ABC | 0.12 | 36.99 | 8 | DELL INC | DELL | 0.31 | 12.33 |
| 95 | CARDINAL HEALTH INC | CAH | 0.13 | 41.38 | 13 | MURPHY OIL CORP | MUR | 0.32 | 46.62 |
| 42 | KROGER CO | KR | 0.14 | 22.01 | 11 | HARTFORD FINANCIAL SERVICES | HIG | 0.32 | 16.82 |
| 17 | UNITED STATES STEEL CORP | X | 0.14 | 20.30 | 7 | FLUOR CORP | FLR | 0.32 | 46.88 |
| 10 | MARATHON PETROLEUM CORP | MPC | 0.17 | 36.07 | 40 | HUMANA INC | HUM | 0.33 | 76.39 |
| 82 | TYSON FOODS INC -CLA | TSN | 0.17 | 19.37 | 44 | COVENTRY HEALTH CARE INC | CVH | 0.34 | 30.40 |
| 158 | MCKESSON CORP | MCK | 0.17 | 87.28 | 2 | HESS CORP | HES | 0.35 | 43.70 |
| 32 | DONNELLEY (R R) \& SONS CO | RRD | 0.18 | 10.76 | New | ASSURANT INC | AIZ | 0.35 | 33.38 |
| 66 | JABIL CIRCUIT INC | JBL | 0.21 | 19.13 | 4 | RYdER SYSTEM INC | R | 0.36 | 43.21 |
| 81 | TENET HEALTHCARE CORP | THC | 0.22 | 4.71 | 6 | HEWLETT-PACKARD CO | HPQ | 0.36 | 22.68 |
| 38 | DEAN FOODS CO | DF | 0.22 | 15.64 | 7 | ALCOA INC | AA | 0.36 | 8.55 |
| 12 | SPRINT NEXTEL CORP | S | 0.23 | 2.57 | 8 | WALGREEN CO | WAG | 0.36 | 30.52 |
| 31 | PENNEY (J C) CO | JCP | 0.23 | 26.23 | 2 | STAPLES INC | SPLS | 0.37 | 13.14 |
| 38 | ARCHER-DANIELS-MIDLAND CO | ADM | 0.24 | 31.88 | 8 | WELLPOINT INC | WLP | 0.37 | 67.39 |
| 38 | WAL-MART STORES INC | WMT | 0.25 | 65.82 | New | CABLEVISION SYS CORP -CL A | cVC | 0.37 | 11.44 |
| 12 | GENWORTH FINANCIAL INC | GNW | 0.25 | 5.24 | New | METROPCS COMMUNICATIONS INC | PCS | 0.38 | 6.40 |
| 103 | WHIRLPOOL CORP | WHR | 0.26 | 61.88 | 4 | NRG ENERGY INC | NRG | 0.39 | 15.32 |
| 19 | COMPUTER SCIENCES CORP | CSC | 0.26 | 26.64 | 8 | SYSCO CORP | SYY | 0.39 | 27.91 |

## EV / EBITDA

## Top 50 S\&P Industrials Companies By LOW EV/EBITDA

EV/EBITDA: Enterprise Value (Equity Market Capitalization + Long Term Debt + Short Term Debt + Preferred Stock + Minority Interest - Cash \& Cash Equivalents) divided by the latest 4-quarter EBITDA


Source: BofA Merill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end May 1986 to month end September 2001. The unshaded portion represents actual performance since October 2001. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

Screen for May

| Mo. |  |  |  |  | Mo. |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  |  | EV I | Price | In |  |  | EV I | Price |
| Scrn | Company | Ticker | EBITDA | 05/31/2012 | Scrn | Company | Ticker | EBITD A | 05/31/2012 |
| 39 | HUMANA INC | HUM | 1.00 | 76.39 | 17 | FREEPORT-MCMORAN COP\&GOLD | FCX | 3.43 | 32.04 |
| 3 | FIRST SOLAR INC | FSLR | 1.73 | 12.56 | 25 | WASHINGTON POST -CLB | WPO | 3.62 | 348.82 |
| 31 | LEXMARK INTL INC -CLA | LXK | 2.05 | 25.01 | New | WESTERN DIGITAL CORP | WDC | 3.62 | 31.39 |
| 4 | NETFLIX INC | NFLX | 2.27 | 63.44 | 9 | MOSAIC CO | MOS | 3.67 | 47.68 |
| 3 | MURPHY OIL CORP | MUR | 2.29 | 46.62 | 31 | HESS CORP | HES | 3.70 | 43.70 |
| 26 | APOLLO GROUP INC -CLA | APOL | 2.39 | 31.82 | 8 | METROPCS COMMUNICATIONS INC | PCS | 3.83 | 6.40 |
| 17 | WELLPOINT INC | WLP | 2.44 | 67.39 | 4 | CORNING INC | GLW | 3.89 | 12.99 |
| 105 | CONOCOPHILLIPS | COP | 2.45 | 52.16 | 9 | DEVON ENERGY CORP | DVN | 3.92 | 59.52 |
| 10 | MARATHON PETROLEUM CORP | M PC | 2.72 | 36.07 | 3 | QEP RESOURCES INC | QEP | 3.93 | 26.32 |
| 32 | GAMESTOP CORP | GME | 2.73 | 19.18 | 10 | GOODYEAR TIRE \& RUBBER CO | GT | 3.94 | 10.45 |
| 29 | M OLEX INC | M OLX | 2.74 | 23.07 | 38 | AETNA INC | AET | 3.96 | 40.89 |
| 17 | BEST BUY COINC | BBY | 2.94 | 18.72 | New | DISCOVERY COMMUNICATIONS INC | DISCA | 3.98 | 50.10 |
| New | CHEVRON CORP | CVX | 2.95 | 98.31 | 2 | SANDISK CORP | SNDK | 4.01 | 32.70 |
| 13 | TESORO CORP | TSO | 3.00 | 22.12 | 4 | COMCAST CORP | CMCSA | 4.11 | 28.91 |
| 10 | APACHE CORP | APA | 3.04 | 81.38 | 5 | MICRON TECHNOLOGY INC | MU | 4.12 | 5.84 |
| 25 | DELL INC | DELL | 3.12 | 12.33 | 5 | DONNELLEY (R R ) \& SONS CO | RRD | 4.13 | 10.76 |
| 4 | ALPHA NATURAL RESOURCES INC | ANR | 3.16 | 10.48 | New | CISCO SYSTEMS INC | CSCO | 4.16 | 16.33 |
| 10 | DEVRY INC | DV | 3.18 | 27.33 | 2 | HELMERICH \& PAYNE | HP | 4.21 | 45.30 |
| 13 | VALERO ENERGY CORP | VLO | 3.20 | 21.10 | New | EXXON MOBIL CORP | XOM | 4.23 | 78.63 |
| 46 | MARATHON OIL CORP | MRO | 3.21 | 24.91 | 24 | GANNETT CO | GCI | 4.27 | 13.06 |
| 10 | VIACOM INC | VIAB | 3.22 | 47.73 | New | NABORS INDUSTRIES LTD | NBR | 4.30 | 13.55 |
| 35 | COMPUTER SCIENCES CORP | CSC | 3.24 | 26.64 | New | OCCIDENTAL PETROLEUM CORP | OXY | 4.38 | 79.27 |
| 5 | NEWFIELD EXPLORATION CO | NFX | 3.34 | 29.96 | 2 | COVENTRY HEALTH CARE INC | CVH | 4.46 | 30.40 |
| 7 | CFINDUSTRIES HOLDINGS INC | CF | 3.40 | 170.96 | 9 | SAIC INC | SAI | 4.47 | 11.11 |
| 28 | TIME WARNER INC | TWX | 3.41 | 34.47 | New | CLIFFS NATURAL RESOURCES INC | CLF | 4.48 | 47.78 |

## Free Cash Flow / EV

Top Decile S\&P 500 Companies By HIGH Free Cash Flow / EV
Free Cash Flow / EV: Free Cash Flow divided by Enterprise Value (Equity Market Capitalization + Long Term Debt + Short Term Debt + Preferred Stock + Minority Interest - Cash \& Cash Equivalents). Free Cash Flow is defined as the earnings after extraordinary items plus depreciation minus capital expenditures.


| Mo.In <br> Scrn.* | Company | Ticker | FCF/EV | $\begin{array}{r} \text { Price } \\ 05 / 31 / 2012 \end{array}$ | Mo.In Scrn.* | Company | Ticker | FCFIEV | 05/311 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| New | ZIONS BANCORPORATION | ZION | 0.83 | 19.03 | 8 | BMC SOFTWARE INC | BMC | 0.12 | $\angle$ |
| 19 | LEXMARK INTL INC -CL A | LXK | 0.21 | 25.01 | New | TRAVELERS COSINC | TRV | 0.11 | $\epsilon$ |
| 4 | PRINCIPAL FINANCIAL GRP INC | PFG | 0.21 | 24.56 | 4 | GANNETTCO | GCI | 0.11 | 1 |
| 16 | DISCOVERY COMMUNICATIONS II | NDISCA | 0.19 | 50.10 | 4 | LILLY (ELI) \& CO | LLY | 0.11 | < |
| 4 | Ford Motor Co | F | 0.19 | 10.56 | 4 | AETNA INC | AET | 0.11 | < |
| 19 | HUMANA INC | HUM | 0.18 | 76.39 | 4 | INTERPUBLIC GROUP OFCOS | IPG | 0.11 | 1 |
| 5 | APOLLO GROUP INC -CL A | APOL | 0.18 | 31.82 | 11 | RAYTHEON CO | RTN | 0.11 | E |
| New | FOREST LABORATORIES -CLA | FRX | 0.17 | 35.00 | 19 | MICROSOFT CORP | MSFT | 0.10 | < |
| 19 | WELLPOINT INC | WLP | 0.16 | 67.39 | New | EXPEDIA INC | EXPE | 0.10 | < |
| 6 | GAMESTOP CORP | GME | 0.16 | 19.18 | 14 | KLA-TENCOR CORP | KLAC | 0.10 | < |
| 19 | DELL INC | DELL | 0.16 | 12.33 | New | Pitney Bowes Inc | PBI | 0.10 | 1 |
| 8 | NETFLIXINC | NFLX | 0.15 | 63.44 | 13 | CA INC | CA | 0.10 | \% |
| 19 | TERADYNE INC | TER | 0.14 | 14.45 | 3 | NVIDIA CORP | NVDA | 0.10 | 1 |
| New | MARATHON PETROLEUM CORP | MPC | 0.14 | 36.07 | 13 | APPLIED MATERIALSINC | AMAT | 0.10 | 1 |
| 7 | TESOROCORP | TSO | 0.14 | 22.12 | 4 | WESTERN UNION CO | WU | 0.10 | 1 |
| 7 | NORTHROP GRUMMAN CORP | NOC | 0.13 | 58.75 | 6 | CISCO SYSTEMS INC | CSCO | 0.10 | 1 |
| 7 | CF INDUSTRIES HOLDINGS INC | CF | 0.13 | 170.96 | 5 | GENERAL DYNAMICS CORP | GD | 0.10 | $\epsilon$ |
| 10 | MOLEX INC | MOLX | 0.13 | 23.07 | New | L-3 COMM UNICATIONS HLDGS II |  | 0.10 | $\epsilon$ |
| 11 | COVENTRY HEALTH CARE INC | CVH | 0.12 | 30.40 | New | ADVANCED MICRO DEVICES | AMD | 0.10 |  |
| New | MOTOROLA SOLUTIONS INC | MSI | 0.12 | 48.08 | New | PFIZER INC | PFE | 0.09 | < |
| 19 | WESTERN DIGITAL CORP | WDC | 0.12 | 31.39 | New | CHUBB CORP | CB | 0.09 | 7 |
| 5 | XEROX CORP | XRX | 0.12 | 7.22 | New | CME GROUP INC | CME | 0.09 | 25 |
| 11 | LSICORP | LSI | 0.12 | 6.65 | New | MERCK \& CO | MRK | 0.09 | 三 |

[^13]
## Dividend Yield

## Top 50 S\&P 500 Companies By DIVIDEND YIELD

Dividend Yield: Indicated dividend divided by month-end price.



| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $-3.53 \%$ |
| Last 3 M onths | $-2.16 \%$ |
| Last 6 M onths | $1.40 \%$ |
| Last 12 M onths | $2.17 \%$ |
| 2012 YTD | $-1.06 \%$ |

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded
portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for May

| Mo. |  |  |  |  |
| :--- | :--- | :--- | :--- | ---: |
| In |  |  |  | Price |
| Scrn | Company | Ticker | Yield | 05/31/2012 |
|  |  | PBI | $11.00 \%$ | 13.64 |
| 40 | PITNEY BOWES INC | WIN | $10.70 \%$ | 3.74 |
| 47 | FRONTIER COMMUNICATIONS COF FTR |  |  |  |
| 71 | WINDSTREAM CORP | RRD | $9.67 \%$ | 10.76 |
| 44 | DONNELLEY (R R) \& SONS CO | CTL | $7.39 \%$ | 39.22 |
| 47 | CENTURYLINK INC | GCI | $6.13 \%$ | 13.06 |
| 4 | GANNETT CO | EXC | $5.68 \%$ | 36.98 |
| 30 | EXELON CORP | POM | $5.67 \%$ | 19.06 |
| 39 | PEPCO HOLDINGS INC | RAI | $5.64 \%$ | 41.84 |
| 94 | REYNOLDS AMERICAN INC | AVP | $5.56 \%$ | 16.55 |
| 9 | AVON PRODUCTS | PBCT | $5.50 \%$ | 11.63 |
| 25 | PEOPLE'S UNITED FINL INC | LEG | $5.39 \%$ | 20.79 |
| 43 | LEGGETT \& PLATT INC | HCN | $5.34 \%$ | 55.47 |
| 41 | HEALTH CARE REIT INC | PPL | $5.26 \%$ | 27.37 |
| 34 | PPL CORP | CVC | $5.24 \%$ | 11.44 |
| New | CABLEVISION SYS CORP | -CL A | HRB | $5.24 \%$ |
| 6 | BLOCK H \& R INC | 15.27 |  |  |
| New | CLIFFS NATURAL RESOURCES INC CLF | $5.23 \%$ | 47.78 |  |
| 10 | HUDSON CITY BANCORP INC | HCBK | $5.16 \%$ | 6.20 |
| 39 | AT\&T INC | T | $5.15 \%$ | 34.17 |
| 21 | ENTERGY CORP | ETR | $5.14 \%$ | 64.53 |
| 51 | ALTRIA GROUP INC | MO | $5.09 \%$ | 32.19 |
| 2 | CONOCOPHILLIPS | COP | $5.06 \%$ | 52.16 |
| 40 | TECO ENERGY INC | TE | $5.06 \%$ | 17.40 |
| 40 | INTEGRYS ENERGY GROUP INC | TEG | $5.03 \%$ | 54.10 |
| 38 | LORILLARD INC | LO | $5.02 \%$ | 123.60 |

Mo.

| In |  |  |  | Price |
| :--- | :--- | :--- | :--- | ---: |
| Scrn | Company | Ticker | Yield | 05/31/2012 |
|  |  |  |  |  |
| 39 | AMEREN CORP | AEE | $4.95 \%$ | 32.31 |
| 2 | NYSE EURONEXT | NYX | $4.94 \%$ | 24.31 |
| 6 | AGL RESOURCES INC | GAS | $4.91 \%$ | 37.48 |
| 44 | HCP INC | HCP | $4.90 \%$ | 40.84 |
| 39 | AMERICAN ELECTRIC POWER CO | AEP | $4.88 \%$ | 38.51 |
| 9 | LOCKHEED MARTIN CORP | LMT | $4.83 \%$ | 82.80 |
| 38 | VERIZON COMMUNICATIONS INC | VZ | $4.80 \%$ | 41.64 |
| New | LEXMARK INTL INC -CL A | LXK | $4.80 \%$ | 25.01 |
| 38 | LILLY (ELI) \& CO | LLY | $4.79 \%$ | 40.95 |
| 14 | FEDERATED INVESTORS INC | FII | $4.78 \%$ | 20.09 |
| 37 | FIRSTENERGY CORP | FE | $4.70 \%$ | 46.79 |
| New | PLUM CREEK TIMBER CO INC | PCL | $4.60 \%$ | 36.50 |
| 7 | PUBLIC SERVICE ENTRP GRP INC | PEG | $4.55 \%$ | 31.19 |
| 39 | DUKE ENERGY CORP | DUK | $4.55 \%$ | 21.98 |
| 39 | PROGRESS ENERGY INC | PGN | $4.52 \%$ | 54.82 |
| New | MICROCHIP TECHNOLOGY INC | MCHP | $4.51 \%$ | 31.02 |
| 20 | MERCK \& CO | MRK | $4.47 \%$ | 37.58 |
| 41 | CINCINNATI FINANCIAL CORP | CINF | $4.46 \%$ | 36.08 |
| 3 | WASTE MANAGEMENT INC | WM | $4.38 \%$ | 32.44 |
| New | SAIC INC | SAI | $4.32 \%$ | 11.11 |
| 3 | PAYCHEX INC | PAYX | $4.27 \%$ | 29.97 |
| 38 | SOUTHERN CO | SO | $4.27 \%$ | 45.91 |
| 40 | PINNACLE WEST CAPITAL CORP | PNW | $4.25 \%$ | 49.38 |
| New | KIMCO REALTY CORP | KIM | $4.23 \%$ | 17.95 |
| 38 | SCANA CORP | SCG | $4.22 \%$ | 46.95 |

## Dividend Growth

## Top 50 S\&P 500 Companies By Dividend Growth

Dividend Growth: The growth between trailing 4-quarter total common dividends and year-ago trailing 4-quarter total common dividends.



Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end Mary 1986 to month end December 2004. The unshaded portion represents actual performance since January 2005. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for May

| In |  |  | Dividend | Price |
| :--- | :--- | :--- | ---: | ---: |
| Scrn | Company | Ticker | Growth | 05/31/2012 |
|  |  |  |  |  |
| 11 | AETNA INC | AET | $1353.8 \%$ | 40.89 |
| 2 | HARMAN INTERNATIONAL INDS | HAR | $904.6 \%$ | 39.22 |
| 11 | JPMORGAN CHASE \& CO | JPM | $384.3 \%$ | 33.15 |
| New | WHOLE FOODS MARKET INC | WFM | $349.2 \%$ | 88.61 |
| New | CISCO SYSTEMS INC | CSCO | $324.7 \%$ | 16.33 |
| 8 | SUNTRUST BANKS INC | STI | $322.0 \%$ | 22.92 |
| 2 | FLIR SYSTEMS INC | FLIR | $307.9 \%$ | 21.33 |
| 2 | ST JUDE MEDICAL INC | STJ | $300.9 \%$ | 38.42 |
| 2 | FIRST HORIZON NATIONAL CORP | FHN | $294.0 \%$ | 8.48 |
| 2 | WELLPOINT INC | WLP | $288.5 \%$ | 67.39 |
| New | KOHL'S CORP | KSS | $284.2 \%$ | 45.82 |
| 4 | HOST HOTELS \& RESORTS INC | HST | $279.4 \%$ | 15.26 |
| 2 | INTERPUBLIC GROUP OF COS | IPG | $274.9 \%$ | 10.39 |
| 14 | STATE STREET CORP | STT | $263.1 \%$ | 41.21 |
| 8 | HUNTINGTON BANCSHARES | HBAN | $255.5 \%$ | 6.54 |
| 11 | PNC FINANCIAL SVCS GROUP INC | PNC | $250.7 \%$ | 61.42 |
| 14 | FIFTH THIRD BANCORP | FITB | $249.3 \%$ | 13.35 |
| 9 | DISCOVER FINANCIAL SVCS INC | DFS | $243.7 \%$ | 33.11 |
| 11 | KEYCORP | KEY | $218.4 \%$ | 7.50 |
| 4 | FRANKLIN RESOURCES INC | BEN | $213.0 \%$ | 106.79 |
| 7 | CF INDUSTRIES HOLDINGS INC | CF | $202.2 \%$ | 170.96 |
| 4 | LAUDER (ESTEE) COS INC -CLA | EL | $175.1 \%$ | 54.15 |
| 14 | LINCOLN NATIONAL CORP | LNC | $169.8 \%$ | 20.67 |
| 4 | ROSS STORES INC | ROST | $157.9 \%$ | 63.23 |
| 5 | GANNETT CO | GCI | $147.1 \%$ | 13.06 |



## Share Repurchase

## Top 50 S\&P 500 Companies By Large Share Repurchase

Share Repurchase: The year-to-year change in shares outstanding.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 2004. The unshaded portion represents actual performance since January 2005. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for May

| Mo. |  |
| :--- | :--- |
| In |  |
| Scrn | Company |
|  |  |
| 11 | SAFEWAY INC |
| New | WYNN RESORTS LTD |
| 10 | NOVELLUS SYSTEMS INC |
| 5 | AUTONATION INC |
| 5 | AMGEN INC |
| 4 | TENET HEALTHCARE CORP |
| 31 | DIRECTV |
| 4 | IRON MOUNTAIN INC |
| 9 | BIG LOTS INC |
| 10 | WYNDHAM WORLDWIDE CORP |
| 2 | MOTOROLA SOLUTIONS INC |
| 8 | NORTHROP GRUMMAN CORP |
| 24 | GAP INC |
| 13 | TORCHMARK CORP |
| 10 | DONNELLEY (R R) \& SONS CO |
| 12 | KOHL'S CORP |
| 7 | SUNOCO INC |
| 12 | APOLLO GROUP INC |
| 25 | ASSURANT INC A |
| 7 | TIME WARNER INC |
| 7 | CONOCOPHILLIPS |
| 3 | LEXMARK INTL INC -CL A |
| 51 | WELLPOINT INC |
| New | LOWE'S COMPANIES INC |
| 7 | HARRIS CORP |

Mo.
In Share Price
Scrn Company
Ticker Repurchase 05/31/2012


| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $-7.37 \%$ |
| Last 3 M onths | $-5.59 \%$ |
| Last 6 M onths | $5.12 \%$ |
| Last 12 M onths | $-1.14 \%$ |
| 2012 YTD | $3.13 \%$ |

# Relative Strength - 30wk/75wk Moving Average 

## Top 50 S\&P 500 Companies By RELATIVE STRENGTH.

Relative Strength: The ratio of the 30 -week moving average of price to the 75 -week moving average.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end August 1995. The unshaded
portion represents actual performance since September 1995. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for May

| Mo. |  |
| :--- | :--- |
| In |  |
| Scrn. Company |  |
|  |  |
| New | ALEXION PHARMACEUTICALS INC |
| 9 | ROSS STORES INC |
| 7 | FASTENAL CO |
| 6 | DOLLAR TREE INC |
| 6 | O'REILLY AUTOMOTIVE INC |
| 7 | INTUITIVE SURGICAL INC |
| 9 | MASTERCARD INC |
| 6 | APPLE INC |
| 7 | MACY'S INC |
| 6 | TJX COMPANIES INC |
| 12 | BIOGEN IDEC INC |
| 9 | STARBUCKS CORP |
| 7 | GRAINGER (W W) INC |
| 6 | VISA INC |
| 3 | WYNDHAM WORLDWIDE CORP |
| 9 | VF CORP |
| 7 | GOODRICH CORP |
| 14 | CHIPOTLE MEXICAN GRILL INC |
| 2 | LENNAR CORP |
| 4 | EXPEDIA INC |
| 3 | NOVELLUS SYSTEMS INC |
| 3 | HOME DEPOT INC |
| 16 | WHOLE FOODS MARKET INC |
| New | D R HORTON INC |
| New | SHERWIN-WILLIAMS CO |


|  | Relative |  |
| :--- | ---: | ---: |
| Ticker | Ptrength | 05/31/2012 |
| ALXN | 1.28 | 90.57 |
| ROST | 1.22 | 63.23 |
| FAST | 1.22 | 44.23 |
| DLTR | 1.22 | 103.18 |
| ORLY | 1.22 | 95.79 |
| ISRG | 1.21 | 523.10 |
| MA | 1.20 | 406.51 |
| AAPL | 1.20 | 577.73 |
| M | 1.20 | 38.05 |
| TJX | 1.20 | 42.46 |
| BIIB | 1.19 | 130.75 |
| SBUX | 1.19 | 54.89 |
| GWW | 1.19 | 193.65 |
| V | 1.19 | 115.20 |
| WYN | 1.18 | 49.80 |
| VFC | 1.18 | 141.04 |
| GR | 1.18 | 125.77 |
| CMG | 1.18 | 413.07 |
| LEN | 1.17 | 27.29 |
| EXPE | 1.17 | 45.89 |
| NVLS | 1.16 | 41.83 |
| HD | 1.15 | 49.34 |
| WFM | 1.15 | 88.61 |
| DHI | 1.14 | 16.60 |
| SHW | 1.14 | 129.64 |


| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  |  | Relative | Price |
| Scrn. Company | Ticker | Strength | 05/31/2012 |  |
|  |  |  |  |  |
| 2 | AIRGAS INC | ARG | 1.14 | 86.81 |
| 8 | AUTOZONE INC | AZO | 1.14 | 380.26 |
| 12 | CABOT OIL \& GAS CORP | COG | 1.13 | 32.54 |
| 11 | ONEOK INC | OKE | 1.13 | 82.99 |
| 2 | WILLIAM C COS INC | WMB | 1.13 | 30.53 |
| 2 | YUM BRANDS INC | YUM | 1.13 | 70.36 |
| 14 | DISCOVER FINANCIAL SVCS INC | DFS | 1.13 | 33.11 |
| 10 | RALPH LAUREN CORP | RL | 1.13 | 148.80 |
| 4 | PHILIP MORRIS INTERNATIONAL | PM | 1.13 | 84.51 |
| 26 | LAUDER (ESTEE) COS INC -CL A | EL | 1.13 | 54.15 |
| 4 | SIMON PROPERTY GROUP INC | SPG | 1.13 | 147.52 |
| 9 | LIMITED BRANDS INC | LTD | 1.13 | 44.36 |
| 15 | CBS CORP | CBS | 1.12 | 31.92 |
| 9 | LORILLARD INC | LO | 1.12 | 123.60 |
| 3 | CELGENE CORP | CELG | 1.12 | 68.25 |
| 3 | NIKE INC | NKE | 1.12 | 108.18 |
| New | PRICELINE.COM INC | PCLN | 1.12 | 625.49 |
| 11 | HUMANA INC | HUM | 1.12 | 76.39 |
| 3 | INTEL CORP | INTC | 1.12 | 25.84 |
| 2 | COACH INC | COH | 1.11 | 67.45 |
| New | CINTAS CORP | CTAS | 1.11 | 36.90 |
| New | CVS CAREMARK CORP | CVS | 1.11 | 44.94 |
| 2 | TOTAL SYSTEM SERVICES INC | TSS | 1.11 | 23.27 |
| New | FMC CORP | FMC | 1.11 | 50.97 |
| New | MATTEL INC | MAT | 1.11 | 31.13 |
|  |  |  |  |  |

# Relative Strength - 5wk/30wk Moving Average 

Top 50 S\&P 500 Companies By 5W/30W Price Moving Average


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance


Screen for May

Mo.

| In $\mathrm{Scrn}$. Company |  | Price |  |  | In |  | Ticker | 5W/30W | Price |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Ticker | 5W/30W | 05/31/2012 | Scrn. | Company |  |  | 05/31/2012 |
| New | TRIPADVISOR INC | TRIP | 1.2 | 42.88 | New | WATSON PHARMACEUTICALS IN | WPI | 1.1 | 71.29 |
| 5 | PULTEGROUP INC | PHM | 1.2 | 9.36 | New | PPG INDUSTRIES INC | PPG | 1.1 | 103.44 |
| 6 | LENNAR CORP | LEN | 1.2 | 27.29 | New | AmAZON.COM INC | AMZN | 1.1 | 212.91 |
| 3 | GAP INC | GPS | 1.2 | 26.50 | New | FAMILY DOLLAR STORES | FDO | 1.1 | 67.75 |
| 4 | REGIONS FINANCIAL CORP | RF | 1.2 | 6.29 | 4 | PERKINELMER INC | PKI | 1.1 | 26.60 |
| 3 | SHERWIN-WILLIAMS CO | SHW | 1.2 | 129.64 | New | CROWN CASTLE INTL CORP | CCI | 1.1 | 54.60 |
| New | DEAN FOODS CO | DF | 1.2 | 15.64 | 2 | DISCOVERY COMMUNICATIONS | DISCA | 1.1 | 50.10 |
| 6 | WYNDHAM WORLDWIDE CORP | WYN | 1.2 | 49.80 | New | BMC SOFTWARE INC | BMC | 1.1 | 42.32 |
| 6 | D R HORTON INC | DHI | 1.2 | 16.60 | New | ALEXION PHARMACEUTICALS IN | ALXN | 1.1 | 90.57 |
| New | SUNOCO INC | SUN | 1.2 | 46.45 | New | ALLSTATE CORP | ALL | 1.1 | 33.94 |
| 3 | PRICELINE.COM INC | PCLN | 1.2 | 625.49 | New | MARRIOTT INTL INC | MAR | 1.1 | 38.71 |
| 3 | ROSS STORES INC | ROST | 1.2 | 63.23 | 2 | FIDELITY NATIONAL INFO SVCS | FIS | 1.1 | 32.78 |
| New | EBAY INC | EBAY | 1.2 | 39.19 | New | WHOLE FOODS MARKET INC | WFM | 1.1 | 88.61 |
| 3 | TJX COMPANIES INC | TJX | 1.2 | 42.46 | New | EQUIFAX INC | EFX | 1.1 | 45.17 |
| New | SCRIPPS NETWORKS INTERACTIVE | SNI | 1.2 | 54.77 | 3 | HARLEY-DAVIDSON INC | HOG | 1.1 | 48.18 |
| 3 | TERADATA CORP | TDC | 1.2 | 66.48 | 5 | BB\&T CORP | BBT | 1.1 | 30.22 |
| New | O'REILLY AUTOMOTIVE INC | ORLY | 1.2 | 95.79 | 2 | INTUITIVE SURGICAL INC | ISRG | 1.1 | 523.10 |
| 3 | DISCOVER FINANCIAL SVCS INC | DFS | 1.2 | 33.11 | New | GILEAD SCIENCES INC | GILD | 1.1 | 49.95 |
| 4 | Apple Inc | AAPL | 1.2 | 577.73 | New | SIMON PROPERTY GROUP INC | SPG | 1.1 | 147.52 |
| New | CERNER CORP | CERN | 1.2 | 77.96 | 3 | SALESFORCE.COM INC | CRM | 1.1 | 138.62 |
| 2 | AMERICAN INTERNATIONAL GROUI | AIG | 1.1 | 29.18 | New | SEMPRA ENERGY | SRE | 1.1 | 65.01 |
| 2 | INGERSOLL-RAND PLC | IR | 1.1 | 41.31 | 2 | FMC CORP | FMC | 1.1 | 50.97 |
| New | EDWARDS LIFESCIENCES CORP | EW | 1.1 | 85.37 | 2 | RED HAT INC | RHT | 1.1 | 51.38 |
| 5 | MASCO CORP | MAS | 1.1 | 12.67 | 2 | YUM BRANDS INC | YUM | 1.1 | 70.36 |
| New | DOLLAR TREE INC | DLTR | 1.1 | 103.18 | 2 | StARBUCKS CORP | SBUX | 1.1 | 54.89 |

## Relative Strength - 10wk/ 40wk Moving Average <br> Top 50 S\&P 500 Companies By 10W/40W Price Moving Average



Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance


| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $-8.39 \%$ |
| Last 3 M onths | $-6.10 \%$ |
| Last 6 Months | $-1.44 \%$ |
| Last 12 Months | $-10.36 \%$ |
| 2012 YTD | $-1.04 \%$ |

Screen for May

| Mo. |  |  |  |  |
| :--- | :--- | :--- | :--- | ---: |
| In |  |  |  | Price |
| Scrn. | Company | Ticker | 10WI40W | 05/31/2012 |
|  |  |  |  |  |
| 4 | PULTEGROUP INC | PHM | 1.3 | 9.36 |
| 5 | LENNAR CORP | LEN | 1.3 | 27.29 |
| 3 | REGIONS FINANCIAL CORP | RF | 1.3 | 6.29 |
| 3 | GAP INC | GPS | 1.3 | 26.50 |
| 4 | Apple Inc | AAPL | 1.3 | 577.73 |
| 2 | PRICELINE.COM INC | PCLN | 1.2 | 625.49 |
| 5 | WYNDHAM WORLDWIDE CORP | WYN | 1.2 | 49.80 |
| 5 | SHERWIN-WILLIAMS CO | SHW | 1.2 | 129.64 |
| 5 | DR HORTON INC | DHI | 1.2 | 16.60 |
| 8 | ROSS STORES INC | ROST | 1.2 | 63.23 |
| 4 | MASCO CORP | MAS | 1.2 | 12.67 |
| 9 | TJX COMPANIES INC | TJX | 1.2 | 42.46 |
| New | ALEXION PHARMACEUTICALS INC | ALXN | 1.2 | 90.57 |
| 3 | DISCOVER FINANCIAL SVCS INC | DFS | 1.2 | 33.11 |
| 10 | STARBUCKS CORP | SBUX | 1.2 | 54.89 |
| 2 | AMERICAN INTERNATIONAL GROUIAIG | 1.2 | 29.18 |  |
| 6 | HOME DEPOT INC | HD | 1.2 | 49.34 |
| 5 | LOWE'S COMPANIES INC | LOW | 1.2 | 26.72 |
| 4 | TEXTRON INC | TXT | 1.2 | 23.63 |
| New | DEAN FOODS CO | DF | 1.2 | 15.64 |
| 4 | BB\&T CORP | BBT | 1.2 | 30.22 |
| New | RED HAT INC | RHT | 1.2 | 51.38 |
| 11 | INTUITIVE SURGICAL INC | ISRG | 1.2 | 523.10 |
| 9 | O'REILLY AUTOMOTIVE INC | ORLY | 1.2 | 95.79 |
| 2 | TERADATA CORP | TDC | 1.2 | 66.48 |


| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  |  |  | Price |
| Scrn. | Company | Ticker | 10WI40W | 05/31/2012 |
|  |  |  |  |  |
| 2 | FMC CORP | CBS | 1.2 | 50.97 |
| 2 | CBS CORP | 1.2 | 31.92 |  |
| 3 | WESTERN DIGITAL CORP | WDC | 1.2 | 31.39 |
| New | INGERSOLL-RAND PLC | IR | 1.2 | 41.31 |
| 2 | HARLEY-DAVIDSON INC | HOG | 1.2 | 48.18 |
| 7 | MACY'S INC | M | 1.2 | 38.05 |
| 2 | PERKINELMER INC | PKI | 1.2 | 26.60 |
| 6 | NOVELLUS SYSTEMS INC | NVLS | 1.2 | 41.83 |
| 2 | YUM BRANDS INC | YUM | 1.2 | 70.36 |
| New | SALESFORCE.COM INC | CRM | 1.2 | 138.62 |
| New | EQUIFAX INC | EFX | 1.2 | 45.17 |
| 6 | F5 NETWORKS INC | FFIV | 1.2 | 103.48 |
| 2 | BANK OF AMERICA CORP | BAC | 1.2 | 7.35 |
| New | MARRIOTT INTL INC | MAR | 1.2 | 38.71 |
| 2 | CHIPOTLE MEXICAN GRILL INC | CMG | 1.2 | 413.07 |
| New | DOLLAR TREE INC | DLTR | 1.2 | 103.18 |
| 3 | COMCAST CORP | CMCSA | 1.2 | 28.91 |
| New | Wells Fargo \& Co | WFC | 1.2 | 32.05 |
| 3 | FIRST HORIZON NATIONAL COR FHN | 1.2 | 8.48 |  |
| New | ALLSTATE CORP | ALL | 1.2 | 33.94 |
| New | AIRGAS INC | ARG | 1.2 | 86.81 |
| 10 | VISA INC | V | 1.2 | 115.20 |
| New | FIDELITY NATIONAL INFO SVCS | FIS | 1.2 | 32.78 |
| New | EBAY INC | EBAY | 1.2 | 39.19 |
| New | DISCOVERY COMMUNICATIONS | DISCA | 1.2 | 50.10 |
|  |  |  |  |  |

## Price to Moving Average (200-Day)

Top 50 S\&P 500 Companies By Price to 200-Day Moving Average


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for May

Mo.

| In | Price |
| :--- | :--- |
| Scrn Company |  |


|  |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| New | DEAN FOODS CO | DF | 1.4 | 15.64 |
| 5 | SHERWIN-WILLIAMS CO | SHW | 1.4 | 129.64 |
| 5 | PULTEGROUP INC | PHM | 1.4 | 9.36 |
| 6 | LENNAR CORP | LEN | 1.3 | 27.29 |
| New | TRIPADVISOR INC | TRIP | 1.3 | 42.88 |
| 6 | DR HORTON INC | DHI | 1.3 | 16.60 |
| 7 | WYNDHAM WORLDWIDE CORP | WYN | 1.3 | 49.80 |
| 9 | ROSS STORES INC | ROST | 1.3 | 63.23 |
| 3 | REGIONS FINANCIAL CORP | RF | 1.3 | 6.29 |
| 9 | TJX COM PANIES INC | TJX | 1.3 | 42.46 |
| New | COOPER INDUSTRIES PLC | CBE | 1.3 | 70.50 |
| 4 | GAP INC | GPS | 1.3 | 26.50 |
| 5 | Apple Inc | AAPL | 1.2 | 577.73 |
| New | SCRIPPS NETWORKS INTERACTIVE SNI | 1.2 | 54.77 |  |
| 2 | DOLLAR TREE INC | DLTR | 1.2 | 103.18 |
| New | ALEXION PHARMACEUTICALS INC | ALXN | 1.2 | 90.57 |
| 4 | DISCOVER FINANCIAL SVCS INC | DFS | 1.2 | 33.11 |
| New | Disney (Walt) Co | DIS | 1.2 | 45.71 |
| 2 | SUNOCO INC | SUN | 1.2 | 46.45 |
| New | WHOLE FOODS MARKET INC | WFM | 1.2 | 88.61 |
| 3 | MASCO CORP | MAS | 1.2 | 12.67 |
| 2 | PPG INDUSTRIES INC | PPG | 1.2 | 103.44 |
| New | ALLSTATE CORP | ALL | 1.2 | 33.94 |
| New | FAMILY DOLLAR STORES | FDO | 1.2 | 67.75 |
| 10 | O'REILLY AUTOMOTIVE INC | ORLY | 1.2 | 95.79 |

Mo.
In
Price
Scrn. Company Ticker Price/200D 05/31/2012

| 2 | EQUIFAX INC | EFX | 1.2 | 45.17 |
| :--- | :--- | :--- | ---: | ---: |
| New | MARRIOTT INTL INC | MAR | 1.2 | 38.71 |
| 2 | INGERSOLL-RAND PLC | IR | 1.2 | 41.31 |
| 3 | STARBUCKS CORP | SBUX | 1.2 | 54.89 |
| 2 | EBAY INC | EBAY | 1.2 | 39.19 |
| 6 | HOME DEPOT INC | HD | 1.2 | 49.34 |
| New | BED BATH \& BEYOND INC | BBBY | 1.2 | 72.25 |
| New | EDWARDS LIFESCIENCES CORP | EW | 1.2 | 85.37 |
| New | HUNTINGTON BANCSHARES | HBAN | 1.2 | 6.54 |
| 2 | PERKINELMER INC | PKI | 1.2 | 26.60 |
| 2 | CROWN CASTLE INTL CORP | CCI | 1.2 | 54.60 |
| 3 | YUM BRANDS INC | YUM | 1.2 | 70.36 |
| New | SEMPRA ENERGY | SRE | 1.2 | 65.01 |
| 3 | CBS CORP | CBS | 1.2 | 31.92 |
| New | CHIPOTLE MEXICAN GRILL INC | CMG | 1.2 | 413.07 |
| New | CINCINNATI FINANCIAL CORP | CINF | 1.2 | 36.08 |
| New | ROPER INDUSTRIES INC/DE | ROP | 1.2 | 101.22 |
| New | FIDELITY NATIONAL INFO SVCS | FIS | 1.1 | 32.78 |
| 3 | BB\&T CORP | BBT | 1.1 | 30.22 |
| 4 | FMC CORP | FMC | 1.1 | 50.97 |
| New | BIOGEN IDEC INC | BIIB | 1.1 | 130.75 |
| 2 | HARLEY-DAVIDSON INC | HOG | 1.1 | 48.18 |
| New | NEWELLRUBBERMAID INC | NWL | 1.1 | 18.40 |
| 2 | CERNER CORP | CERN | 1.1 | 77.96 |
| New | AT\&T INC | T | 1.1 | 34.17 |

## Price Return - 12-Month Performance

Top 50 S\&P 500 Companies By 12-month price return.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

| Mo. In |  |  | Price | Price | Mo. In |  |  | Price | Price |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn.* | Company | Ticker | Return | 05/31/2012 | Scrn.* | Company | Ticker | Return | 05/31/2012 |
| New | ALEXION PHARMACEUTICALS INC | ALXN | 91.0\% | 90.57 | 6 | MACY'S INC | M | 31.8\% | 38.05 |
| 5 | Apple Inc | AAPL | 66.1\% | 577.73 | 4 | CERNER CORP | CERN | 29.8\% | 77.96 |
| 6 | DOLLAR TREE INC | DLTR | 61.9\% | 103.18 | 2 | HARLEY-DAVIDSON INC | HOG | 29.7\% | 48.18 |
| 7 | TJX COMPANIES INC | TJX | 60.2\% | 42.46 | 5 | AUTOZONE INC | AZO | 29.3\% | 380.26 |
| 6 | O'REILLY AUTOMOTIVE INC | ORLY | 59.4\% | 95.79 | 9 | GRAINGER (W W) INC | GWW | 28.2\% | 193.65 |
| 10 | ROSS STORES INC | ROST | 54.3\% | 63.23 | 3 | NIKE INC | NKE | 28.1\% | 108.18 |
| 9 | INTUITIVE SURGICAL INC | ISRG | 49.9\% | 523.10 | 5 | YUM BRANDS INC | YUM | 27.2\% | 70.36 |
| 11 | STARBUCKS CORP | SBUX | 49.2\% | 54.89 | New | EBAY INC | EBAY | 25.7\% | 39.19 |
| 2 | SHERWIN-WILLIAMS CO | SHW | 47.6\% | 129.64 | 4 | AIRGAS INC | ARG | 25.7\% | 86.81 |
| 2 | WHOLE FOODS MARKET INC | WFM | 44.9\% | 88.61 | New | TOTAL SYSTEM SERVICES INC | TSS | 25.1\% | 23.27 |
| 9 | GOODRICH CORP | GR | 44.1\% | 125.77 | 3 | SIMON PROPERTY GROUP INC | SPG | 25.0\% | 147.52 |
| 3 | LENNAR CORP | LEN | 43.8\% | 27.29 | 2 | NISOURCE INC | NI | 23.6\% | 25.09 |
| 5 | WYNDHAM WORLDWIDE CORP | WYN | 43.1\% | 49.80 | New | FAMILY DOLLAR STORES | FDO | 21.5\% | 67.75 |
| 6 | CHIPOTLE MEXICAN GRILL INC | CMG | 42.9\% | 413.07 | New | U S BANCORP | USB | 21.5\% | 31.11 |
| 7 | VISA INC | V | 42.1\% | 115.20 | New | PERRIGO CO | PRGO | 21.4\% | 103.89 |
| 10 | MASTERCARD INC | MA | 41.6\% | 406.51 | 4 | PRICELINE.COM INC | PCLN | 21.4\% | 625.49 |
| 10 | VF CORP | VFC | 41.5\% | 141.04 | New | ROPER INDUSTRIES INC/DE | ROP | 21.3\% | 101.22 |
| 16 | DISCOVER FINANCIAL SVCS INC | DFS | 38.9\% | 33.11 | New | WISCONSIN ENERGY CORP | WEC | 21.0\% | 37.84 |
| 14 | BIOGEN IDEC INC | BIIB | 38.0\% | 130.75 | New | FMC CORP | FMC | 20.9\% | 50.97 |
| New | GAP INC | GPS | 36.6\% | 26.50 | New | BROWN-FORMAN -CL B | BF.B | 20.3\% | 87.18 |
| 2 | D R HORTON INC | DHI | 36.3\% | 16.60 | New | HERSHEY CO | HSY | 20.0\% | 66.86 |
| 3 | HOME DEPOT INC | HD | 36.0\% | 49.34 | 2 | GILEAD SCIENCES INC | GILD | 19.7\% | 49.95 |
| 3 | BED BATH \& BEYOND INC | BBBY | 34.1\% | 72.25 | New | EQUIFAX INC | EFX | 19.5\% | 45.17 |
| 9 | FASTENAL CO | FAST | 33.3\% | 44.23 | New | WAL-MART STORES INC | WMT | 19.2\% | 65.82 |
| 2 | CROWN CASTLE INTL CORP | CCl | 31.9\% | 54.60 | New | TERADATA CORP | TDC | 19.2\% | 66.48 |

[^14]
## Price Return - 9-Month Performance

Top 50 S\&P 500 Companies By 9-month price return.


8788899091929394959697989900010203040506070809101112

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for May

Mo.

| In |  |  | Price | Price |
| :--- | :--- | :--- | ---: | ---: |
| Scrn. | Company | Ticker | Return | 05/31/2012 |
|  |  |  |  |  |
| 2 | PULTEGROUP INC | PHM | $95.0 \%$ | 9.36 |
| 4 | LENNAR CORP | DF | $85.6 \%$ | 27.29 |
| New | DEAN FOODS CO | SHW | $71.0 \%$ | 15.64 |
| 3 | SHERWIN-WILLIAMS CO | ROST | $65.2 \%$ | 129.64 |
| 9 | ROSS STORES INC | GPS | $60.4 \%$ | 26.50 |
| 4 | GAP INC | DHI | $57.8 \%$ | 16.60 |
| 4 | DR HORTON INC | ALXN | $56.3 \%$ | 90.57 |
| New | ALEXION PHARMACEUTICALS INC | TJX | $55.5 \%$ | 42.46 |
| 9 | TJX COMPANIES INC | WYN | $53.3 \%$ | 49.80 |
| 6 | WYNDHAM WORLDWIDE CORP | AAPL | $50.1 \%$ | 577.73 |
| 5 | Apple InC | NVLS | $49.6 \%$ | 41.83 |
| 5 | NOVELLUS SYSTEMS INC | CBE | $48.8 \%$ | 70.50 |
| New | COOPER INDUSTRIES PLC | HD | $47.8 \%$ | 49.34 |
| 5 | HOME DEPOT INC | ORLY | $47.6 \%$ | 95.79 |
| 8 | O'REILLY AUTOMOTIVE INC | M | $46.6 \%$ | 38.05 |
| 8 | MACY'S INC | DLTR | $44.4 \%$ | 103.18 |
| 6 | DOLLAR TREE INC | MAS | $42.8 \%$ | 12.67 |
| New | MASCO CORP | SBUX | $42.1 \%$ | 54.89 |
| 12 | STARBUCKS CORP | GR | $41.0 \%$ | 125.77 |
| 9 | GOODRICH CORP | TXT | $40.1 \%$ | 23.63 |
| New | TEXTRON INC | EFX | $39.7 \%$ | 45.17 |
| 3 | EQUIFAX INC | BIIB | $38.8 \%$ | 130.75 |
| 2 | BIOGEN IDEC INC | RF | $38.5 \%$ | 6.29 |
| New | REGIONS FINANCIAL CORP | ISRG | $37.2 \%$ | 523.10 |
| 11 | INTUITIVE SURGICAL INC |  |  |  |

мо.

| In |  | Price | Price |  |
| :--- | :--- | :--- | ---: | ---: |
| Scrn. Company | Ticker | Return | 05/31/2012 |  |
|  |  |  |  |  |
| New | BB\&T CORP | BBT | $35.6 \%$ | 30.22 |
| New | PPG INDUSTRIES INC | CMCSA | $35.1 \%$ | 103.44 |
| New | COMCAST CORP | FMC | $34.4 \%$ | 28.91 |
| New | FMC CORP | DIS | $34.2 \%$ | 40.97 |
| New | Disney (Walt) Co | WFM | $34.2 \%$ | 88.71 |
| New | WHOLE FOODS MARKET INC | LOW | $34.1 \%$ | 26.72 |
| 3 | LOWE'S COMPANIES INC | USB | $34.0 \%$ | 31.11 |
| New | U S BANCORP | ARG | $33.8 \%$ | 86.81 |
| 4 | AIRGAS INC | AKAM | $33.7 \%$ | 29.34 |
| 2 | AKAMAI TECHNOLOGIES INC | NWL | $32.9 \%$ | 18.40 |
| New | NEWELLRUBBERMAID INC | KMI | $32.3 \%$ | 34.19 |
| New | KINDER MORGAN INC | MAR | $32.2 \%$ | 38.71 |
| New | MARRIOTT INTL INC | FAST | $32.1 \%$ | 44.23 |
| 8 | FASTENAL CO | CMG | $31.8 \%$ | 413.07 |
| 9 | CHIPOTLE MEXICAN GRILL INC | CM |  |  |
| 4 | DISCOVER FINANCIAL SVCS INC | DFS | $31.6 \%$ | 33.11 |
| New | ROPER INDUSTRIES INC/DE | ROP | $31.5 \%$ | 101.22 |
| 9 | VISA INC | V | $31.1 \%$ | 115.20 |
| New | HUNTINGTON BANCSHARES | HBAN | $30.3 \%$ | 6.54 |
| 3 | RED HAT INC | RHT | $29.9 \%$ | 51.38 |
| 5 | YUM BRANDS INC | YUM | $29.4 \%$ | 70.36 |
| New | ALLSTATE CORP | ALL | $29.4 \%$ | 33.94 |
| 2 | CINCINNATIFINANCIAL CORP | CINF | $29.2 \%$ | 36.08 |
| New | HOST HOTELS \& RESORTS INC | HST | $29.0 \%$ | 15.26 |
| New | INTEL CORP | INTC | $28.4 \%$ | 25.84 |

## Price Return - 3-Month Performance

Top 50 S\&P 500 Companies By 3-month price return.


8788899091929394959697989900010203040506070809101112


| Absolute Returns |  |
| :--- | ---: |
| Last 1 Month | $-7.71 \%$ |
| Last 3 Months | $-7.51 \%$ |
| Last 6 Months | $4.06 \%$ |
| Last 12 M onths | $-5.52 \%$ |
| 2012 YTD | $4.46 \%$ |

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for May

| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  |  | Price | Price |
| Scrn. | Company | EXPer | Return | 05/31/2012 |
|  |  |  |  |  |
| 2 | EXPEDIA INC | TRIP | $34.8 \%$ | 45.89 |
| New | TRIPADVISOR INC | DF | $27.6 \%$ | 42.88 |
| New | DEAN FOODS CO | SHW | $25.7 \%$ | 15.64 |
| 2 | SHERWIN-WILLIAMS CO | FDO | $25.5 \%$ | 67.75 |
| 2 | FAMILY DOLLAR STORES | WPI | $22.2 \%$ | 71.29 |
| 2 | WATSON PHARMACEUTICALS INC |  |  |  |
| New | SCRIPPS NETWORKS INTERACTIVE SNI | $21.2 \%$ | 54.77 |  |
| New | BED BATH \& BEYOND INC | BBBY | $20.9 \%$ | 72.25 |
| 2 | SUNOCO INC | SUN | $20.2 \%$ | 46.45 |
| 2 | ROSS STORES INC | ROST | $18.6 \%$ | 63.23 |
| 2 | AMAZON.COM INC | AMZN | $18.5 \%$ | 212.91 |
| New | EDWARDS LIFESCIENCES CORP | EW | $16.7 \%$ | 85.37 |
| 7 | LENNAR CORP | LEN | $16.7 \%$ | 27.29 |
| 2 | DOLLAR TREE INC | DLTR | $16.6 \%$ | 103.18 |
| 2 | TJX COMPANIES INC | TJX | $16.0 \%$ | 42.46 |
| New | DR HORTON INC | DHI | $15.8 \%$ | 16.60 |
| New | COOPER INDUSTRIES PLC | CBE | $15.2 \%$ | 70.50 |
| 4 | GAP INC | GPS | $13.4 \%$ | 26.50 |
| New | PPG INDUSTRIES INC | PPG | $13.4 \%$ | 103.44 |
| 2 | WYNDHAM WORLDWIDE CORP | WYN | $13.2 \%$ | 49.80 |
| 2 | STARBUCKS CORP | SBUX | $13.0 \%$ | 54.89 |
| New | BMC SOFTWARE INC | BMC | $13.0 \%$ | 42.32 |
| New | BIOGEN IDEC INC | BIIB | $12.3 \%$ | 130.75 |
| New | HUNTINGTON BANCSHARES | HBAN | $11.9 \%$ | 6.54 |
| New | MCCORMICK \& CO INC | MKC | $11.7 \%$ | 56.36 |
|  |  |  |  |  |

Mo.

| In |  | Price |  |  |
| :--- | :--- | :--- | ---: | ---: |
| Scrn. Company | Price |  |  |  |
|  |  | Ticker | Return | 05/31/2012 |

## Price Return - 11-Month Performance

Top 50 S\&P 500 Companies By 11-month price return from one year ago.


8788899091929394959697989900010203040506070809101112

Source: BofA Merriil Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Back tested performance is hypothetical in nature and reflects application of the screen prior to it introduction and is not intended to be indicative of future performance


| Absolute Returns |  |
| :--- | ---: |
| Last 1 Month | $-6.26 \%$ |
| Last 3 Months | $-0.97 \%$ |
| Last 6 M onths | $4.08 \%$ |
| Last 12 Months | $-6.37 \%$ |
| 2012 YTD | $4.84 \%$ |

Screen for May

| Mo. In |  |  | Price | Price | Mo. In |  |  | Price | Price |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn.* | Company | Ticker | Return | $05 / 31 / 2012$ | Scrn.* | Company | Ticker | Return | 05/31/2012 |
| New | ALEXION PHARMACEUTICALS INC | ALXN | 90.5\% | 90.57 | 2 | RED HAT INC | RHT | 36.7\% | 51.38 |
| 6 | O'REILLY AUTOMOTIVE INC | ORLY | 75.5\% | 95.79 | 2 | CROWN CASTLE INTL CORP | CCl | 36.7\% | 54.60 |
| 4 | Apple Inc | AAPL | 67.9\% | 577.73 | 3 | RALPH LAUREN CORP | RL | 35.9\% | 148.80 |
| 9 | INTUITIVE SURGICAL INC | ISRG | 65.7\% | 523.10 | 2 | WHOLE FOODS MARKET INC | WFM | 35.8\% | 88.61 |
| 6 | DOLLAR TREE INC | DLTR | 59.5\% | 103.18 | 4 | CERNER CORP | CERN | 35.1\% | 77.96 |
| 9 | MASTERCARD INC | MA | 57.6\% | 406.51 | 5 | AUTOZONE INC | AZO | 34.7\% | 380.26 |
| 6 | TJX COMPANIES INC | TJX | 57.3\% | 42.46 | New | D R HORTON INC | DHI | 34.2\% | 16.60 |
| 11 | STARBUCKS CORP | SBUX | 55.9\% | 54.89 | 2 | AIRGAS INC | ARG | 32.7\% | 86.81 |
| 10 | VF CORP | VFC | 52.6\% | 141.04 | 3 | NIKE INC | NKE | 32.5\% | 108.18 |
| 6 | VISA INC | V | 51.7\% | 115.20 | 5 | SIMON PROPERTY GROUP INC | SPG | 31.8\% | 147.52 |
| 9 | ROSS STORES INC | ROST | 50.1\% | 63.23 | New | EBAY INC | EBAY | 31.6\% | 39.19 |
| 2 | PRICELINE.COM INC | PCLN | 47.7\% | 625.49 | 5 | YUM BRANDS INC | YUM | 31.5\% | 70.36 |
| New | GAP INC | GPS | 46.9\% | 26.50 | New | FMC CORP | FMC | 30.9\% | 50.97 |
| 3 | LENNAR CORP | LEN | 46.2\% | 27.29 | New | BED BATH \& BEYOND INC | BBBY | 30.6\% | 72.25 |
| 5 | WYNDHAM WORLDWIDE CORP | WYN | 44.6\% | 49.80 | New | LOWE'S COMPANIES INC | LOW | 30.4\% | 26.72 |
| 8 | GOODRICH CORP | GR | 43.7\% | 125.77 | 3 | NOVELLUS SYSTEMS INC | NVLS | 29.0\% | 41.83 |
| 6 | CHIPOTLE MEXICAN GRILL INC | CMG | 43.3\% | 413.07 | New | MICROSOFT CORP | MSFT | 28.0\% | 29.19 |
| 3 | HOME DEPOT INC | HD | 42.8\% | 49.34 | 2 | LAUDER (ESTEE) COS INC -CL A | EL | 27.5\% | 54.15 |
| 2 | DISCOVER FINANCIAL SVCS INC | DFS | 42.2\% | 33.11 | 4 | MATTEL INC | MAT | 27.3\% | 31.13 |
| 6 | MACY'S INC | M | 42.0\% | 38.05 | New | TOTAL SYSTEM SERVICES INC | TSS | 26.5\% | 23.27 |
| 13 | BIOGEN IDEC INC | BIIB | 41.5\% | 130.75 | New | MEAD JOHNSON NUTRITION CO | MJN | 26.2\% | 80.74 |
| 8 | FASTENAL CO | FAST | 41.1\% | 44.23 | New | INTEL CORP | INTC | 26.1\% | 25.84 |
| 2 | HARLEY-DAVIDSON INC | HOG | 40.8\% | 48.18 | New | PIONEER NATURAL RESOURCE: | PXD | 26.1\% | 96.70 |
| 8 | GRAINGER (W W) INC | GWW | 37.6\% | 193.65 | New | U S BANCORP | USB | 25.7\% | 31.11 |
| 2 | SHERWIN-WILLIAMS CO | SHW | 36.9\% | 129.64 | 4 | CF INDUSTRIES HOLDINGS INC | CF | 25.5\% | 170.96 |

[^15]
## Price Return - 12-Month and 1-Month Performance

Top 50 S\&P 500 Companies By average rank of 12-month and 1-month price return.


8788899091929394959697989900010203040506070809101112

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for May

| Mo. |  | Avg |  |  |
| :---: | :---: | :---: | :---: | :---: |
| In |  |  | Percent | Price |
| Scrn. | Company | Ticker | Rank | 05/31/2012 |
| 3 | TRIPADVISOR INC | TRIP | 1.2 | 42.88 |
| 2 | SHER WIN-WILLIAMS CO | SHW | 2.5 | 129.64 |
| New | WHOLE FOODS MARKET INC | WFM | 2.5 | 88.61 |
| 3 | ROSS STORES INC | ROST | 4.0 | 63.23 |
| 7 | TJX COMPANIES INC | TJX | 5.0 | 42.46 |
| 4 | DOLLAR TREE INC | DLTR | 5.5 | 103.18 |
| New | WAL-MART STORES INC | WMT | 6.0 | 65.82 |
| 3 | BED BATH \& BEYOND INC | BBBY | 6.1 | 72.25 |
| New | ALEXION PHARMACEUTICALS INC | ALXN | 7.3 | 90.57 |
| 2 | D R HORTON INC | DHI | 7.6 | 16.60 |
| New | WISCONSIN ENERGY CORP | WEC | 8.1 | 37.84 |
| New | GOODRICH CORP | GR | 8.6 | 125.77 |
| New | NISOURCE INC | NI | 8.6 | 25.09 |
| New | DUKE ENERGY CORP | DUK | 9.6 | 21.98 |
| New | CHIPOTLE MEXICAN GRILL INC | CMG | 10.1 | 413.07 |
| New | DEAN FOODS CO | DF | 10.3 | 15.64 |
| New | PROGRESS ENERGY INC | PGN | 10.6 | 54.82 |
| New | BROWN-FORMAN -CL B | BF.B | 10.6 | 87.18 |
| New | Apple Inc | AAPL | 10.9 | 577.73 |
| New | COOPER INDUSTRIES PLC | CBE | 10.9 | 70.50 |
| 3 | FAMILY DOLLAR STORES | FDO | 11.1 | 67.75 |
| New | CINCINNATI FINANCIAL CORP | CINF | 11.1 | 36.08 |
| New | XCEL ENERGY INC | XEL | 11.6 | 28.02 |
| New | SCANA CORP | SCG | 11.6 | 46.95 |
| 4 | WYNDHAM WORLDWIDE CORP | WYN | 12.1 | 49.80 |


| Mo. | Avg |  |  |
| :--- | ---: | ---: | ---: |
| In |  | Percent | Price |
| Scrn. Company | Ticker | Rank | $05 / 31 / 2012$ |


| New | VERIZON COMMUNICATIONS IN( VZ | 12.1 | 41.64 |  |
| :--- | :--- | :--- | ---: | ---: |
| New | CMS ENERGY CORP | CMS | 12.1 | 23.30 |
| New | EDISON INTERNATIONAL | EIX | 12.6 | 44.96 |
| New | QUANTA SERVICES INC | PWR | 12.6 | 22.58 |
| 2 | KIMBERLY-CLARK CORP | KMB | 12.6 | 79.35 |
| 2 | SEMPRA ENERGY | SRE | 12.6 | 65.01 |
| New | Disney (Walt) Co | DIS | 13.1 | 45.71 |
| New | LENNAR CORP | LEN | 13.1 | 27.29 |
| 2 | HERSHEY CO | HSY | 13.1 | 66.86 |
| New | SCRIPPS NETWORKS INTERACT SNI | 13.5 | 54.77 |  |
| New | TOTAL SYSTEM SERVICES INC | TSS | 13.6 | 23.27 |
| New | ROPER INDUSTRIES INC/DE | ROP | 13.6 | 101.22 |
| New | CVSCAREMARK CORP | CVS | 13.6 | 44.94 |
| New | PERRIGO CO | PRGO | 14.1 | 103.89 |
| New | CONSOLIDATED EDISON INC | ED | 14.1 | 60.36 |
| New | ABBOTT LABORATORIES | ABT | 14.1 | 61.79 |
| New | TARGET CORP | TGT | 14.1 | 57.91 |
| New | AT\&T INC | T | 14.6 | 34.17 |
| New | NEXTERA ENERGY INC | NEE | 14.6 | 65.34 |
| New | BRISTOL-MYERS SQUIBB CO | BMY | 15.1 | 33.34 |
| New | DISCOVER FINANCIAL SVCS INC DFS | 15.6 | 33.11 |  |
| 3 | BIOGEN IDEC INC | BIIB | 15.6 | 130.75 |
| 2 | ALTRIA GROUP INC | MO | 15.6 | 32.19 |
| New | PINNACLE WEST CAPITAL CORP PNW | 16.1 | 49.38 |  |
| New | EQUIFAX INC | EFX | 16.1 | 45.17 |

## Price Return - 12-Month and 1-Month Reversal

Top 50 S\&P 500 Companies By average rank of 12-month and reversal 1-month price return.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Back tested performance is hypothetical in nature and reflects application of the screen prior to it introduction and is not intended to be indicative of future performance
Screen for May

| Mo. <br> In |  |  | Avg <br> Percent | Price |
| :---: | :---: | :---: | :---: | :---: |
| Scrn. | Company | Ticker | Rank | 05/31/2012 |
| New | PRICELINE.COM INC | PCLN | 8.8 | 625.49 |
| New | WPX ENERGY INC | WPX | 11.0 | 14.67 |
| 2 | RED HAT INC | RHT | 14.8 | 51.38 |
| 3 | RALPH LAUREN CORP | RL | 15.3 | 148.80 |
| New | INTUITIVE SURGICAL INC | ISRG | 17.6 | 523.10 |
| New | MASTERCARD INC | MA | 17.7 | 406.51 |
| New | O'REILLY AUTOMOTIVE INC | ORLY | 18.1 | 95.79 |
| New | LOWE'S COMPANIES INC | LOW | 18.3 | 26.72 |
| New | LAUDER (ESTEE) COS INC -CL A | EL | 18.8 | 54.15 |
| 2 | MARATHON PETROLEUM CORP | M PC | 18.9 | 36.07 |
| New | PIONEER NATURAL RESOURCES | PXD | 19.8 | 96.70 |
| 2 | NOVELLUS SYSTEMS INC | NVLS | 22.2 | 41.83 |
| New | PHILLIPS 66 | PSX | 22.9 | 30.03 |
| New | CF INDUSTRIES HOLDINGS INC | CF | 23.2 | 170.96 |
| 2 | CISCO SYSTEMS INC | CSCO | 23.7 | 16.33 |
| New | HARLEY-DAVIDSON INC | HOG | 24.2 | 48.18 |
| New | VF CORP | VFC | 24.6 | 141.04 |
| New | LIMITED BRANDS INC | LTD | 24.7 | 44.36 |
| 2 | KLA-TENCOR CORP | KLAC | 24.7 | 45.83 |
| New | RANGE RESOURCES CORP | RRC | 24.7 | 57.44 |
| New | AMERICAN INTERNATIONAL GROU | AIG | 24.7 | 29.18 |
| New | NORDSTROM INC | JWN | 24.7 | 47.37 |
| 3 | MICROSOFT CORP | MSFT | 25.2 | 29.19 |
| New | GAP INC | GPS | 25.6 | 26.50 |
| New | MACY'S INC | M | 25.7 | 38.05 |



| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $-7.48 \%$ |
| Last 3 M onths | $-4.00 \%$ |
| Last 6 Months | $-0.27 \%$ |
| Last 12 M onths | $-12.41 \%$ |
| 2012 YTD | $1.14 \%$ |

## Most Active

## Top 50 S\&P 500 Companies By Most Actively Traded Stocks.

Most Actively Traded Stocks: Stocks have the highest monthly share trading volume.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end May 1986 to month end August 2003. The unshaded portion
隹 represents actual performance since September 2003. Back tested per
introduction and is not intended to be indicative of future performance

Screen for May


## Earnings Momentum

## Top 50 S\&P 500 Companies By EPS MOMENTUM

Earnings Momentum: The difference between 12-month trailing EPS and year-ago12-month trailing EPS divided by yearago 12-month trailing EPS.


868788899091929394959697989900010203040506070809101112


| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $-9.01 \%$ |
| Last 3 M onths | $-8.42 \%$ |
| Last 6 M onths | $3.68 \%$ |
| Last 12 Months | $-14.57 \%$ |
| 2012 YTD | $3.93 \%$ |

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for May

| Mo. |  |  |  |  | Mo. |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  |  | EPS Pr |  | In |  |  | EPS Price |  |
| Scrn. | Company | Ticker | Momentum | 05/31/2012 | Scrn. | Company | Ticker | Momentum | 05/31/2012 |
| New | ALLERGAN INC | AGN | 11133.3 | 90.25 | New | CHESAPEAKE ENERGY CORP | CHK | 133.0 | 16.90 |
| 8 | FIRST HORIZON NATIONAL CORP | FHN | 1016.9 | 8.48 | 4 | REGIONS FINANCIAL CORP | RF | 128.6 | 6.29 |
| 4 | EOG RESOURCES INC | EOG | 597.1 | 99.30 | New | ELECTRONIC ARTS INC | EA | 127.4 | 13.62 |
| 4 | GOODYEAR TIRE \& RUBBER CO | GT | 400.0 | 10.45 | 2 | HARMAN INTERNATIONAL INDS | HAR | 119.9 | 39.22 |
| 4 | DENBURY RESOURCES INC | DNR | 342.5 | 15.12 | 4 | CLOROX CO/DE | CLX | 113.6 | 68.80 |
| 4 | MERCK \& CO | MRK | 336.5 | 37.58 | 11 | ROBERT HALF INTL INC | RHI | 110.5 | 28.42 |
| New | PIONEER NATURAL RESOURCES | PXD | 324.1 | 96.70 | 8 | E TRADE FINANCIAL CORP | ETFC | 110.0 | 8.49 |
| 5 | LSI CORP | LSI | 316.7 | 6.65 | 12 | TESORO CORP | TSO | 109.0 | 22.12 |
| 8 | SUNTRUST BANKS INC | STI | 256.8 | 22.92 | 5 | VERISIGN INC | VRSN | 108.3 | 38.23 |
| 2 | RANGE RESOURCES CORP | RRC | 250.0 | 57.44 | 16 | PACCAR INC | PCAR | 105.7 | 37.57 |
| New | GENWORTH FINANCIAL INC | GNW | 240.0 | 5.24 | New | SYMANTEC CORP | SYMC | 105.2 | 14.84 |
| 7 | WILLIAMS COS INC | WMB | 224.3 | 30.53 | 2 | HOST HOTELS \& RESORTS INC | HST | 100.0 | 15.26 |
| 4 | EQUITY RESIDENTIAL | EQR | 196.7 | 61.10 | 7 | NVIDIA CORP | NVDA | 97.6 | 12.43 |
| 3 | CROWN CASTLE INTL CORP | CCl | 195.1 | 54.60 | 11 | HUNTINGTON BANCSHARES | HBAN | 96.9 | 6.54 |
| 14 | NUCOR CORP | NUE | 192.7 | 35.76 | 2 | PROLOGIS INC | PLD | 96.2 | 31.98 |
| 5 | D R HORTON INC | DHI | 180.0 | 16.60 | 2 | APPLE INC | AAPL | 94.8 | 577.73 |
| New | HEALTH CARE REIT INC | HCN | 169.0 | 55.47 | 17 | HARLEY-DAVIDSON INC | HOG | 94.7 | 48.18 |
| 10 | CF INDUSTRIES HOLDINGS INC | CF | 165.7 | 170.96 | 4 | FMC CORP | FMC | 92.6 | 50.97 |
| New | KIMCO REALTY CORP | KIM | 158.3 | 17.95 | 2 | DISCOVER FINANCIAL SVCS INC | DFS | 92.1 | 33.11 |
| 17 | TEXTRON INC | TXT | 153.2 | 23.63 | 16 | WYNN RESORTS LTD | WYNN | 92.0 | 103.04 |
| 5 | FORD MOTOR CO | F | 153.0 | 10.56 | 2 | PRICELINE.COM INC | PCLN | 91.7 | 625.49 |
| 2 | NEWFIELD EXPLORATION CO | NFX | 151.8 | 29.96 | 2 | FIFTH THIRD BANCORP | FITB | 90.2 | 13.35 |
| 4 | ASSURANT INC | AIZ | 151.0 | 33.38 | 2 | SIMON PROPERTY GROUP INC | SPG | 89.8 | 147.52 |
| 5 | ZIONS BANCORPORATION | ZION | 148.1 | 19.03 | 2 | STARWOOD HOTELS\&RESORTS W | HOT | 85.9 | 52.85 |
| 8 | NABORS INDUSTRIES LTD | NBR | 147.3 | 13.55 | 7 | INTERPUBLIC GROUP OF COS | IPG | 83.9 | 10.39 |

## Projected Five-Year EPS Growth

## Top 50 S\&P 500 Companies By PROJ. 5-YR EPS GROWTH

Projected 5-Year EPS Growth: The five-year EPS growth rate estimated by BofAML Fundamental Equity Research. If no BofAML estimate exist, then the IBES Mean Long Term Growth Estimate is used.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded
portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its
portion represents actual performance since January 1989. Back tested
Screen for May

| In |  |  | EPS Gr Price |  |
| :---: | :---: | :---: | :---: | :---: |
| Scrn | Company | Ticker | Next 5Yr |  |
| 19 | WYNN RESORTS LTD | WYNN | 51.7 | 103.04 |
| 25 | GOODYEAR TIRE \& RUBBER CO | GT | 43.6 | 10.45 |
| 14 | COMERICA INC | CMA | 40.0 | 30.42 |
| 2 | WESTERN DIGITAL CORP | WDC | 39.4 | 31.39 |
| 8 | SUNTRUST BANKS INC | STI | 35.6 | 22.92 |
| 6 | SEARS HOLDINGS CORP | SHLD | 32.3 | 49.40 |
| 28 | TEXTRON INC | TXT | 31.9 | 23.63 |
| 9 | LENNAR CORP | LEN | 30.4 | 27.29 |
| 11 | NETFLIX INC | NFLX | 30.0 | 63.44 |
| 27 | DISCOVERY COMMUNICATIONS INC | DISCA | 27.4 | 50.10 |
| New | ALEXION PHARMACEUTICALS INC | ALXN | 26.8 | 90.57 |
| 9 | NOBLE ENERGY INC | NBL | 25.7 | 84.46 |
| 23 | AUTONATION INC | AN | 25.7 | 36.02 |
| 17 | EQT CORP | EQT | 25.2 | 46.38 |
| 11 | ABERCROMBIE \& FITCH -CLA | ANF | 25.0 | 33.54 |
| 18 | F5 NETWORKS INC | FFIV | 25.0 | 103.48 |
| 14 | M \& T BANK CORP | M TB | 25.0 | 81.32 |
| 45 | SALESFORCE.COM INC | CRM | 25.0 | 138.62 |
| 2 | RANGE RESOURCES CORP | RRC | 24.8 | 57.44 |
| 4 | MARRIOTT INTL INC | MAR | 24.3 | 38.71 |
| 2 | SOUTHWEST AIRLINES | LUV | 22.9 | 9.03 |
| 2 | E TRADE FINANCIAL CORP | ETFC | 22.4 | 8.49 |
| 36 | METROPCS COMMUNICATIONS INC | PCS | 21.9 | 6.40 |
| 30 | CELGENE CORP | CELG | 21.7 | 68.25 |
| 8 | JOHNSON CONTROLS INC | JCI | 21.3 | 30.14 |



| Absolute Returns |  |
| :--- | ---: |
| Last 1 Month | $-9.35 \%$ |
| Last 3 Months | $-7.44 \%$ |
| Last 6 Months | $2.97 \%$ |
| Last 12 Months | $-12.34 \%$ |
| 2012 YTD | $6.38 \%$ |

## Positive Earnings Surprise

## Top S\&P 500 Companies By POSITIVE EPS SURPRISE

Earnings Surprise: A forecast earnings surprise variable which compares BofAML estimates to those of the consensus after adjusting for the range of estimates. Stocks are ranked from 1 to 10 , with 1 being among the most optimistic, relative to the consensus. 10 being among the most pessimistic.

$\begin{array}{lllllllllllllllllllllllllllllllllll}86 & 87 & 88 & 89 & 90 & 91 & 92 & 93 & 94 & 95 & 96 & 97 & 98 & 99 & 00 & 01 & 02 & 03 & 04 & 05 & 06 & 07 & 08 & 09 & 10 & 11 & 12\end{array}$

Source: BofA Merrill Lynch US Quantitative Strateg
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance


## Screen for May

| M 0 . |  |  |  |  | M 0 . |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  |  | ML vs. Price |  | In |  |  | MLvs. Price |  |
| Scrn. | Company | Ticker | Con | 05/31/2012 | Scrn. | Company | Ticker | Con | 05/31/2012 |
| New | ALPHANATURALRESOURCES INC | ANR | 1 | 10.48 | 4 | WELLS FARGO \& CO | W F C | 1 | 32.05 |
| New | AMERICAN INTERNATIONAL GROUI |  | 1 | 29.18 | 2 | ZIONS BANCORPORATION | Z ION | 1 | 19.03 |
| 8 | AUTONATION INC | AN | 1 | 36.02 | 2 | AFLAC INC | AFL | 2 | 40.08 |
| 4 | AUTOZONE INC | A Z O | 1 | 380.26 | N ew | AIR PRODUCTS \& CHEMICALS INC | APD | 2 | 79.04 |
| 2 | APPLEINC | AAPL | 1 | 577.73 | N ew | AIRGAS INC | ARG | 2 | 86.81 |
| New | BIOGEN IDEC INC | B IIB | 1 | 130.75 | 8 | ALLERGAN INC | A G N | 2 | 90.25 |
| 4 | BOEINGCO | B A | 1 | 69.61 | 2 | AMAZON.COM INC | $A M Z N$ | 2 | 212.91 |
| 19 | BOSTON SCIENTIFIC CORP | B S X | 1 | 5.74 | 8 | AMERICAN EXPRESS CO | AXP | 2 | 55.83 |
| 9 | CARMAX INC | K M X | 1 | 28.21 | 11 | ANADARKO PETROLEUM CORP | $A P C$ | 2 | 61.00 |
| 4 | CATERPILLAR INC | CAT | 1 | 87.62 | 3 | APACHECORP | APA | 2 | 81.38 |
| 2 | CONSOLENERGY INC | CNX | 1 | 28.08 | N ew | APARTMENT INVST \& MGMT CO | A IV | 2 | 27.07 |
| N ew | COVENTRY HEALTH CARE INC | CVH | 1 | 30.40 | 2 | $B B \& T C O R P$ | B B T | 2 | 30.22 |
| New | DEVON ENERGYCORP | DVN | 1 | 59.52 | 6 | BED BATH \& BEYOND INC | B B B Y | 2 | 72.25 |
| 4 | DIAMOND OFFSHRE DRILLING INC | DO | 1 | 58.18 | 3 | BEMIS COINC | BMS | 2 | 30.36 |
| 2 | EASTMAN CHEMICALCO | EM N | 1 | 46.56 | 5 | CHESAPEAKE ENERGYCORP | CHK | 2 | 16.90 |
| 13 | FLUOR CORP | FLR | 1 | 46.88 | N ew | CISCO SYSTEMS INC | CSCO | 2 | 16.33 |
| N ew | FOSSILINC | FOSL | 1 | 73.16 | 3 | CONSTELLATION BRANDS | STZ | 2 | 19.29 |
| New | GENERAL DYNAMICS CORP | G D | 1 | 64.01 | 2 | DOW CHEMICAL | DOW | 2 | 31.06 |
| 2 | GOODYEAR TIRE \& RUBBER CO | G T | 1 | 10.45 | 2 | EXELON CORP | EXC | 2 | 36.98 |
| 10 | HESS CORP | HES | 1 | 43.70 | 8 | EXXON MOBIL CORP | XOM | 2 | 78.63 |
| 5 | IN GERSOLL-RAND PLC | IR | 1 | 41.31 | 2 | FEDERATED INVESTORS INC | F II | 2 | 20.09 |
| 2 | LIFE TECHNOLOGIES CORP | LIFE | 1 | 40.91 | 2 | FMC TECHNOLOGIES INC | FTI | 2 | 40.24 |
| 2 | LINCOLN NATIONALCORP | LNC | 1 | 20.67 | 2 | MICROSOFTCORP | M SFT | 2 | 29.19 |
| 2 | M \& T BANK CORP | M TB | 1 | 81.32 | N ew | MORGAN STANLEY | M S | 2 | 13.36 |
| 2 | METLIFE INC | M ET | 1 | 29.21 | 2 | PEABODY ENERGYCORP | B TU | 2 | 23.36 |
| 6 | NETFLIX INC | NFLX | 1 | 63.44 | N ew | PHILLIPS 66 | PSX | 2 | 30.03 |
| 2 | NEWS CORP | N W S A | 1 | 19.20 | 2 | PNC FINANCIAL SVCS GROUP INC | PNC | 2 | 61.42 |
| 2 | O'REILLY AUTOMOTIVE INC | ORLY | 1 | 95.79 | 2 | PPLCORP | PPL | 2 | 27.37 |
| 2 | PACCAR INC | PCAR | 1 | 37.57 | 2 | SOUTHERNCO | SO | 2 | 45.91 |
| 8 | RAYTHEON CO | R TN | 1 | 50.32 | 3 | State Street corp | STT | 2 | 41.21 |
| 2 | SANDISK CORP | SNDK | 1 | 32.70 | New | TRAVELERS COS INC | TR V | 2 | 62.49 |
| 5 | SPECTRA ENERGY CORP | SE | 1 | 28.71 | New | TRIPADVISOR INC | TRIP | 2 | 42.88 |
| 10 | TERADATA CORP | T DC | 1 | 66.48 | New | TYSON FOODS INC -CLA | TSN | 2 | 19.37 |
| 3 | VALERO ENERGYCORP | VLO | 1 | 21.10 | 2 | UNITED TECHNOLOGIES CORP | UTX | 2 | 74.11 |
| 2 | WATSON PHARMACEUTICALS INC | W PI | 1 | 71.29 | 4 | XILINXINC | XLNX | 2 | 31.97 |
| 3 | WESTERN DIGITAL CORP | WDC | 1 | 31.39 | New | XL GROUP PLC | XL | 2 | 20.42 |

## Earnings Estimate Revision

Top 50 S\&P 500 Companies By UPWARD EPS EST. REVISION
EPS Estimate Revision: The difference between the I/B/E/S FY1 estimate and that of three months ago divided by the absolute value of the I/B/E/S FY1 estimate of three months ago.



| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $-9.24 \%$ |
| Last 3 M onths | $-9.84 \%$ |
| Last 6 M onths | $1.37 \%$ |
| Last 12 M onths | $-12.83 \%$ |
| 2012 YTD | $0.84 \%$ |

Source: BofA Merrill Lynch US Quantitative Strategy
The performance chart represents actual returns since July 1989. There is no back tested performance.
Screen for May

| Mo. |  |  |  |  |
| :--- | :--- | :--- | :--- | ---: |
| In |  |  | EPS Est. | Price |
| Scrn. Company | Ticker | Revision | 05/31/2012 |  |
|  |  |  |  |  |
| New | WPX ENERGY INC | WPX | 2.314 | 14.67 |
| New | NETFLIX INC | NFLX | 1.386 | 63.44 |
| 2 | AMERICAN INTERNATIONAL GROUIAIG | 0.497 | 29.18 |  |
| 4 | VULCAN MATERIALS CO | VMC | 0.462 | 34.65 |
| 2 | SEARS HOLDINGS CORP | SHLD | 0.436 | 49.40 |
| 3 | WASHINGTON POST -CL B | WPO | 0.384 | 348.82 |
| 4 | DR HORTON INC | DHI | 0.352 | 16.60 |
| 3 | WESTERN DIGITAL CORP | WDC | 0.339 | 31.39 |
| 4 | LSI CORP | LSI | 0.334 | 6.65 |
| 4 | PULTEGROUP INC | PHM | 0.310 | 9.36 |
| 3 | MARATHON PETROLEUM CORP | MPC | 0.300 | 36.07 |
| New | DEAN FOODS CO | DF | 0.288 | 15.64 |
| 2 | REGIONS FINANCIAL CORP | RF | 0.279 | 6.29 |
| 5 | TERADYNE INC | TER | 0.238 | 14.45 |
| 4 | APPLIED MATERIALS INC | AMAT | 0.221 | 10.33 |
| 4 | DISCOVER FINANCIAL SVCS INC | DFS | 0.189 | 33.11 |
| New | YAHOO INC | YHOO | 0.188 | 15.24 |
| 3 | ANADARKO PETROLEUM CORP | APC | 0.160 | 61.00 |
| 2 | AON PLC | AON | 0.156 | 46.50 |
| 3 | ADVANCED MICRO DEVICES | AMD | 0.151 | 6.08 |
| 7 | DENBURY RESOURCES INC | DNR | 0.140 | 15.12 |
| 2 | TENET HEALTHCARE CORP | THC | 0.133 | 4.71 |
| New | TESORO CORP | TSO | 0.131 | 22.12 |
| New | ALLSTATE CORP | ALL | 0.121 | 33.94 |
| 2 | TRAVELERS COS INC | TRV | 0.110 | 62.49 |


| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  |  | EPS Est. | Price |
| Scrn. Company | Ticker | Revision | 05/31/2012 |  |
|  |  |  |  |  |
| New | CAPITAL ONE FINANCIAL CORP | COF | 0.107 | 51.37 |
| New | CF INDUSTRIES HOLDINGS INC | CF | 0.106 | 170.96 |
| New | TRIPADVISOR INC | TRIP | 0.104 | 42.88 |
| 2 | PPG INDUSTRIES INC | PPG | 0.104 | 103.44 |
| 11 | APPLE INC | AAPL | 0.098 | 577.73 |
| New | SUNTRUST BANKS INC | STI | 0.095 | 22.92 |
| 2 | COMERICA INC | CMA | 0.093 | 30.42 |
| 3 | SAFEWAY INC | SWY | 0.093 | 19.02 |
| 7 | INTERPUBLIC GROUP OF COS | IPG | 0.089 | 10.39 |
| New | ROBERT HALF INTL INC | RHI | 0.089 | 28.42 |
| 2 | SHERWIN-WILLIAMS CO | SHW | 0.087 | 129.64 |
| New | NRG ENERGY INC | NRG | 0.085 | 15.32 |
| 3 | LENNAR CORP | LEN | 0.082 | 27.29 |
| New | MASCO CORP | MAS | 0.081 | 12.67 |
| 2 | GAP INC | GPS | 0.080 | 26.50 |
| 5 | BB\&T CORP | BBT | 0.076 | 30.22 |
| New | WYNN RESORTS LTD | WYNN | 0.076 | 103.04 |
| New | HUNTINGTON BANCSHARES | HBAN | 0.073 | 6.54 |
| New | HARTFORD FINANCIAL SERVICES | HIG | 0.072 | 16.82 |
| New | TJX COMPANIES INC | TJX | 0.071 | 42.46 |
| New | XL GROUP PLC | XL | 0.071 | 20.42 |
| New | CBS CORP | CBS | 0.071 | 31.92 |
| 2 | WYNDHAM WORLDWIDE CORP | WYN | 0.070 | 49.80 |
| 4 | EOG RESOURCES INC | EOG | 0.068 | 99.30 |
| New | BROADCOM CORP | BRCM | 0.067 | 32.35 |
|  |  |  |  |  |

## Equity Duration

## Top 50 S\&P 500 Companies By HIGH DURATION

Equity Duration: An adaptation of our Dividend Discount Model that measures the interest-rate sensitivity of a stock.
Longer duration (higher numbers) suggests more interest-rate sensitivity.


868788899091929394959697989900010203040506070809101112


| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $-6.70 \%$ |
| Last 3 M onths | $-4.73 \%$ |
| Last 6 M onths | $2.85 \%$ |
| Last 12 M onths | $-5.39 \%$ |
| 2012 YTD | $4.56 \%$ |



Source: BofA Merrill Lynch US Quantitative Strategy
portion reprea rerin from month end March 1986 to month end December 1988. The unshaded introduction and is not intended to be indicative of future performance
Screen for May

| Mo. |  |  |
| :--- | ---: | ---: |
| In | Equity | Price |
| Scrn. Company | Ticker | Duration |


| Mo. |  |  |  |
| :--- | ---: | ---: | ---: |
| In | Equity | Price |  |
| Scrn. Company | Ticker | Duration | $05 / 31 / 2012$ |


|  |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| 41 | PATTERSON COMPANIES INC | PDCO | 71.9 | 33.24 |
| 32 | TYSON FOODS INC -CL A | TSN | 52.0 | 19.37 |
| 16 | TEXAS INSTRUMENTS INC | TXN | 44.9 | 28.48 |
| 40 | NORDSTROM INC | JWN | 44.1 | 47.37 |
| 6 | PERRIGO CO | PRGO | 43.5 | 103.89 |
| 11 | AMAZON.COM INC | AMZN | 42.4 | 212.91 |
| 4 | XL GROUP PLC | XL | 41.8 | 20.42 |
| 16 | INTEL CORP | INTC | 40.0 | 25.84 |
| 7 | AMERICAN INTERNATIONAL GROUIAIG | 39.1 | 29.18 |  |
| 29 | ROBERT HALF INTL INC | RHI | 38.6 | 28.42 |
| 6 | MASTERCARD INC | MA | 38.3 | 406.51 |
| 11 | BALL CORP | BLL | 38.2 | 39.97 |
| 25 | SALESFORCE.COM INC | CRM | 38.2 | 138.62 |
| 14 | MEAD JOHNSON NUTRITION CO | MJN | 38.0 | 80.74 |
| 2 | EOG RESOURCES INC | EOG | 37.9 | 99.30 |
| 11 | INTUITIVE SURGICAL INC | ISRG | 37.6 | 523.10 |
| 7 | TJXCOMPANIES INC | TJX | 37.4 | 42.46 |
| 12 | CHIPOTLE MEXICAN GRILL INC | CMG | 37.3 | 413.07 |
| 7 | PROGRESSIVE CORP-OHIO | PGR | 37.2 | 21.73 |
| 3 | BEAM INC | BEAM | 37.1 | 60.56 |
| 22 | PRECISION CASTPARTS CORP | PCP | 36.9 | 166.21 |
| 4 | CITRIX SYSTEMS INC | CTXS | 36.9 | 73.08 |
| 4 | WHOLE FOODS MARKET INC | WFM | 36.8 | 88.61 |
| 5 | NIKE INC | NKE | 36.6 | 108.18 |
| 10 | RALPH LAUREN CORP | RL | 36.1 | 148.80 |


|  |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| 16 | COSTCO WHOLESALE CORP | COST | 36.0 | 86.39 |
| 7 | FEDEX CORP | FDX | 35.9 | 89.14 |
| 3 | VERISIGN INC | VRSN | 35.8 | 38.23 |
| 9 | GOODRICH CORP | GR | 35.8 | 125.77 |
| 5 | MONSANTO CO | MON | 35.6 | 77.20 |
| 11 | ALTERA CORP | ALTR | 35.5 | 33.41 |
| 3 | DANAHER CORP | DHR | 35.4 | 51.97 |
| New | ALLSTATE CORP | ALL | 35.4 | 33.94 |
| 3 | NRG ENERGY INC | NRG | 35.3 | 15.32 |
| New | DEAN FOODS CO | DF | 35.2 | 15.64 |
| 10 | GRAINGER (W W) INC | GWW | 35.1 | 193.65 |
| New | PEPSICO INC | PEP | 35.1 | 67.85 |
| 6 | BOSTON PROPERTIES INC | BXP | 34.9 | 102.93 |
| New | ROSS STORES INC | ROST | 34.9 | 63.23 |
| 29 | GENWORTH FINANCIAL INC | GNW | 34.8 | 5.24 |
| 2 | SARA LEE CORP | SLE | 34.8 | 20.90 |
| 4 | ALLERGAN INC | AGN | 34.7 | 90.25 |
| New | EDWARDS LIFESCIENCES CORP | EW | 34.7 | 85.37 |
| 2 | EBAY INC | EBAY | 34.5 | 39.19 |
| New | STERICYCLE INC | SRCL | 34.3 | 87.26 |
| New | EXPEDIA INC | EXPE | 34.3 | 45.89 |
| New | CINTAS CORP | CTAS | 34.1 | 36.90 |
| New | INTUIT INC | INTU | 34.1 | 56.23 |
| 18 | FLUOR CORP | FLR | 33.9 | 46.88 |
| 5 | RED HAT INC | RHT | 33.8 | 51.38 |

## Earnings Torpedo

## Top S\&P 500 Companies By LOW EPS TORPEDO

Earnings Torpedo: I/B/E/S FY2 estimate less latest actual annual EPS divided by month-end price.


868788899091929394959697989900010203040506070809101112


| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $-9.13 \%$ |
| Last 3 M onths | $-10.67 \%$ |
| Last 6 M onths | $-1.60 \%$ |
| Last 12 M onths | $-9.87 \%$ |
| 2012 YTD | $-1.83 \%$ |

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end May 1986 to month end December 1988. The unshaded
portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for May

| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  |  | EPS | Price |
| Scrn. Company | Ticker | Torpedo | 05/31/2012 |  |
|  |  |  |  |  |
| 7 | ALPHA NATURAL RESOURCES INC ANR | -0.207 | 10.48 |  |
| 6 | FIRST SOLAR INC | FSLR | -0.162 | 12.56 |
| 4 | WPX ENERGY INC | WPX | -0.087 | 14.67 |
| 29 | NRG ENERGY INC | NRG | -0.085 | 15.32 |
| 5 | SPRINT NEXTEL CORP | S | -0.075 | 2.57 |
| 8 | DEVRY INC | DV | -0.059 | 27.33 |
| 2 | CHESAPEAKE ENERGY CORP | CHK | -0.058 | 16.90 |
| 14 | FOREST LABORATORIES -CLA | FRX | -0.058 | 35.00 |
| 20 | APOLLO GROUP INC -CL A | APOL | -0.055 | 31.82 |
| 2 | SANDISK CORP | SNDK | -0.046 | 32.70 |
| New | CONOCOPHILLIPS | COP | -0.038 | 52.16 |
| 20 | ENTERGY CORP | ETR | -0.035 | 64.53 |
| 8 | NETFLIX INC | NFLX | -0.034 | 63.44 |
| 26 | EXELON CORP | EXC | -0.030 | 36.98 |
| 28 | DIAMOND OFFSHRE DRILLING INC | DO | -0.030 | 58.18 |
| 4 | PITNEY BOWES INC | PBI | -0.029 | 13.64 |
| New | AVON PRODUCTS | AVP | -0.027 | 16.55 |
| 3 | CONSOL ENERGY INC | CNX | -0.022 | 28.08 |
| 27 | AMEREN CORP | AEE | -0.021 | 32.31 |
| 2 | CLIFFS NATURAL RESOURCES INC CLF | -0.021 | 47.78 |  |
| 7 | HEWLETT-PACKARD CO | HPQ | -0.020 | 22.68 |
| 9 | CORNING INC | GLW | -0.019 | 12.99 |
| 4 | WINDSTREAM CORP | WIN | -0.019 | 9.36 |
| 7 | COMPUTER SCIENCES CORP | CSC | -0.019 | 26.64 |
| 17 | LILLY (ELI) \& CO | LLY | -0.017 | 40.95 |


| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  |  | EPS | Price |
| Scrn. | Company | Ticker | Torpedo | 05/31/2012 |
|  |  |  |  |  |
| $\mathbf{1 1}$ | LINEAR TECHNOLOGY CORP | LLTC | -0.016 | 29.02 |
| $\mathbf{1 6}$ | LEXMARK INTL INC -CL A | LXK | -0.015 | 25.01 |
| 3 | NEWFIELD EXPLORATION CO | NFX | -0.015 | 29.96 |
| 28 | EDISON INTERNATIONAL | EIX | -0.014 | 44.96 |
| 7 | APPLIED MATERIALS INC | AMAT | -0.013 | 10.33 |
| 4 | CF INDUSTRIES HOLDINGS INC | CF | -0.013 | 170.96 |
| 2 | SOUTHWESTERN ENERGY CO | SWN | -0.012 | 28.03 |
| 8 | HOSPIRA INC | HSP | -0.012 | 31.26 |
| 16 | PPL CORP | PPL | -0.012 | 27.37 |
| 4 | MARATHON PETROLEUM CORP | MPC | -0.012 | 36.07 |
| New | METROPCS COM MUNICATIONS INC PCS | -0.011 | 6.40 |  |
| 5 | PG\&E CORP | PCG | -0.011 | 43.70 |
| 5 | BRISTOL-MYERS SQUIBB CO | BMY | -0.011 | 33.34 |
| 28 | PUBLIC SERVICE ENTRP GRP INC | PEG | -0.010 | 31.19 |
| 4 | ARCHER-DANIELS-MIDLAND CO | ADM | -0.010 | 31.88 |
| New | JDS UNIPHASE CORP | JDSU | -0.010 | 10.15 |
| 5 | FIRSTENERGY CORP | FE | -0.009 | 46.79 |
| New | DELL INC | DELL | -0.008 | 12.33 |
| 4 | NORTHROP GRUMMAN CORP | NOC | -0.007 | 58.75 |
| 2 | PEABODY ENERGY CORP | BTU | -0.007 | 23.36 |
| 5 | KEYCORP | KEY | -0.007 | 7.50 |
| 6 | DISCOVER FINANCIAL SVCS INC | DFS | -0.006 | 33.11 |
| 28 | CENTURYLINK INC | CTL | -0.006 | 39.22 |
| 4 | ALTERA CORP | ALTR | -0.005 | 33.41 |
| 3 | CARNIVAL CORP/PLC (USA) | CCL | -0.004 | 32.09 |
|  |  |  |  |  |

## Negative Earnings Surprise

## Top S\&P 500 Companies By NEGATIVE EPS SURPRISE



Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded


| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $-8.18 \%$ |
| Last 3 M onths | $-6.36 \%$ |
| Last 6 M onths | $2.13 \%$ |
| Last 12 Months | $-8.07 \%$ |
| 2012 YTD | $2.69 \%$ |

portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

| M 0 . |  |  |  |  | M 0 . |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  |  | ML vs. | Price | In |  |  | MLvs. | Price |
| Scrn. | Company | Ticker | Con | 05/31/2012 | Scrn. | Company | Ticker | Con | 05/31/2012 |
| 5 | AMERICAN TOWER CORP | AM T | 10 | 64.88 | New | ACELTD | ACE | 9 | 72.33 |
| 9 | BALLCORP | BLL | 10 | 39.97 | 2 | ADVANCED MICRO DEVICES | AMD | 9 | 6.08 |
| New | CLIFFS NATURAL RESOURCES INC | CLF | 10 | 47.78 | N ew | ANALOG DEVICES | ADI | 9 | 36.37 |
| 3 | COACHINC | COH | 10 | 67.45 | New | AUTODESK INC | ADSK | 9 | 32.02 |
| 6 | COCA-COLACO | KO | 10 | 74.73 | New | AVON PRODUCTS | AVP | 9 | 16.55 |
| 2 | COVIDIEN PLC | COV | 10 | 51.78 | N ew | CAMPBELL SOUPCO | CPB | 9 | 31.70 |
| 32 | CVS CAREMARK CORP | CVS | 10 | 44.94 | 4 | CENTERPOINT ENERGY INC | CNP | 9 | 20.23 |
| New | EDISON INTERNATIONAL | EIX | 10 | 44.96 | New | COLGATE-PALMOLIVE CO | CL | 9 | 98.30 |
| New | FEDEX CORP | FDX | 10 | 89.14 | 2 | CSX CORP | CSX | 9 | 20.89 |
| 8 | GOODRICHCORP | G R | 10 | 125.77 | 5 | EMERSON ELECTRIC CO | EMR | 9 | 46.77 |
| 8 | HONEYWELL INTERNATIONALINC | HON | 10 | 55.66 | N ew | ILLINOIS TOOL WORKS | ITW | 9 | 56.15 |
| 8 | HOSPIRA INC | HSP | 10 | 31.26 | 2 | INTLPAPER CO | IP | 9 | 29.20 |
| New | JPMORGAN CHASE \& CO | JPM | 10 | 33.15 | 5 | KOHL'S CORP | KSS | 9 | 45.82 |
| New | KIM BERLY-CLARK CORP | KMB | 10 | 79.35 | New | LIM ITED BRANDS INC | LTD | 9 | 44.36 |
| 8 | L-3 COMMUNICATIONS HLDGS INC | LLL | 10 | 68.19 | 4 | LOCKHEED MARTIN CORP | LM T | 9 | 82.80 |
| 16 | LABORATORY CP OF AMER HLDGS | LH | 10 | 83.28 | 5 | MCDONALD'S CORP | MCD | 9 | 89.34 |
| New | MACY'S INC | M | 10 | 38.05 | New | MEAD JOHNSON NUTRITION CO | M JN | 9 | 80.74 |
| 3 | MOLSON COORS BREWING CO | TAP | 10 | 38.45 | New | MONSANTOCO | MON | 9 | 77.20 |
| 8 | M YLAN INC | M Y L | 10 | 21.67 | 2 | MOSAIC CO | MOS | 9 | 47.68 |
| 10 | NORDSTROM INC | JWN | 10 | 47.37 | 5 | NUCOR CORP | NUE | 9 | 35.76 |
| 4 | NORTHEAST UTILITIES | NU | 10 | 36.01 | 4 | PG\&E CORP | PCG | 9 | 43.70 |
| New | PENNEY (J C) CO | JCP | 10 | 26.23 | New | PHILIP MORRIS INTERNATIONAL | PM | 9 | 84.51 |
| 6 | PEPSICO INC | PEP | 10 | 67.85 | New | QUEST DIAGNOSTICS INC | DGX | 9 | 56.90 |
| 4 | PFIZER INC | PFE | 10 | 21.87 | 2 | ROSS STORES INC | ROST | 9 | 63.23 |
| 79 | QUALCOMM INC | QCOM | 10 | 57.31 | New | SALESFORCE.COM INC | CRM | 9 | 138.62 |
| New | ROBERT HALF INTL INC | R HI | 10 | 28.42 | 2 | SCHLUMBERGER LTD | SLB | 9 | 63.25 |
| 2 | ROCKWELL COLLINS INC | COL | 10 | 50.37 | 4 | SEALED AIR CORP | SEE | 9 | 15.65 |
| 6 | STAPLES INC | SPLS | 10 | 13.14 | 2 | SOUTHWEST AIRLINES | LUV | 9 | 9.03 |
| 2 | SUNTRUST BANKS INC | STI | 10 | 22.92 | 2 | STRYKER CORP | SYK | 9 | 51.45 |
| 4 | TERADYNE INC | TER | 10 | 14.45 | 4 | SUNOCO INC | SUN | 9 | 46.45 |
| 2 | TYCO INTERNATIONAL LTD | TYC | 10 | 53.16 | 2 | TEXTRON INC | TXT | 9 | 23.63 |
| 2 | UNION PACIFIC CORP | UNP | 10 | 111.40 | New | TJX COMPANIES INC | TJX | 9 | 42.46 |
| 8 | UNITED STATES STEEL CORP | $X$ | 10 | 20.30 | New | WHOLE FOODS MARKET INC | WFM | 9 | 88.61 |
| 9 | WYNN RESORTS LTD | WYNN | 10 | 103.04 | New | WISCONSIN ENERGY CORP | WEC | 9 | 37.84 |
| New | ABBOTT LABORATORIES | $A B T$ | 9 | 61.79 | 5 | ZIMMER HOLDINGS INC | Z M H | 9 | 60.65 |

## One-Year Return on Equity

## Top 50 S\&P 500 Companies By ROE (1-Yr Average)

Return on Equity One-Year Average: Net income divided by average equity provided.


868788899091929394959697989900010203040506070809101112


| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $-7.68 \%$ |
| Last 3 M onths | $-6.58 \%$ |
| Last 6 Months | $4.72 \%$ |
| Last 12 Months | $-3.71 \%$ |
| 2012 YTD | $4.32 \%$ |

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end April 1997. The unshaded portion represents actual performance since May 1997. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for May

Mo.

| In |  | Price |  |  | In |  | Ticker | Price |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn. | Company | Ticker | ROE | 05/31/2012 | Scrn. | Company |  | ROE | 05/31/2012 |
| 40 | PHILIP MORRIS INTERNATIONAL | PM | 430.5 | 84.51 | 62 | MCGRAW-HILL COMPANIES | M HP | 42.5 | 43.38 |
| New | FORD MOTOR CO | F | 200.3 | 10.56 | 83 | ROCKWELL COLLINS INC | COL | 41.8 | 50.37 |
| 35 | WESTERN UNION CO | wu | 192.8 | 16.40 | 9 | DEERE \& CO | DE | 40.1 | 73.87 |
| 170 | COLGATE-PALMOLIVE CO | CL | 104.0 | 98.30 | 53 | GILEAD SCIENCES INC | GILD | 39.1 | 49.95 |
| 62 | LOCKHEED MARTIN CORP | LMT | 103.5 | 82.80 | 11 | CATERPILLAR INC | CAT | 38.3 | 87.62 |
| 29 | BOEING CO | BA | 97.3 | 69.61 | 62 | MICROSOFT CORP | MSFT | 38.2 | 29.19 |
| 17 | LINEAR TECHNOLOGY CORP | LLTC | 84.3 | 29.02 | New | MCDONALD'S CORP | MCD | 38.2 | 89.34 |
| 118 | YUM BRANDS INC | Yum | 77.1 | 70.36 | 3 | TRIPADVISOR INC | TRIP | 37.7 | 42.88 |
| 7 | HERSHEY CO | HSY | 76.9 | 66.86 | 11 | ROCKWELL AUTOMATION | ROK | 37.6 | 72.51 |
| 38 | ALTRIA GROUP INC | MO | 74.9 | 32.19 | 2 | EXPRESS SCRIPTS HOLDING CO | ESRX | 36.1 | 52.19 |
| 4 | MARRIOTT INTL INC | MAR | 74.7 | 38.71 | 8 | CUMMINS INC | CMI | 36.0 | 96.95 |
| 59 | INTL BUSINESS MACHINES CORP | IBM | 74.0 | 192.90 | 19 | DELL INC | DELL | 35.9 | 12.33 |
| 5 | VERISIGN INC | VRSN | 68.5 | 38.23 | 16 | JOY GLOBAL INC | JOY | 35.9 | 55.86 |
| 112 | CAMPBELL SOUP CO | CPB | 64.0 | 31.70 | 5 | C H ROBINSON WORLDWIDE INC | CHRW | 35.6 | 58.26 |
| 11 | ACCENTURE PLC | ACN | 62.7 | 57.10 | 54 | PAYCHEX INC | PAYX | 35.5 | 29.97 |
| 148 | KELLOGG CO | K | 56.0 | 48.78 | 2 | MASTERCARD INC | MA | 35.0 | 406.51 |
| 93 | COACH INC | COH | 53.8 | 67.45 | 95 | WATERS CORP | WAT | 35.0 | 79.78 |
| 8 | APOLLO GROUP INC -CLA | APOL | 51.1 | 31.82 | 4 | CF INDUSTRIES HOLDINGS INC | CF | 35.0 | 170.96 |
| 52 | TJX COMPANIES INC | TJX | 51.1 | 42.46 | 18 | NETFLIX INC | NFLX | 34.4 | 63.44 |
| 13 | PRICELINE.COM INC | PCLN | 50.6 | 625.49 | 5 | DU PONT (EI) DE NEMOURS | DD | 34.0 | 48.26 |
| 6 | BLOCK H\&RINC | HRB | 50.5 | 15.27 | 4 | DOLLAR TREE INC | DLTR | 33.9 | 103.18 |
| New | UNITED PARCEL SERVICE INC | UPS | 49.5 | 74.94 | 2 | FAmily dollar stores | FDO | 33.8 | 67.75 |
| 29 | APPLE INC | AAPL | 47.1 | 577.73 | 2 | FMC CORP | FMC | 33.8 | 50.97 |
| 3 | ROSS STORES INC | ROST | 45.9 | 63.23 | New | baXter international inc | bax | 33.3 | 50.62 |
| New | WYNN RESORTS LTD | WYnN | 43.5 | 103.04 | 5 | EASTMAN Chemical co | EMN | 33.0 | 46.56 |

## Five-Year Return on Equity

Top 50 S\&P 500 Companies By ROE (5-Yr Average)
Return on Equity Five-year Average: Five-year average return on equity.


868788899091929394959697989900010203040506070809101112


| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $-7.81 \%$ |
| Last 3 M onths | $-6.50 \%$ |
| Last 6 M onths | $2.37 \%$ |
| Last 12 M onths | $-3.33 \%$ |
| 2012 YTD | $2.51 \%$ |

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end April 1997. The unshaded portion represents actual performance since May 1997. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for May

| Mo.InScrn | Company | 5-Yr |  |  | Mo. |  | 5-Yr |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Avg | Price | In |  |  | Avg | Price |
|  |  | Ticker | ROE | 05/31/2012 | Scrn | Company | Ticker | ROE | 05/31/2012 |
| 48 | LORILLARD INC | LO | 200.7 | 123.60 | 51 | MCGRAW-HILL COMPANIES | M HP | 47.0 | 43.38 |
| 67 | AUTOZONE INC | AZO | 169.6 | 380.26 | 122 | WATERS CORP | WAT | 45.7 | 79.78 |
| 51 | PHILIP MORRIS INTERNATIONAL | PM | 162.8 | 84.51 | 93 | COACH INC | COH | 45.6 | 67.45 |
| 40 | BOEING CO | BA | 142.2 | 69.61 | 34 | MICROSOFT CORP | MSFT | 43.8 | 29.19 |
| 34 | LINEAR TECHNOLOGY CORP | LLTC | 136.0 | 29.02 | 133 | TJX COMPANIES INC | TJX | 43.7 | 42.46 |
| 60 | YUM BRANDS INC | YUM | 131.6 | 70.36 | 3 | TRIPADVISOR INC | TRIP | 42.7 | 42.88 |
| 60 | PITNEY BOWES INC | PBI | 125.2 | 13.64 | 60 | ROCKWELL COLLINS INC | COL | 42.6 | 50.37 |
| 113 | COLGATE-PALMOLIVE CO | CL | 90.1 | 98.30 | 3 | LIMITED BRANDS INC | LTD | 42.0 | 44.36 |
| 51 | WINDSTREAM CORP | WIN | 90.1 | 9.36 | 4 | TENET HEALTHCARE CORP | THC | 41.1 | 4.71 |
| 60 | CAMPBELL SOUP CO | CPB | 71.7 | 31.70 | 4 | NETFLIX INC | NFLX | 38.8 | 63.44 |
| 28 | LOCKHEED MARTIN CORP | LMT | 70.9 | 82.80 | 15 | ROSS STORES INC | ROST | 38.2 | 63.23 |
| 30 | MEAD JOHNSON NUTRITION CO | MJN | 69.5 | 80.74 | 31 | PRICELINE.COM INC | PCLN | 38.1 | 625.49 |
| 135 | AVON PRODUCTS | AVP | 66.8 | 16.55 | 110 | FEDERATED INVESTORS INC | FII | 37.9 | 20.09 |
| 11 | ACCENTURE PLC | ACN | 65.0 | 57.10 | 28 | NORDSTROM INC | JWN | 35.6 | 47.37 |
| 63 | HERSHEY CO | HSY | 64.1 | 66.86 | 35 | PAYCHEX INC | PAYX | 35.5 | 29.97 |
| 27 | ALTRIA GROUP INC | MO | 62.8 | 32.19 | 99 | PEPSICO INC | PEP | 35.0 | 67.85 |
| 39 | INTL BUSINESS MACHINES CORP | IBM | 61.6 | 192.90 | 16 | FMC TECHNOLOGIES INC | FTI | 34.8 | 40.24 |
| 16 | DIRECTV | DTV | 58.8 | 44.45 | 52 | CATERPILLAR INC | CAT | 34.8 | 87.62 |
| 60 | KELLOGG CO | K | 58.0 | 48.78 | 27 | KIMBERLY-CLARK CORP | KMB | 34.2 | 79.35 |
| 121 | APOLLO GROUP INC -CL A | APOL | 56.0 | 31.82 | 16 | ALTERA CORP | ALTR | 33.7 | 33.41 |
| 2 | EXPRESS SCRIPTS HOLDING CO | ESRX | 53.0 | 52.19 | 15 | C H ROBINSON WORLDWIDE INC | CHRW | 33.6 | 58.26 |
| 15 | GILEAD SCIENCES INC | GILD | 51.2 | 49.95 | 12 | BLOCK H\&R INC | HRB | 33.0 | 15.27 |
| 60 | HEINZ (H) CO | HNZ | 48.8 | 53.08 | 4 | CF INDUSTRIES HOLDINGS INC | CF | 32.8 | 170.96 |
| 107 | DELL INC | DELL | 48.5 | 12.33 | 8 | APPLE INC | AAPL | 32.8 | 577.73 |
| 16 | JOY GLOBAL INC | JOY | 48.3 | 55.86 | 28 | DIAMOND OFFSHRE DRILLING INC | DO | 32.6 | 58.18 |

## One-Year Return on Equity (Adjusted for Debt)

Top 50 S\&P 500 Companies By ROE (1-Yr Avg. Adj. for Debt)
Return on Equity One-Year Average (Adjusted for Debt): The ROE of companies with higher debt levels are considered lower than those of companies with lower debt levels based on their debt-to-equity ratios.


868788899091929394959697989900010203040506070809101112


| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $-7.04 \%$ |
| Last 3 Months | $-4.51 \%$ |
| Last 6 Months | $6.42 \%$ |
| Last 12 Months | $1.15 \%$ |
| 2012 YTD | $6.24 \%$ |

Source: BofA Merill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end April 1997. The unshaded portion represents actual performance since May 1997. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for May

| Mo. |  |
| :--- | :--- |
| In |  |
| Scrn. | Company |
|  |  |
| 6 | ACCENTURE PLC |
| 93 | COACH INC |
| 59 | APOLLO GROUP INC -CL A |
| 3 | ROSS STORES INC |
| 162 | TJX COMPANIES INC |
| 35 | MASTERCARD INC |
| New | PRICELINE.COM INC |
| 23 | CUMMINS INC |
| 35 | MICROSOFT CORP |
| 64 | VARIAN MEDICAL SYSTEMS INC |
| 2 | FOSSIL INC |
| 23 | GRAINGER (W W) INC |
| New | STARBUCKS CORP |
| 3 | BLOCK H \& R INC |
| 4 | EXXON MOBIL CORP |
| 7 | CF INDUSTRIES HOLDINGS INC |
| 14 | CHIPOTLE MEXICAN GRILL INC |
| 28 | MCGRAW-HILL COMPANIES |
| 23 | INTEL CORP |
| 12 | BROWN-FORMAN -CL B |
| 62 | NIKE INC |
| 52 | AUTOMATIC DATA PROCESSING |
| 13 | TERADATA CORP |
| 17 | CHEVRON CORP |
| 13 | INTUIT INC |

# Five-Year Return on Equity (Adjusted by Debt) 

Top 50 S\&P 500 Companies By ROE (5-Yr Avg. Adj. for Debt)
Return on Equity Five-year Average (Adjusted for Debt): The average five year ROE of companies with higher debt levels are considered lower than those of companies with lower debt levels based on their debt-to-equity ratios.


The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end April 1997. The unshaded portion epresents actual performance since May 1997. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction represents actual performance since May 1997. Back tested
and is not intended to be indicative of future performance
Screen for May

| Mo. <br> In |  | Debt |  |  | Mo. |  | Debt |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Adj 5Yr Price |  |  | In |  | Adj 5Yr Price |  |  |
| Scrn. | Company | Ticker | ROE | 05/31/2012 | Scrn | Company | Ticker | ROE | 05/31/2012 |
| 6 | ACCENTURE PLC | ACN | 65.0 | 57.10 | 2 | FOSSIL INC | FOSL | 20.7 | 73.16 |
| 59 | APOLLO GROUP INC -CL A | APOL | 51.2 | 31.82 | 28 | CORNING INC | GLW | 20.4 | 12.99 |
| 93 | COACH INC | COH | 45.1 | 67.45 | 63 | CHEVRON CORP | CVX | 20.4 | 98.31 |
| 35 | MICROSOFT CORP | MSFT | 36.2 | 29.19 | 27 | TOTAL SYSTEM SERVICES INC | TSS | 20.0 | 23.27 |
| 30 | ROSS STORES INC | ROST | 34.6 | 63.23 | 16 | FLOWSERVE CORP | FLS | 19.8 | 102.78 |
| 67 | TJX COMPANIES INC | TJX | 33.4 | 42.46 | 3 | BIG LOTS INC | BIG | 19.8 | 36.75 |
| 28 | MASTERCARD INC | MA | 32.1 | 406.51 | 12 | BROWN-FORMAN -CL B | BF.B | 19.5 | 87.18 |
| 64 | VARIAN MEDICAL SYSTEMS INC | VAR | 30.0 | 58.66 | 180 | JOHNSON \& JOHNSON | JNJ | 19.5 | 62.43 |
| 50 | AMAZON.COM INC | AMZN | 28.4 | 212.91 | 180 | SIGMA-ALDRICH CORP | SIAL | 18.9 | 69.37 |
| 100 | EXXON MOBIL CORP | XOM | 26.6 | 78.63 | 16 | FMC TECHNOLOGIES INC | FTI | 18.9 | 40.24 |
| New | PRICELINE.COM INC | PCLN | 25.3 | 625.49 | 8 | FLIR SYSTEMS INC | FLIR | 18.6 | 21.33 |
| 13 | TERADATA CORP | TDC | 25.3 | 66.48 | 11 | GOOGLE INC | GOOG | 18.5 | 580.86 |
| 20 | MCGRAW-HILL COMPANIES | M HP | 25.0 | 43.38 | 4 | CHIPOTLE MEXICAN GRILL INC | CMG | 18.5 | 413.07 |
| 34 | 3M CO | MMM | 22.2 | 84.41 | 52 | SCHLUMBERGER LTD | SLB | 18.4 | 63.25 |
| 60 | AUTOMATIC DATA PROCESSING | ADP | 22.1 | 52.15 | New | DELL INC | DELL | 18.4 | 12.33 |
| 4 | CF INDUSTRIES HOLDINGS INC | CF | 22.1 | 170.96 | 51 | FLUOR CORP | FLR | 18.2 | 46.88 |
| 28 | DIAMOND OFFSHRE DRILLING INC | DO | 21.5 | 58.18 | New | INTUIT INC | INTU | 17.8 | 56.23 |
| 58 | CUMMINS INC | CMI | 21.4 | 96.95 | 2 | ROCKWELL COLLINS INC | COL | 17.8 | 50.37 |
| 44 | PRECISION CASTPARTS CORP | PCP | 21.2 | 166.21 | 7 | MICROCHIP TECHNOLOGY INC | MCHP | 17.4 | 31.02 |
| 11 | GRAINGER (W W) INC | GWW | 21.2 | 193.65 | 3 | LILLY (ELI) \& CO | LLY | 17.4 | 40.95 |
| 111 | NIKE INC | NKE | 21.2 | 108.18 | 2 | FEDERATED INVESTORS INC | FII | 17.4 | 20.09 |
| 35 | WESTERN DIGITAL CORP | WDC | 20.9 | 31.39 | 2 | ROCKWELL AUTOMATION | ROK | 17.1 | 72.51 |
| 9 | MOSAIC CO | MOS | 20.9 | 47.68 | 16 | SHERWIN-WILLIAMS CO | SHW | 17.0 | 129.64 |
| 17 | WATERS CORP | WAT | 20.9 | 79.78 | New | LAUDER (ESTEE) COS INC -CL A | EL | 16.9 | 54.15 |
| 22 | STARBUCKS CORP | SBUX | 20.7 | 54.89 | 52 | ROBERT HALF INTL INC | RHI | 16.9 | 28.42 |

## Return on Assets

## Top 50 S\&P 500 Companies by ROA.

Return on Assets: Net income plus interest and taxes as a percent of average total assets.


868788899091929394959697989900010203040506070809101112


| Absolute Returns |  |
| :--- | ---: |
| Last1 Month | $-7.47 \%$ |
| Last 3 Months | $-4.17 \%$ |
| Last 6 Months | $9.60 \%$ |
| Last 12 M onths | $3.20 \%$ |
| 2012 YTD | $8.91 \%$ |

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end April 1997. The unshaded portion represents actual performance since May 1997. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for May

Mo.

| In | Price |  |
| :--- | ---: | ---: |
| Scrn. Company | Ticker | ROA |
| $05 / 31 / 2012$ |  |  |


| Scrn. Company | Ticker | ROA | 05/31/2012 |  |
| :--- | :--- | :--- | ---: | ---: |
|  |  |  |  |  |
| 93 | COACH INC | COH | 34.7 | 67.45 |
| 48 | LORILLARD INC | LO | 31.4 | 123.60 |
| 29 | APPLE INC | AAPL | 31.4 | 577.73 |
| 31 | PRICELINE.COM INC | PCLN | 27.8 | 625.49 |
| 104 | LINEAR TECHNOLOGY CORP | LLTC | 27.4 | 29.02 |
| 40 | PHILIP MORRIS INTERNATIONAL | PM | 24.6 | 84.51 |
| 45 | FASTENAL CO | FAST | 22.7 | 44.23 |
| 83 | MICROSOFT CORP | MSFT | 21.4 | 29.19 |
| 130 | MOODY'S CORP | MCO | 21.4 | 36.59 |
| 8 | APOLLO GROUP INC -CL A | APOL | 21.1 | 31.82 |
| 3 | ROSS STORES INC | ROST | 21.1 | 63.23 |
| 3 | TRIPADVISOR INC | TRIP | 21.1 | 42.88 |
| 64 | C H ROBINSON WORLDWIDE INC | CHRW | 20.9 | 58.26 |
| 6 | DOLLAR TREE INC | DLTR | 20.8 | 103.18 |
| 31 | MASTERCARD INC | MA | 20.6 | 406.51 |
| 38 | TJX COMPANIES INC | TJX | 20.0 | 42.46 |
| 2 | FOSSIL INC | FOSL | 19.8 | 73.16 |
| 30 | MEAD JOHNSON NUTRITION CO | MJN | 19.8 | 80.74 |
| 29 | PRICE (T. ROWE) GROUP | TROW | 19.5 | 57.59 |
| 65 | COLGATE-PALMOLIVE CO | CL | 19.4 | 98.30 |
| 23 | INTEL CORP | INTC | 18.2 | 25.84 |
| 48 | INTUITIVE SURGICAL INC | ISRG | 18.1 | 523.10 |
| 67 | COGNIZANT TECH SOLUTIONS | CTSH | 17.8 | 58.25 |
| New | STARBUCKS CORP | SBUX | 17.7 | 54.89 |
| 9 | BED BATH \& BEYOND INC | BBBY | 17.4 | 72.25 |

Mo.
In Price
Scrn. Company
Ticker
ROA 05/31/2012

| 4 | CF INDUSTRIES HOLDINGS INC | CF | 17.3 | 170.96 |
| :--- | :--- | :--- | :--- | ---: |
| 14 | CHIPOTLE MEXICAN GRILL INC | CMG | 17.2 | 413.07 |
| 8 | CUMMINS INC | CMI | 17.2 | 96.95 |
| 5 | YUM BRANDS INC | YUM | 17.0 | 70.36 |
| 11 | ACCENTURE PLC | ACN | 17.0 | 57.10 |
| New | MCDONALD'S CORP | MCD | 17.0 | 89.34 |
| 61 | WATERS CORP | WAT | 16.2 | 79.78 |
| 8 | F5 NETWORKS INC | FFIV | 16.1 | 103.48 |
| 14 | KLA-TENCOR CORP | KLAC | 16.1 | 45.83 |
| 12 | BROWN-FORMAN -CL B | BF.B | 16.0 | 87.18 |
| 47 | VARIAN MEDICAL SYSTEMS INC | VAR | 15.9 | 58.66 |
| 5 | GRAINGER (W W) INC | GWW | 15.8 | 193.65 |
| 26 | ALTERA CORP | ALTR | 15.8 | 33.41 |
| 37 | GOOGLE INC | GOOG | 15.8 | 580.86 |
| 53 | GILEAD SCIENCES INC | GILD | 15.8 | 49.95 |
| 5 | NIKE INC | NKE | 15.5 | 108.18 |
| 5 | TERADYNE INC | TER | 15.2 | 14.45 |
| 2 | HERSHEY CO | HSY | 15.1 | 66.86 |
| 5 | AUTOZONE INC | AZO | 15.0 | 380.26 |
| New | DUN \& BRADSTREET CORP | DNB | 14.7 | 67.57 |
| 10 | TERADATA CORP | TDC | 14.7 | 66.48 |
| 2 | CELGENE CORP | CELG | 14.5 | 68.25 |
| New | JOY GLOBAL INC | JOY | 14.5 | 55.86 |
| 2 | MATTEL INC | MAT | 14.4 | 31.13 |
| 7 | FRANKLIN RESOURCES INC | BEN | 14.4 | 106.79 |

## Return on Capital

## Top 50 S\&P 500 Companies By ROC

Return on Capital: The sum of net income, interest expense and minority interest, as a percent of average total invested capital which is inclusive of long-term debt, preferred stock, common equity, and minority interest.


Sector Concentration
Other


| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $-7.87 \%$ |
| Last 3 M onths | $-6.11 \%$ |
| Last 6 M onths | $5.96 \%$ |
| Last 12 M onths | $-1.39 \%$ |
| 2012 YTD | $5.14 \%$ |

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end April 1997. The unshaded portion
represents actual performance since May 1997. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for May

| Mo. In |  |  | Ret on | Price | Mo <br> In |  |  |  | Pric |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn. | Company | Ticker | Cap | 05/31/2012 | Scrn. | Company | Ticker | Cap | 05/31/201 |
| 7 | DUN \& BRADSTREET CORP | DNB | 132\% | 67.57 | 51 | YUM BRANDS INC | YUM | 34\% | 70.3 |
| 48 | LORILLARD INC | LO | 110\% | 123.60 | 4 | FORD MOTOR CO | F | 32\% | 10.5 |
| 11 | ACCENTURE PLC | ACN | 65\% | 57.10 | 77 | MICROSOFT CORP | MSFT | 32\% | 29.1 |
| 51 | PHILIP MORRIS INTERNATIONAL | PM | 62\% | 84.51 | 6 | BLOCK H \& R INC | HRB | 31\% | 15.2 |
| 23 | MOODY'S CORP | MCO | 59\% | 36.59 | 6 | DOLLAR TREE INC | DLTR | 31\% | 103.1 |
| 93 | COACH INC | COH | 53\% | 67.45 | 99 | MCGRAW-HILL COMPANIES | M HP | 31\% | 43.3 |
| 44 | AUTOZONE INC | AZO | 49\% | 380.26 | 5 | CF INDUSTRIES HOLDINGS INC | CF | 30\% | 170.9 |
| 10 | APOLLO GROUP INC -CLA | APOL | 47\% | 31.82 | 10 | HERSHEY CO | HSY | 30\% | 66.8 |
| 32 | APPLE INC | AAPL | 47\% | 577.73 | 111 | ROCKWELL COLLINS INC | COL | 30\% | 50.3 |
| 27 | M EAD JOHNSON NUTRITION CO | MJN | 43\% | 80.74 | 64 | VARIAN MEDICAL SYSTEMS INC | VAR | 29\% | 58.6 |
| 31 | PRICELINE.COM INC | PCLN | 43\% | 625.49 | 2 | FOSSIL INC | FOSL | 28\% | 73.1 |
| 30 | ROSS STORES INC | ROST | 42\% | 63.23 | 6 | LIMITED BRANDS INC | LTD | 28\% | 44.3 |
| 47 | TJX COMPANIES INC | TJX | 42\% | 42.46 | 6 | TRIPADVISOR INC | TRIP | 28\% | 42.8 |
| 139 | COLGATE-PALMOLIVE CO | CL | 41\% | 98.30 | 2 | ALTRIA GROUP INC | MO | 27\% | 32.1 |
| 4 | CLOROX COIDE | CLX | 37\% | 68.80 | 10 | DIRECTV | DTV | 27\% | 44.4 |
| 48 | INTL BUSINESS MACHINES CORP | IBM | 37\% | 192.90 | 11 | ROCKWELL AUTOMATION | ROK | 27\% | 72.5 |
| 47 | LINEAR TECHNOLOGY CORP | LLTC | 37\% | 29.02 | 5 | FASTENAL CO | FAST | 26\% | 44.2 |
| 43 | LOCKHEED MARTIN CORP | LM T | 37\% | 82.80 | 28 | FREEPORT-MCMORAN COP\&GOLD | FCX | 26\% | 32.0 |
| 68 | WESTERN UNION CO | WU | 37\% | 16.40 | New | BED BATH \& BEYOND INC | BBBY | 25\% | 72.2 |
| 64 | C H ROBINSON WORLDWIDE INC | CHRW | 35\% | 58.26 | New | FAMILY DOLLAR STORES | FDO | 25\% | 67.7 |
| 35 | MASTERCARD INC | MA | 35\% | 406.51 | New | STARBUCKS CORP | SBUX | 25\% | 54.8 |
| 58 | PAYCHEX INC | PAYX | 35\% | 29.97 | New | WATERS CORP | WAT | 25\% | 79.7 |
| 4 | VERISIGN INC | VRSN | 35\% | 38.23 | New | BRISTOL-M YERS SQUIBB CO | BM Y | 24\% | 33.3 |
| 20 | BOEING CO | BA | 34\% | 69.61 | New | GRAINGER (W W) INC | GWW | 24\% | 193.6 |
| 14 | CUMMINS INC | CMI | 34\% | 96.95 | 16 | JOY GLOBAL INC | JOY | 24\% | 55.8 |

## Beta

## Top 50 S\&P 500 Companies By BETA

Beta: A measure of non-diversifiable risk. It is calculated using a regression incorporating 60 months of price performance versus that of the S\&P 500.



Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance


Absolute Returns

| Last 1 M onth | $-12.77 \%$ |
| :--- | ---: |
| Last 3 M onths | $-13.69 \%$ |
| Last 6 M onths | $2.45 \%$ |
| Last 12 M onths | $-22.16 \%$ |
| 2012 YTD | $3.57 \%$ |

Screen for May

Mo.

| In |  |  |  | Price | In |  |  |  | Price |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn. | Company | Ticker | Beta | 05/31/2012 | Scrn. | Company | Ticker | Beta | 05/31/2012 |
| 29 | AMERICAN INTERNATIONAL GROUI |  | 2.62 | 29.18 | 39 | HARLEY-DAVIDSON INC | HOG | 1.79 | 48.18 |
| 43 | GENWORTH FINANCIAL INC | GNW | 2.38 | 5.24 | 24 | E TRADE FINANCIAL CORP | ETFC | 1.78 | 8.49 |
| 44 | HARTFORD FINANCIAL SERVICES | HIG | 2.33 | 16.82 | 40 | HARMAN INTERNATIONAL INDS | HAR | 1.78 | 39.22 |
| 43 | WYNDHAM WORLDWIDE CORP | WYN | 2.29 | 49.80 | 39 | MASCO CORP | MAS | 1.78 | 12.67 |
| 43 | PRINCIPAL FINANCIAL GRP INC | PFG | 2.17 | 24.56 | 39 | FIFTH THIRD BANCORP | FITB | 1.76 | 13.35 |
| 56 | GOODYEAR TIRE \& RUBBER CO | GT | 2.09 | 10.45 | 49 | AUTODESK INC | ADSK | 1.75 | 32.02 |
| 44 | LINCOLN NATIONAL CORP | LNC | 2.08 | 20.67 | 38 | OWENS-ILLINOIS INC | OI | 1.74 | 19.54 |
| 48 | TEXTRON INC | TXT | 2.08 | 23.63 | 30 | JABIL CIRCUIT INC | JBL | 1.73 | 19.13 |
| 13 | CITIGROUP INC | C | 2.06 | 26.51 | 28 | STARWOOD HOTELS\&RESORTS WF | HOT | 1.72 | 52.85 |
| 8 | CBRE GROUP INC | CBG | 2.02 | 16.45 | 44 | ALCOA INC | AA | 1.70 | 8.55 |
| 30 | CLIFFS NATURAL RESOURCES IN | CLF | 1.96 | 47.78 | 41 | APARTMENT INVST \& MGMT CO | AIV | 1.70 | 27.07 |
| 38 | GANNETT CO | GCI | 1.96 | 13.06 | 12 | PROLOGIS INC | PLD | 1.67 | 31.98 |
| 42 | JDS UNIPHASE CORP | JDSU | 1.96 | 10.15 | 28 | CUMMINS INC | CMI | 1.65 | 96.95 |
| 77 | UNITED STATES STEEL CORP | X | 1.96 | 20.30 | 40 | AMERIPRISE FINANCIAL INC | AMP | 1.64 | 47.92 |
| 43 | WYNN RESORTS LTD | WYNN | 1.95 | 103.04 | 19 | EASTMAN CHEMICAL CO | EMN | 1.64 | 46.56 |
| 22 | XL GROUP PLC | XL | 1.95 | 20.42 | 10 | METLIFE INC | MET | 1.64 | 29.21 |
| 44 | PRUDENTIAL FINANCIAL INC | PRU | 1.91 | 46.45 | 4 | SEARS HOLDINGS CORP | SHLD | 1.64 | 49.40 |
| 38 | FORD MOTOR CO | F | 1.90 | 10.56 | 8 | TE CONNECTIVITY LTD | TEL | 1.64 | 31.42 |
| 38 | DOW CHEMICAL | DOW | 1.89 | 31.06 | 9 | FREEPORT-MCMORAN COP\&GOLD | FCX | 1.63 | 32.04 |
| 38 | HOST HOTELS \& RESORTS INC | HST | 1.88 | 15.26 | 8 | NABORS INDUSTRIES LTD | NBR | 1.61 | 13.55 |
| 39 | BANK OF AMERICA CORP | BAC | 1.87 | 7.35 | New | FOSSIL INC | FOSL | 1.60 | 73.16 |
| 122 | ADVANCED MICRO DEVICES | AMD | 1.84 | 6.08 | 8 | PIONEER NATURAL RESOURCES C | CPXD | 1.60 | 96.70 |
| 37 | TENET HEALTHCARE CORP | THC | 1.82 | 4.71 | 3 | TERADYNE INC | TER | 1.60 | 14.45 |
| 35 | CBS CORP | CBS | 1.81 | 31.92 | 34 | DONNELLEY (R R ) \& SONS CO | RRD | 1.59 | 10.76 |
| 38 | INTL PAPER CO | IP | 1.81 | 29.20 | 6 | WHIRLPOOL CORP | WHR | 1.59 | 61.88 |

## Variability of Earnings

Top S\&P 500 Companies By HIGH VARIABILITY OF EPS
Variability of EPS: The degree of variability in quarterly EPS over the past 5 years. Stocks are ranked from 10 to 1 with 10 being the most variable.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded
portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance



Screen for May

| In |  |  | EPS Price |  |
| :---: | :---: | :---: | :---: | :---: |
| Scrn | Company | Ticker | Risk | 05/31/2012 |
| 51 | AES CORP | AES | 10 | 12.09 |
| 44 | ALLEGHENY TECHNOLOGIES INC | ATI | 10 | 32.12 |
| 6 | BORGWARNER INC | BWA | 10 | 71.75 |
| 44 | BOSTON PROPERTIES INC | BXP | 10 | 102.93 |
| 38 | BROADCOM CORP | BRCM | 10 | 32.35 |
| 41 | CAPITAL ONE FINANCIAL CORP | COF | 10 | 51.37 |
| 21 | DOW CHEMICAL | DOW | 10 | 31.06 |
| 26 | HARLEY-DAVIDSON INC | HOG | 10 | 48.18 |
| 8 | INTL PAPER CO | IP | 10 | 29.20 |
| 41 | JPMORGAN CHASE \& CO | JPM | 10 | 33.15 |
| 80 | KROGER CO | KR | 10 | 22.01 |
| 29 | LIFE TECHNOLOGIES CORP | LIFE | 10 | 40.91 |
| 25 | MARSH \& MCLENNAN COS | M M C | 10 | 31.98 |
| 56 | MEADWESTVACO CORP | M WV | 10 | 27.50 |
| 35 | METLIFEINC | MET | 10 | 29.21 |
| 48 | MORGAN STANLEY | M S | 10 | 13.36 |
| 35 | NABORS INDUSTRIES LTD | NBR | 10 | 13.55 |
| 47 | NEWMONT MINING CORP | NEM | 10 | 47.16 |
| 14 | PACCAR INC | PCAR | 10 | 37.57 |
| 4 | PERKINELMER INC | PKI | 10 | 26.60 |
| 44 | PROGRESSIVE CORP-OHIO | PGR | 10 | 21.73 |
| 56 | PUBLIC STORAGE | PSA | 10 | 133.47 |
| 4 | RANGERESOURCES CORP | RRC | 10 | 57.44 |
| 45 | SALESFORCE.COM INC | CRM | 10 | 138.62 |
| 38 | SOUTHWESTERN ENERGY CO | SWN | 10 | 28.03 |
| 26 | STARWOOD HOTELS\&RESORTS W | HOT | 10 | 52.85 |
| 53 | UNITED PARCEL SERVICE INC | UPS | 10 | 74.94 |
| 37 | WASHINGTON POST -CLB | WPO | 10 | 348.82 |
| 16 | WYNN RESORTS LTD | WYNN | 10 | 103.04 |
| 34 | YAHOO INC | Y HOO | 10 | 15.24 |
| 44 | StATE COR | ALL | 9 | 33.94 |

Mo.

| In |  | EPS | Price |
| :--- | ---: | ---: | ---: |
| Scrn | Company | Ticker | Risk |

## Estimate Dispersion

## Top S\&P 500 Companies By EPS ESTIMATE DISPERSION

EPS Estimate Dispersion: The coefficient of variation among I/B/E/S FY2 ESTIMATES. Presented as a decile rank



Source: BofA Merrill Lynch US Quantitative Strategy
The performance chart represents actual returns since July 1989. There is no back tested performance.
Screen for May

| Mo. |  |  |  |  | Mo. |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  |  | EPS Est. | Price | In |  |  | EPS Est. | Price |
| Scrn | Company | Ticker | Dispers. | 05/31/2012 | Scrn. | Company | Ticker | Dispers. | 05/31/2012 |
| 10 | ALPHA NATURAL RESOURCES INC | ANR | 10 | 10.48 | 2 | CROWN CASTLE INTL CORP | CCl | 9 | 54.60 |
| 11 | AMAZON.COM INC | AMZN | 10 | 212.91 | 72 | D R HORTON INC | DHI | 9 | 16.60 |
| 6 | CABOT OIL \& GAS CORP | COG | 10 | 32.54 | 2 | DENBURY RESOURCES INC | DNR | 9 | 15.12 |
| 34 | EOG RESOURCES INC | EOG | 10 | 99.30 | 2 | DEVON ENERGY CORP | DVN | 9 | 59.52 |
| 24 | FRONTIER COMMUNICATIONS COFF | FTR | 10 | 3.74 | New | E TRADE FINANCIAL CORP | ETFC | 9 | 8.49 |
| 2 | METROPCS COMMUNICATIONS IN | PCS | 10 | 6.40 | 4 | FIRST SOLAR INC | FSLR | 9 | 12.56 |
| 158 | MICRON TECHNOLOGY INC | MU | 10 | 5.84 | New | GENWORTH FINANCIAL INC | GNW | 9 | 5.24 |
| 8 | NETFLIX INC | NFLX | 10 | 63.44 | 14 | HESS CORP | HES | 9 | 43.70 |
| 28 | NRG ENERGY INC | NRG | 10 | 15.32 | 69 | LENNAR CORP | LEN | 9 | 27.29 |
| 39 | RANGE RESOURCES CORP | RRC | 10 | 57.44 | 2 | MARATHON OIL CORP | MRO | 9 | 24.91 |
| 2 | SANDISK CORP | SNDK | 10 | 32.70 | 7 | MARATHON PETROLEUM CORP | MPC | 9 | 36.07 |
| 53 | SPRINT NEXTEL CORP | S | 10 | 2.57 | 14 | MASCO CORP | MAS | 9 | 12.67 |
| 16 | SUNOCOINC | SUN | 10 | 46.45 | 5 | MURPHY OIL CORP | MUR | 9 | 46.62 |
| 37 | VULCAN MATERIALS CO | VMC | 10 | 34.65 | 13 | NEWFIELD EXPLORATION CO | NFX | 9 | 29.96 |
| 5 | WPX ENERGY INC | WPX | 10 | 14.67 | 4 | NOBLE ENERGY INC | NBL | 9 | 84.46 |
| 89 | ALCOA INC | AA | 9 | 8.55 | 15 | NOVELLUS SYSTEMS INC | NVLS | 9 | 41.83 |
| 76 | ANADARKO PETROLEUM CORP | APC | 9 | 61.00 | New | OCCIDENTAL PETROLEUM CORP | OXY | 9 | 79.27 |
| 19 | APPLIED MATERIALS INC | AMAT | 9 | 10.33 | New | PENNEY (J C) CO | JCP | 9 | 26.23 |
| New | BANK OF AMERICA CORP | BAC | 9 | 7.35 | 4 | PIONEER NATURAL RESOURCES | CPXD | 9 | 96.70 |
| 6 | CABLEVISION SYS CORP -CLA | CVC | 9 | 11.44 | 75 | PULTEGROUP INC | PHM | 9 | 9.36 |
| 5 | CHESAPEAKE ENERGY CORP | CHK | 9 | 16.90 | 4 | QEP RESOURCES INC | QEP | 9 | 26.32 |
| 4 | CINCINNATI FINANCIAL CORP | CINF | 9 | 36.08 | 49 | SEARS HOLDINGS CORP | SHLD | 9 | 49.40 |
| New | CLIFFS NATURAL RESOURCES INC | CLF | 9 | 47.78 | New | SOUTHWESTERN ENERGY CO | SWN | 9 | 28.03 |
| 2 | COMPUTER SCIENCES CORP | CSC | 9 | 26.64 | 11 | TESORO CORP | TSO | 9 | 22.12 |
| 2 | CONOCOPHILLIPS | COP | 9 | 52.16 | 44 | UNITED STATES STEEL CORP | X | 9 | 20.30 |
| 5 | CONSOL ENERGY INC | CNX | 9 | 28.08 | New | YAHOO INC | YHOO | 9 | 15.24 |

## Price

## Top 50 S\&P 500 Companies By LOW PRICE

Low Price: Absolute price level of the stock at month-end.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded
portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its

introduction and is not intended to be indicative of future performance
Screen for May

Mo.

Scrn. Company

Price
Ticker 05/31/2012

| 58 | SPRINT NEXTEL CORP | S | 2.57 |
| :---: | :---: | :---: | :---: |
| 38 | FRONTIER COMMUNICATIONS COFFTR |  | 3.74 |
| 101 | TENET HEALTHCARE CORP | THC | 4.71 |
| 22 | GENWORTH FINANCIAL INC | GNW | 5.24 |
| 35 | BOSTON SCIENTIFIC CORP | BSX | 5.74 |
| 95 | MICRON TECHNOLOGY INC | MU | 5.84 |
| 66 | ADVANCED MICRO DEVICES | AMD | 6.08 |
| 21 | HUDSON CITY BANCORP INC | HCBK | 6.20 |
| 42 | REGIONS FINANCIAL CORP | RF | 6.29 |
| 10 | METROPCS COMMUNICATIONS INCPCS |  | 6.40 |
| 42 | HUNTINGTON BANCSHARES | HBAN | 6.54 |
| 122 | LSICORP | LSI | 6.65 |
| 46 | XEROX CORP | XRX | 7.22 |
| 20 | BANK OF AMERICA CORP | BAC | 7.35 |
| 38 | KEYCORP | KEY | 7.50 |
| 28 | FIRST HORIZON NATIONAL CORP | FHN | 8.48 |
| 16 | E TRADE FINANCIAL CORP | ETFC | 8.49 |
| 14 | ALCOA INC | AA | 8.55 |
| 19 | SOUTHWEST AIRLINES | LUV | 9.03 |
| 33 | PULTEGROUP INC | PHM | 9.36 |
| 38 | WINDSTREAM CORP | WIN | 9.36 |
| 12 | JDS UNIPHASE CORP | JDSU | 10.15 |
| 29 | APPLIED MATERIALS INC | AMAT | 10.33 |
| 97 | INTERPUBLIC GROUP OF COS | IPG | 10.39 |
| 10 | GOODYEAR TIRE \& RUBBER CO | G T | 10.45 |

Mo.
In
Scrn. Company

| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $-9.30 \%$ |
| Last 3 M onths | $-11.10 \%$ |
| Last 6 M onths | $2.25 \%$ |
| Last 12 M onths | $-22.70 \%$ |
| 2012 YTD | $0.98 \%$ |


| 3 | ALPHANATURALRESOURCES INC ANR | 10.48 |  |
| :--- | :--- | :--- | :--- |
| 17 | FORD MOTOR CO | F | 10.56 |
| 7 | DONNELLEY (RR) \& SONS CO | RRD | 10.76 |
| 9 | SAIC INC | SAI | 11.11 |
| 8 | CABLEVISION SYS CORP -CLA | CVC | 11.44 |
| 6 | TITANIUM METALS CORP | TIE | 11.48 |
| 20 | PEOPLE'S UNITED FINL INC | PBCT | 11.63 |
| 30 | AES CORP | AES | 12.09 |
| 3 | DELL INC | DELL | 12.33 |
| 6 | NVIDIA CORP | NVDA | 12.43 |
| 12 | SCHWAB (CHARLES) CORP | SCHW | 12.46 |
| New | FIRST SOLAR INC | FSLR | 12.56 |
| 25 | MASCO CORP | MAS | 12.67 |
| 9 | CORNING INC | GLW | 12.99 |
| 15 | GANNETT CO | GCI | 13.06 |
| 8 | STAPLES INC | SPLS | 13.14 |
| 23 | FIFTH THIRD BANCORP | FITB | 13.35 |
| New | MORGAN STANLEY | MS | 13.36 |
| New | NABORS INDUSTRIES LTD | NBR | 13.55 |
| 4 | ELECTRONIC ARTS INC | EA | 13.62 |
| New | PITNEY BOWES INC | PBI | 13.64 |
| 11 | SLM CORP | SLM | 13.97 |
| 2 | INTL GAME TECHNOLOGY | IGT | 14.30 |
| New | TERADYNE INC | TER | 14.45 |
| New | WPXENERGY INC | WPX | 14.67 |

## Neglect-Institutional Ownership

## Top 50 S\&P 500 Companies By Low Institutional holdings

Neglect: Those companies with the lowest proportions of float-adjusted shares held by institutional owners are considered more neglected.


[^16]The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded
portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its
introduction and is not intended to be indicative of future performance


| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $-4.65 \%$ |
| Last 3 M onths | $-3.11 \%$ |
| Last 6 M onths | $2.92 \%$ |
| Last 12 Months | $-4.02 \%$ |
| 2012 YTD | $1.70 \%$ |

Screen for May

| Mo. In Scrn. | Company | Ticker | \% Held By Inst | $\begin{aligned} & \text { Price } \\ & 1 / 2012 \end{aligned}$ | Scrn. | Company | Ticker | \% Held By Inst | 051: |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 135 | CONSOLIDATED EDISON INC | ED | 43.2\% | 60.36 | 34 | INTL BUSINESS MACHINES CORP | IBM | 60.4\% |  |
| 190 | SOUTHERN CO | So | 44.5\% | 45.91 | 24 | ALTRIA GROUP INC | MO | 60.5\% |  |
| 24 | MOLEX INC | MOLX | 46.3\% | 23.07 | 58 | DTE ENERGY CO | DTE | 60.5\% |  |
| 13 | BROWN-FORMAN -CL B | BF.B | 48.9\% | 87.18 | 26 | WAL-M ART STORES INC | WMT | 61.2\% |  |
| 87 | EXXON MOBILCORP | XOM | 49.6\% | 78.63 | 28 | BERKSHIRE HATHAWAY | BRK.B | 61.5\% |  |
| 71 | DUKE ENERGY CORP | DUK | 50.7\% | 21.98 | 47 | FRONTIER COMMUNICATIONS CORP | FTR | 61.8\% |  |
| 29 | WINDSTREAM CORP | WIN | 53.5\% | 9.36 | New | EXELON CORP | EXC | 62.1\% |  |
| 3 | UNITED PARCEL SERVICE INC | UPS | 54.0\% | 74.94 | 6 | AGL RESOURCES INC | GAS | 62.1\% |  |
| 19 | BANK OF AMERICA CORP | BAC | 54.2\% | 7.35 | 50 | AMEREN CORP | AEE | 62.6\% |  |
| 55 | VERIZON COMMUNICATIONS INC | VZ | 54.8\% | 41.64 | 30 | SAIC INC | SAI | 63.0\% |  |
| 87 | GENERAL ELECTRIC CO | GE | 54.8\% | 19.09 | 34 | PUBLIC SERVICE ENTRP GRP INC | PEG | 63.2\% |  |
| 18 | FORD MOTOR CO | F | 54.9\% | 10.56 | 7 | CINCINNATI FINANCIAL CORP | CINF | 63.2\% |  |
| 64 | AT\&TINC | T | 56.1\% | 34.17 | New | AMERICAN INTERNATIONAL GROUP | AIG | 63.3\% |  |
| 64 | INTEGRYS ENERGY GROUPINC | TEG | 56.2\% | 54.10 | 4 | AMERICAN ELECTRIC POWER CO | AEP | 63.4\% |  |
| 174 | BB\&T CORP | BBT | 56.4\% | 30.22 | 19 | INTEL CORP | INTC | 63.4\% |  |
| 34 | PACCAR INC | PCAR | 57.4\% | 37.57 | 15 | XCEL ENERGY INC | XEL | 63.8\% |  |
| 55 | DOMINION RESOURCES INC | D | 57.9\% | 52.06 | 12 | COCA-COLA CO | KO | 64.0\% |  |
| 41 | SCANA CORP | SCG | 57.9\% | 46.95 | 52 | CITIGROUPINC | C | 64.0\% |  |
| 71 | PROCTER \& GAMBLE CO | PG | 57.9\% | 62.29 | 21 | HUDSON CITY BANCORP INC | HCBK | 64.2\% |  |
| 16 | TITANIUM METALS CORP | TIE | 58.3\% | 11.48 | 39 | HORMEL FOODS CORP | HRL | 64.2\% |  |
| New | DISCOVERY COMMUNICATIONS INC | DISCA | 58.3\% | 50.10 | 119 | PRUDENTIAL FINANCIAL INC | PRU | 64.5\% |  |
| 128 | TECO ENERGY INC | TE | 58.7\% | 17.40 | New | PRINCIPAL FINANCIAL GRP INC | PFG | 65.0\% |  |
| 55 | PEPCO HOLDINGS INC | POM | 58.9\% | 19.06 | 10 | DU PONT (EI) DE NEMOURS | DD | 65.1\% |  |
| 10 | ALCOA INC | AA | 59.0\% | 8.55 | New | CHEVRON CORP | CVX | 65.1\% |  |
| 68 | PROGRESS ENERGY INC | PGN | 60.1\% | 54.82 | New | AFLAC INC | AFL | 65.2\% |  |

## Neglect-Analyst Coverage

Top 50 S\&P 500 Companies By Low Analyst Coverage
Neglect: Those companies with the lowest number of analysts submitting ratings to FirstCall.



Source: BofA Merrill Lynch US Quantitative Strategy
The performance chart represents actual returns since July 1989. There is no back tested performance.
Screen for May

| Mo. <br> In |  | No. of Analyst <br> Price |  |  | Mo. <br> In |  | $\begin{aligned} \text { No. of } & \\ \text { Analyst } & \text { Price } \end{aligned}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn. | Company |  |  |  | Scrn. | Company | Ticker | Coverage | 05/31/2012 |
| 3 | LEUCADIA NATIONAL CORP | LUK | 1 | 20.32 | 5 | WPX ENERGY INC | WPX | 8 | 14.67 |
| 54 | WASHINGTON POST -CL B | WPO | 1 | 348.82 | 6 | AGL RESOURCES INC | GAS | 9 | 37.48 |
| 53 | HARMAN INTERNATIONAL INDS | HAR | 4 | 39.22 | 18 | DUN \& BRADSTREET CORP | DNB | 9 | 67.57 |
| 116 | LOEWS CORP | L | 4 | 38.89 | 34 | FMC CORP | FMC | 9 | 50.97 |
| 99 | PITNEY BOWES INC | PBI | 5 | 13.64 | 9 | MOLSON COORS BREWING CO | TAP | 9 | 38.45 |
| 116 | SNAP-ON INC | SNA | 5 | 60.51 | 8 | BEAM INC | BEAM | 10 | 60.56 |
| 56 | TITANIUM METALS CORP | TIE | 5 | 11.48 | 5 | EASTMAN CHEMICAL CO | EMN | 10 | 46.56 |
| 88 | WHIRLPOOL CORP | WHR | 5 | 61.88 | 6 | FASTENAL CO | FAST | 10 | 44.23 |
| 35 | AVERY DENNISON CORP | AVY | 6 | 29.11 | 18 | GOODYEAR TIRE \& RUBBER CO | GT | 10 | 10.45 |
| 8 | CBRE GROUP INC | CBG | 6 | 16.45 | 2 | SUNOCOINC | SUN | 10 | 46.45 |
| 116 | DONNELLEY (R R ) \& SONS CO | RRD | 6 | 10.76 | 13 | ASSURANT INC | AIZ | 11 | 33.38 |
| 78 | LEGGETT \& PLATT INC | LEG | 6 | 20.79 | 16 | BROWN-FORMAN -CL B | BF.B | 11 | 87.18 |
| 52 | MOODY'S CORP | MCO | 6 | 36.59 | 8 | GENUINE PARTS CO | GPC | 11 | 63.00 |
| 40 | SLM CORP | SLM | 6 | 13.97 | 2 | HORMEL FOODS CORP | HRL | 11 | 29.91 |
| 85 | AES CORP | AES | 7 | 12.09 | New | KINDER MORGAN INC | KMI | 11 | 34.19 |
| 87 | SEARS HOLDINGS CORP | SHLD | 7 | 49.40 | 10 | NISOURCEINC | NI | 11 | 25.09 |
| 32 | BLOCK H\&R INC | HRB | 8 | 15.27 | 25 | ONEOK INC | OKE | 11 | 82.99 |
| 57 | CINCINNATI FINANCIAL CORP | CINF | 8 | 36.08 | 15 | PALL CORP | PLL | 11 | 55.66 |
| 64 | INTEGRYS ENERGY GROUP INC | TEG | 8 | 54.10 | 2 | SCANA CORP | SCG | 11 | 46.95 |
| 18 | MCGRAW-HILL COMPANIES | M HP | 8 | 43.38 | New | SEMPRA ENERGY | SRE | 11 | 65.01 |
|  |  |  |  |  | New | XEROX CORP | XRX | 11 | 7.22 |

## Size

## Top 50 S\&P 500 Companies By SMALL SIZE

Firm Size: Month-end market value.


868788899091929394959697989900010203040506070809101112


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

## Screen for May

| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  |  | Market | Price |
| Scrn. Company |  | Value | 05/31/2012 |  |
|  |  |  |  |  |
| 8 | FIRST SOLAR INC | FSLR | 741 | 12.56 |
| 21 | TITANIUM METALS CORP | TIE | 941 | 11.48 |
| 21 | AUTONATION INC | AN | 1513 | 36.02 |
| 22 | DEVRY INC | DV | 1640 | 27.33 |
| 24 | WASHINGTON POST -CL B | WPO | 1744 | 348.82 |
| 20 | LEXMARK INTL INC -CL A | LXK | 1776 | 25.01 |
| 36 | FEDERATED INVESTORS INC | FII | 1848 | 20.09 |
| 4 | SEARS HOLDINGS CORP | SHLD | 1877 | 49.40 |
| 10 | METROPCS COM MUNICATIONS INCPCS | 1882 | 6.40 |  |
| 12 | DONNELLEY (R R) \& SONS CO | RRD | 1915 | 10.76 |
| 72 | TENET HEALTHCARE CORP | THC | 1931 | 4.71 |
| 10 | E TRADE FINANCIAL CORP | ETFC | 2156 | 8.49 |
| 30 | FIRST HORIZON NATIONAL CORP | FHN | 2171 | 8.48 |
| 40 | RYDER SYSTEM INC | R | 2204 | 43.21 |
| 3 | ALPHA NATURAL RESOURCES INC ANR | 2306 | 10.48 |  |
| 12 | JDS UNIPHASE CORP | JDSU | 2335 | 10.15 |
| 37 | BIG LOTS INC | BIG | 2426 | 36.75 |
| 6 | CABLEVISION SYS CORP -CL A | CVC | 2482 | 11.44 |
| 5 | GOODYEAR TIRE \& RUBBER CO | GT | 2560 | 10.45 |
| 2 | GENWORTH FINANCIAL INC | GNW | 2573 | 5.24 |
| 7 | GAMESTOP CORP | GME | 2608 | 19.18 |
| 90 | TERADYNE INC | TER | 2688 | 14.45 |
| 5 | PITNEY BOWES INC | PBI | 2728 | 13.64 |
| 4 | NASDAQ OMX GROUP INC | NDAQ | 2735 | 21.88 |
| 53 | HARMAN INTERNATIONAL INDS | HAR | 2745 | 39.22 |


| Mo. |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| In |  |  | M arket | Price |
| Scrn. | Company | Ticker | Value | 05/31/2012 |
| 28 | DEAN FOODS CO | DF | 2878 | 15.64 |
| New | ABERCROMBIE \& FITCH -CLA | ANF | 2884 | 33.54 |
| 20 | LEGGETT \& PLATT INC | LEG | 2911 | 20.79 |
| 5 | WPX ENERGY INC | WPX | 2919 | 14.67 |
| New | UNITED STATES STEEL CORP | X | 2923 | 20.30 |
| 21 | PATTERSON COMPANIES INC | PDCO | 2925 | 33.24 |
| 3 | ASSURANT INC | AIZ | 2937 | 33.38 |
| 62 | NOVELLUS SYSTEMS INC | NVLS | 2970 | 41.83 |
| 14 | SEALED AIR CORP | SEE | 3005 | 15.65 |
| 39 | PERKINELMER INC | PKI | 3006 | 26.60 |
| 7 | SAIC INC | SAI | 3066 | 11.11 |
| 6 | TESORO CORP | TSO | 3075 | 22.12 |
| 11 | AVERY DENNISON CORP | AVY | 3086 | 29.11 |
| 22 | GANNETT CO | GCI | 3095 | 13.06 |
| 8 | URBAN OUTFITTERS INC | URBN | 3105 | 27.97 |
| 2 | CONSTELLATION BRANDS | STZ | 3125 | 19.29 |
| 8 | BEMIS COINC | BMS | 3127 | 30.36 |
| 21 | PULTEGROUP INC | PHM | 3154 | 9.36 |
| 7 | LEGG MASON INC | LM | 3156 | 25.45 |
| New | MOLEX INC | M OLX | 3161 | 23.07 |
| New | OWENS-ILLINOIS INC | OI | 3205 | 19.54 |
| 2 | DUN \& BRADSTREET CORP | DNB | 3243 | 67.57 |
| 2 | HUDSON CITY BANCORP INC | HCBK | 3274 | 6.20 |
| 2 | FLIR SYSTEMS INC | FLIR | 3285 | 21.33 |
| New | ALLEGHENY TECHNOLOGIES INC | ATI | 3437 | 32.12 |

## Foreign Exposure

## Top 50 S\&P 500 Companies By FOREIGN EXPOSURE

Foreign Exposure: The ratio of foreign sales to total sales.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

## Screen for May

Mo.

| In |  |  | Foreign <br> Scrn. Company | Price |
| :--- | :--- | :--- | ---: | ---: |
|  |  | Ticker | Exposure | 05/31/2012 |
| 13 | COCA-COLA ENTERPRISES INC | CCE | $100.0 \%$ | 27.36 |
| 16 | BROADCOM CORP | BRCM | $98.5 \%$ | 32.35 |
| 39 | MOLSON COORS BREWING CO | TAP | $97.7 \%$ | 38.45 |
| 183 | INTEL CORP | INTC | $94.7 \%$ | 25.84 |
| 127 | QUALCOMM INC | QCOM | $94.0 \%$ | 57.31 |
| 171 | ADVANCED MICRO DEVICES | AMD | $93.1 \%$ | 6.08 |
| 14 | DIAMOND OFFSHRE DRILLING INC | DO | $90.3 \%$ | 58.18 |
| 159 | TEXAS INSTRUMENTS INC | TXN | $89.3 \%$ | 28.48 |
| 43 | JABIL CIRCUIT INC | JBL | $86.0 \%$ | 19.13 |
| 164 | AES CORP | AES | $85.8 \%$ | 12.09 |
| 127 | NVIDIA CORP | NVDA | $85.1 \%$ | 12.43 |
| 27 | SANDISK CORP | SNDK | $84.9 \%$ | 32.70 |
| 98 | TERADYNE INC | TER | $84.5 \%$ | 14.45 |
| 79 | MICRON TECHNOLOGY INC | MU | $84.5 \%$ | 5.84 |
| 35 | WESTERN DIGITAL CORP | WDC | $83.3 \%$ | 31.39 |
| 88 | AFLAC INC | AFL | $82.8 \%$ | 40.08 |
| 123 | ALTERA CORP | ALTR | $82.3 \%$ | 33.41 |
| 124 | ANALOG DEVICES | ADI | $82.2 \%$ | 36.37 |
| 145 | APPLIED MATERIALS INC | AMAT | $81.3 \%$ | 10.33 |
| 76 | HARMAN INTERNATIONAL INDS | HAR | $81.3 \%$ | 39.22 |
| 140 | AVON PRODUCTS | AVP | $81.3 \%$ | 16.55 |
| 175 | KLA-TENCOR CORP | KLAC | $80.8 \%$ | 45.83 |
| 57 | MICROCHIP TECHNOLOGY INC | MCHP | $79.1 \%$ | 31.02 |
| 39 | CORNING INC | GLW | $78.8 \%$ | 12.99 |
| 17 | NOBLE CORP | NE | $77.4 \%$ | 31.27 |

Mo.
In Foreign Price
Scrn. Company
Ticker Exposure 05/31/2012

36 FMC TECHNOLOGIES INC
6 BORGWARNER INC
145 INTL FLAVORS \& FRAGRANCES
51 LSICORP
56 NEWMONT MINING CORP
10 XILINX INC
41 OWENS-ILLINOIS INC
3 AVERY DENNISON CORP
21 LINEAR TECHNOLOGY CORP
NOVELLUS SYSTEMS INC
TE CONNECTIVITY LTD
New ROWAN COMPANIES PLC
157 AUTODESK INC
30 WESTERN UNION CO
87 WATERS CORP
4 FLUOR CORP
30 CATERPILLAR INC
4 YUM BRANDS INC
53 AGILENT TECHNOLOGIES INC
4 MCDONALD'S CORP
4 AMPHENOL CORP
New DOW CHEMICAL
New CITIGROUP INC
New SPECTRA ENERGY CORP
New molex inc

| FTI | $77.3 \%$ | 40.24 |
| :--- | ---: | ---: |
| BWA | $76.5 \%$ | 71.75 |
| IFF | $75.6 \%$ | 56.38 |
| LSI | $74.6 \%$ | 6.65 |
| NEM | $74.0 \%$ | 47.16 |
| XLNX | $73.8 \%$ | 31.97 |
| OI | $73.8 \%$ | 19.54 |
| AVY | $72.9 \%$ | 29.11 |
| LLTC | $72.7 \%$ | 29.02 |
| NVLS | $72.5 \%$ | 41.83 |
| TEL | $72.3 \%$ | 31.42 |
| RDC | $71.9 \%$ | 30.00 |
| ADSK | $71.5 \%$ | 32.02 |
| WU | $71.4 \%$ | 16.40 |
| WAT | $71.3 \%$ | 79.78 |
| FLR | $70.2 \%$ | 46.88 |
| CAT | $70.1 \%$ | 87.62 |
| YUM | $70.0 \%$ | 70.36 |
| A | $69.5 \%$ | 40.66 |
| MCD | $68.4 \%$ | 89.34 |
| APH | $67.8 \%$ | 53.19 |
| DOW | $67.7 \%$ | 31.06 |
| C | $67.6 \%$ | 26.51 |
| SE | $67.2 \%$ | 28.71 |
| MOLX | $66.6 \%$ | 23.07 |

## Valuation Backdrop

S\&P 500 Risk Premium (DDM Expected Return less AAA Corporate Bond Rate)


Source: BofA Merrill Lynch US Quantitative Strategy

Inflation vs. P/E Model (1965 to present)
Note: We exclude deflationary points from trend line calculation. Historically, the relationship between inflation and valuation breaks down during deflationary periods. For example, from 1949 to1950 S\&P 500 valuation was below average, and from 1954 to 1955, valuation was well above average.



S\&P 500 PE-to-Growth Ratio (Trailing PIE Divided by Proj. 5-Yr EPS Growth)


BofAML Universe Sector/Industry Factor Evaluation

|  | \# of <br> Comp | \% Univ <br> BofAML | Valuation Analysis |  |  |  |  |  |  |  | Expectation Analysis |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Impl. <br> Return | Reqd <br> Return | DDM Alpha | Eqty. <br> Duration | BofAML <br> Adj ßeta | P/E <br> Ratio | Pricel <br> Book |  | Earnings (Decile) |  |  |  |  | PR 5yr <br> Growth | EPS Growth |  |
|  |  |  |  |  |  |  |  |  |  |  | Surprise | Risk | Torp | Disp | Est. Rev. |  | 2012E | 2013E |
| Economic Sectors |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Energy | 110.00 | 11.59 | 12.10 | 11.90 | 0.2 | 24.10 | 0.95 | 9.6 | 1.77 | 2.90 | 5.00 | 6.00 | 4.00 | 8.00 | 6.00 | 7.90 | 1 | 18 |
| Materials | 63.00 | 3.75 | 11.10 | 15.20 | -4.1 | 28.50 | 1.22 | 11.1 | 2.24 | 2.50 | 6.00 | 7.00 | 6.00 | 5.00 | 6.00 | 7.60 | 2 | 16 |
| Industrials | 121.00 | 9.91 | 12.10 | 14.20 | -2.1 | 24.80 | 1.14 | 11.7 | 2.48 | 2.30 | 6.00 | 5.00 | 6.00 | 3.00 | 5.00 | 12.80 | 15 | 15 |
| Consumer Discretionary | 193.00 | 12.74 | 12.70 | 14.20 | -1.5 | 27.20 | 1.14 | 10.9 | 2.81 | 1.50 | 5.00 | 4.00 | 6.00 | 4.00 | 5.00 | 17.10 | 9 | 28 |
| Consumer Staples | 55.00 | 10.38 | 11.40 | 9.20 | 2.2 | 27.90 | 0.72 | 15 | 3.09 | 3.00 | 8.00 | 2.00 | 4.00 | 2.00 | 6.00 | 8.00 | 5 | 10 |
| Health Care | 145.00 | 11.99 | 12.50 | 10.40 | 2.1 | 26.80 | 0.82 | 12.5 | 2.56 | 2.10 | 6.00 | 4.00 | 4.00 | 3.00 | 6.00 | 9.50 | 3 | 9 |
| Financials | 241.00 | 13.85 | 12.30 | 15.80 | -3.5 | 24.80 | 1.28 | 10.1 | 1.06 | 2.70 | 5.00 | 7.00 | 6.00 | 5.00 | 5.00 | 10.40 | 16 | 13 |
| Information Technology | 150.00 | 19.15 | 14.40 | 13.40 | 1 | 23.40 | 1.08 | 11.2 | 3.12 | 1.10 | 4.00 | 4.00 | 6.00 | 4.00 | 4.00 | 13.80 | 17 | 13 |
| Telecommunication Services | 18.00 | 3.03 | 10.20 | 9.60 | 0.6 | 20.80 | 0.75 | 18.9 | 2.07 | 4.80 | 4.00 | 7.00 | 4.00 | 4.00 | 5.00 | 6.50 | 13 | 34 |
| Utilities | 48.00 | 3.61 | 9.90 | 8.40 | 1.5 | 26.70 | 0.65 | 15 | 1.53 | 4.20 | 6.00 | 4.00 | 2.00 | 3.00 | 6.00 | 3.80 | -6 | 4 |
| Capitalization Sectors (\$ Million) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0 To 981 | 228.00 | 0.90 | 12.30 | 14.90 | -2.6 | 27.30 | 1.20 | 19.6 | 1.33 | 1.80 | 6.00 | 7.00 | 6.00 | 7.00 | 6.00 | 13.60 | 263 | 69 |
| 982 To 2302 | 229.00 | 2.81 | 12.20 | 14.20 | -2 | 26.50 | 1.14 | 13.6 | 1.56 | 2.10 | 5.00 | 6.00 | 5.00 | 6.00 | 6.00 | 12.70 | 16 | 21 |
| 2305 To 4798 | 229.00 | 5.98 | 11.70 | 14.40 | -2.7 | 27.70 | 1.16 | 13.1 | 1.67 | 1.80 | 5.00 | 6.00 | 6.00 | 5.00 | 5.00 | 11.60 | 17 | 18 |
| 4821 To 12527 | 229.00 | 14.03 | 12.00 | 13.70 | -1.7 | 27.80 | 1.10 | 10.5 | 1.97 | 1.80 | 6.00 | 5.00 | 5.00 | 5.00 | 5.00 | 12.30 | 6 | 25 |
| 12552 To 538444 | 229.00 | 76.28 | 12.60 | 12.30 | 0.3 | 24.90 | 0.99 | 11.5 | 2.18 | 2.40 | 5.00 | 5.00 | 5.00 | 4.00 | 5.00 | 10.70 | 9 | 13 |
| Risk Sectors |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0.29 To 0.73 | 213.00 | 25.17 | 11.70 | 8.20 | 3.5 | 25.60 | 0.63 | 13.1 | 2.56 | 3.30 | 6.00 | 4.00 | 4.00 | 4.00 | 6.00 | 8.00 | 5 | 11 |
| 0.74 To 0.96 | 210.00 | 22.26 | 11.50 | 10.80 | 0.7 | 28.40 | 0.86 | 12.8 | 2.49 | 2.50 | 6.00 | 4.00 | 5.00 | 4.00 | 5.00 | 9.20 | 6 | 11 |
| 0.97 To 1.18 | 219.00 | 26.38 | 13.80 | 13.50 | 0.3 | 23.50 | 1.08 | 11.7 | 2.35 | 1.60 | 5.00 | 4.00 | 6.00 | 5.00 | 5.00 | 12.90 | 12 | 16 |
| 1.19 To 1.43 | 213.00 | 15.86 | 12.50 | 16.00 | -3.5 | 25.10 | 1.30 | 9.3 | 1.59 | 2.00 | 5.00 | 7.00 | 6.00 | 5.00 | 5.00 | 12.50 | 9 | 23 |
| 1.44 To 3.26 | 214.00 | 9.11 | 12.70 | 21.80 | -9.1 | 24.60 | 1.79 | 9.4 | 1.22 | 1.70 | 5.00 | 8.00 | 7.00 | 6.00 | 5.00 | 15.40 | 14 | 17 |
| Uncoded | 75.00 | 1.22 | 12.60 |  |  | 27.10 |  | 10.9 | 2.30 | 1.90 | 4.00 | 3.00 | 7.00 | 7.00 | 5.00 | 14.80 | 34 | 16 |
| DDM Alpha |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Most Undervalued | 154.00 | 23.76 | 14.20 | 10.20 | 4 | 22.30 | 0.81 | 11.2 | 2.84 | 2.10 | 5.00 | 3.00 | 5.00 | 4.00 | 5.00 | 12.50 | 15 | 12 |
| Undervalued | 155.00 | 22.36 | 12.10 | 11.10 | 1 | 24.80 | 0.88 | 12.3 | 2.20 | 2.70 | 5.00 | 5.00 | 5.00 | 3.00 | 5.00 | 10.90 | 8 | 12 |
| Fair Value | 155.00 | 17.68 | 11.90 | 13.50 | -1.6 | 27.70 | 1.08 | 12.3 | 1.98 | 2.10 | 6.00 | 5.00 | 5.00 | 4.00 | 6.00 | 11.80 | 7 | 16 |
| Overvalued | 155.00 | 10.09 | 11.40 | 15.40 | -4 | 27.00 | 1.24 | 11.5 | 1.93 | 1.90 | 6.00 | 5.00 | 5.00 | 5.00 | 5.00 | 11.80 | 5 | 16 |
| Most Overvalued | 155.00 | 8.72 | 11.00 | 19.10 | -8.1 | 29.10 | 1.55 | 10.7 | 1.54 | 1.80 | 5.00 | 7.00 | 6.00 | 4.00 | 4.00 | 10.20 | 21 | 15 |
| Uncoded | 370.00 | 17.40 | 12.60 | 12.70 | -0.1 | 27.10 | 1.01 | 10.7 | 1.78 | 2.70 | 6.00 | 6.00 | 4.00 | 6.00 | 5.00 | 8.10 | 2 | 22 |

Source: BofA Merrill Lynch US Equity and US Quant Strategy

|  | \# of <br> Comp | \% Univ BOFAML | Valuation Analysis |  |  |  |  |  |  |  | Expectation Analysis |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Impl. <br> Return | Reqd <br> Return | DDM <br> Alpha | Eqty. <br> Duration | BofAML <br> Adj ßeta | P/E <br> Ratio | Pricel <br> Book | Yield | Earnings (Decile) |  |  |  |  | PR 5yr <br> Growth | EPS Growth |  |
|  |  |  |  |  |  |  |  |  |  |  | Surprise | Risk | Torp | Disp | Est. Rev. |  | 2012E | 2013E |
| Duration |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10.06 To 21.52 | 154 | 21.40 | 14.80 | 14.00 | 0.8 | 17.50 | 1.13 | 10.0 | 1.84 | 2.60 | 4.00 | 5.00 | 6.00 | 5.00 | 4.00 | 13.10 | 11 | 15 |
| 21.52 To 25.19 | 154 | 18.75 | 12.50 | 12.10 | 0.4 | 23.20 | 0.96 | 10.5 | 2.16 | 2.40 | 5.00 | 5.00 | 5.00 | 4.00 | 5.00 | 10.70 | 7 | 14 |
| 25.23 To 28.10 | 154 | 18.11 | 12.00 | 11.30 | 0.7 | 26.70 | 0.90 | 12.5 | 2.21 | 2.40 | 6.00 | 4.00 | 5.00 | 3.00 | 6.00 | 9.90 | 9 | 11 |
| 28.12 To 32.16 | 154 | 12.04 | 11.10 | 12.70 | -1.6 | 29.90 | 1.01 | 14.1 | 2.63 | 1.80 | 6.00 | 4.00 | 5.00 | 3.00 | 5.00 | 10.30 | 10 | 13 |
| 32.20 To 71.94 | 154 | 11.60 | 10.30 | 13.00 | -2.7 | 37.10 | 1.04 | 15.4 | 2.40 | 1.30 | 6.00 | 5.00 | 5.00 | 4.00 | 5.00 | 10.80 | 19 | 18 |
| Uncoded | 374 | 18.10 |  | 13.10 |  |  | 1.05 | 10.5 | 1.77 | 2.70 | 6.00 | 6.00 | 5.00 | 6.00 | 5.00 | 10.70 | 3 | nm |
| Growth Sectors |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0.00 To 0.00 | 11 | 0.06 |  |  |  |  |  | nm | 0.86 | 7.20 |  |  |  |  |  |  | nm | nm |
| Growth | 350 | 27.04 | 12.60 | 13.20 | -0.6 | 26.00 | 1.05 | 12.8 | 2.25 | 1.70 | 5.00 | 4.00 | 5.00 | 4.00 | 5.00 | 13.50 | 11 | 16 |
| Growth Cyclical | 329 | 24.69 | 13.50 | 15.20 | -1.7 | 24.50 | 1.23 | 11.5 | 1.90 | 1.60 | 5.00 | 5.00 | 6.00 | 5.00 | 4.00 | 13.40 | 15 | 16 |
| Growth Defensive | 143 | 14.17 | 12.30 | 9.90 | 2.4 | 26.60 | 0.78 | 11.0 | 2.39 | 3.00 | 6.00 | 4.00 | 4.00 | 3.00 | 6.00 | 9.60 | 4 | 18 |
| Cyclical | 221 | 15.28 | 11.80 | 14.50 | -2.7 | 25.80 | 1.17 | 10.4 | 1.73 | 2.30 | 6.00 | 6.00 | 6.00 | 5.00 | 5.00 | 10.50 | 9 | 17 |
| EPS Surprise |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Most Optimistic | 193 | 21.72 | 14.10 | 13.60 | 0.5 | 22.00 | 1.09 | 9.9 | 2.03 | 1.70 | 2.00 | 5.00 | 6.00 | 6.00 | 4.00 | 11.70 | 18 | 15 |
| Optimistic | 194 | 18.36 | 11.90 | 12.10 | -0.2 | 25.80 | 0.97 | 12.2 | 2.28 | 2.50 | 4.00 | 6.00 | 5.00 | 4.00 | 5.00 | 11.10 | 12 | 12 |
| Neutral | 194 | 16.48 | 12.40 | 14.00 | -1.6 | 25.40 | 1.13 | 12.3 | 2.01 | 2.30 | 6.00 | 5.00 | 5.00 | 4.00 | 5.00 | 12.40 | 8 | 15 |
| Less Optimistic | 194 | 19.47 | 11.90 | 11.80 | 0.1 | 27.50 | 0.94 | 11.5 | 1.88 | 2.60 | 7.00 | 5.00 | 4.00 | 4.00 | 5.00 | 9.40 | 4 | 12 |
| Not Optimistic | 193 | 18.17 | 11.50 | 11.90 | -0.4 | 27.60 | 0.95 | 13.8 | 2.26 | 2.60 | 10.00 | 4.00 | 5.00 | 3.00 | 6.00 | 9.70 | 3 | 14 |
| Uncoded | 176 | 5.80 | 12.60 | 13.20 | -0.6 | 26.60 | 1.06 | 8.9 | 2.12 | 2.00 |  | 5.00 | 6.00 | 5.00 | 6.00 | 13.90 | 3 | 35 |
| Quality Rank |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| A+ | 40 | 18.55 | 12.00 | 10.00 | 2 | 27.00 | 0.79 | 11.7 | 2.91 | 2.60 | 6.00 | 3.00 | 4.00 | 3.00 | 5.00 | 7.90 | 6 | 11 |
| A | 46 | 6.42 | 12.10 | 10.90 | 1.2 | 26.30 | 0.87 | 12.6 | 2.96 | 2.70 | 7.00 | 4.00 | 5.00 | 2.00 | 5.00 | 10.60 | 9 | 11 |
| A- | 74 | 14.41 | 12.80 | 13.40 | -0.6 | 23.60 | 1.07 | 10.9 | 2.12 | 2.60 | 5.00 | 5.00 | 5.00 | 3.00 | 5.00 | 11.60 | 8 | 12 |
| B+ | 196 | 22.37 | 11.70 | 13.00 | -1.3 | 26.70 | 1.04 | 11.6 | 1.79 | 2.50 | 6.00 | 6.00 | 5.00 | 4.00 | 5.00 | 10.10 | 4 | 13 |
| B | 200 | 17.47 | 14.20 | 13.80 | 0.4 | 21.20 | 1.11 | 11.6 | 1.90 | 1.70 | 4.00 | 5.00 | 6.00 | 5.00 | 5.00 | 10.90 | 14 | 15 |
| B- | 151 | 5.04 | 11.80 | 15.90 | -4.1 | 28.60 | 1.29 | 12.2 | 1.49 | 1.60 | 5.00 | 7.00 | 5.00 | 7.00 | 6.00 | 12.80 | 8 | 23 |
| $C$ \& D | 70 | 1.33 | 11.50 | 18.10 | -6.6 | 31.40 | 1.47 | 19.6 | 1.47 | 0.00 | 4.00 | 8.00 | 7.00 | 8.00 | 5.00 | 17.20 | nm | 37 |
| Not Rated | 367 | 14.40 | 12.20 | 13.00 | -0.8 | 26.50 | 1.05 | 10.4 | 2.11 | 2.10 | 6.00 | 5.00 | 6.00 | 5.00 | 5.00 | 15.30 | 12 | 24 |
| B+ or Better | 356 | 61.75 | 12.10 | 12.00 | 0.1 | 26.00 | 0.95 | 11.6 | 2.22 | 2.60 | 6.00 | 5.00 | 5.00 | 4.00 | 5.00 | 9.80 | 6 | 12 |
| B or Worse | 788 | 38.25 | 13.10 | 14.00 | -0.9 | 24.30 | 1.12 | 11.4 | 1.88 | 1.80 | 5.00 | 5.00 | 6.00 | 6.00 | 5.00 | 13.00 | 14 | 20 |
| BofAML Universe | 1144 | 100.00 | 12.50 | 12.70 | -0.2 | 25.40 | 1.02 | 12.2 | 2.08 | 2.30 |  |  |  |  |  | 10.90 | 9 | 15 |
| S\&P 500 | 500 | 90.60 | 12.50 | 12.50 | 0 | 25.20 | 1.01 | 12.3 | 2.02 | 2.30 |  |  |  |  |  | 10.20 | 8 | 13 |

BofAML Universe Sector/Industry Factor Evaluation (cont'd)

|  | \# of Comp | \% Univ <br> BofAML | Valuation Analysis |  |  |  |  |  |  |  | Expectation Analysis |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  | Earnings (Decile) |  |  |  |  | PR 5yr <br> Growth | EPS Growth |  |
|  |  |  | Return | Return | Alpha | Duration | Adj ßeta | Ratio | Book | Yield | Surprise | Risk | Torp | Disp | Est. Rev. |  | 2012E | 2013E |
| ENERGY | 110 | 11.6 | 12.10 | 11.90 | 0.2 | 24.10 | 0.95 | 9.6 | 1.77 | 2.90 | 5.00 | 6.00 | 4.00 | 8.00 | 6.00 | 7.60 | 1 | 18 |
| ENERGY EQUIP \& SVS | 14 | 1.65 | 12.90 | 16.10 | -3.2 | 25.90 | 1.30 | 11.6 | 1.90 | 1.20 | 7.00 | 5.00 | 8.00 | 6.00 | 8.00 | 15.80 | 16 | 22 |
| OIL \& GAS | 96 | 9.94 | 11.90 | 11.10 | 0.8 | 23.60 | 0.88 | 9.4 | 1.75 | 3.20 | 4.00 | 7.00 | 3.00 | 8.00 | 5.00 | 6.20 | -1 | 17 |
| MATERIALS | 63 | 3.75 | 11.10 | 15.20 | -4.1 | 28.50 | 1.22 | 11.1 | 2.24 | 2.50 | 6.00 | 7.00 | 6.00 | 5.00 | 6.00 | 7.60 | 2 | 16 |
| CHEMICALS | 24 | 2.45 | 11.00 | 14.70 | -3.7 | 28.40 | 1.18 | 11.8 | 3.02 | 2.40 | 5.00 | 7.00 | 6.00 | 4.00 | 5.00 | 8.20 | 11 | 11 |
| CONTAINERS \& PCKG | 11 | 0.29 | 10.60 | 12.90 | -2.3 | 31.50 | 1.04 | 11.1 | 2.06 | 1.70 | 7.00 | 5.00 | 6.00 | 4.00 | 6.00 | 7.00 | 9 | 19 |
| METALS \& MINING | 23 | 0.84 | 11.50 | 16.10 | -4.6 | 27.70 | 1.31 | 9.4 | 1.36 | 3.00 | 7.00 | 7.00 | 6.00 | 8.00 | 8.00 | 6.30 | -13 | 25 |
| PAPER \& FOREST PROD | 5 | 0.17 | 11.70 | 21.70 | -10 | 24.60 | 1.78 | 12.1 | 1.53 | 3.20 | 8.00 | 10.00 | 4.00 | 7.00 | 7.00 | 6.40 | -21 | 33 |
| INDUSTRIALS | 121 | 9.91 | 12.10 | 14.20 | -2.1 | 24.80 | 1.14 | 11.7 | 2.48 | 2.30 | 6.00 | 5.00 | 6.00 | 3.00 | 5.00 | 12.70 | 15 | 15 |
| AEROSPACE \& DEF | 21 | 2.48 | 12.00 | 13.70 | -1.7 | 26.10 | 1.10 | 11.8 | 3.04 | 2.40 | 5.00 | 3.00 | 5.00 | 4.00 | 5.00 | 10.90 | 6 | 11 |
| BLDGS PRODUCTS | 2 | 0.03 |  | 20.80 |  |  | 1.70 | 12.3 | 1.06 | 0.00 |  | 10.00 | 8.00 | 7.00 | 9.00 | 11.40 | 1 | 40 |
| CONSTR. \& ENGR | 8 | 0.16 | 13.10 | 15.00 | -1.9 | 28.60 | 1.21 | 9.7 | 1.35 | 0.80 | 3.00 | 5.00 | 8.00 | 5.00 | 6.00 | 14.70 | 24 | 17 |
| ELECTRICAL EQUIP | 7 | 0.43 | 12.90 | 14.50 | -1.6 | 23.80 | 1.17 | 14 | 3.35 | 2.70 | 7.00 | 4.00 | 5.00 | 3.00 | 6.00 | 13.80 | 13 | 19 |
| IND CONGLOMERATES | 4 | 2.41 | 13.50 | 15.20 | -1.7 | 21.00 | 1.23 | 12.1 | 1.91 | 3.00 | 5.00 | 4.00 | 6.00 | 3.00 | 5.00 | 14.50 | 12 | 15 |
| MACHINERY | 22 | 1.52 | 12.60 | 17.40 | -4.8 | 22.70 | 1.41 | 9.4 | 2.54 | 2.10 | 4.00 | 7.00 | 8.00 | 4.00 | 4.00 | 14.00 | 25 | 14 |
| TRADING COMPANIES | 6 | 0.16 | 12.00 | 13.20 | -1.2 | 32.00 | 1.05 | 14.5 | 2.86 | 1.50 | 5.00 | 3.00 | 7.00 | 3.00 | 4.00 | 14.40 | 27 | 17 |
| COMMERCIAL SVS | 23 | 0.69 | 11.30 | 9.60 | 1.7 | 30.00 | 0.76 | 16.2 | 2.22 | 1.70 | 6.00 | 4.00 | 5.00 | 4.00 | 5.00 | 12.40 | 8 | 15 |
| AIR FREIGHT \& LOGIS | 4 | 0.84 | 11.40 | 11.90 | -0.5 | 27.50 | 0.95 | 14.3 | 4.33 | 2.30 | 7.00 | 9.00 | 6.00 | 3.00 | 6.00 | 11.20 | 13 | 15 |
| AIRLINES | 11 | 0.26 | 9.90 | 11.50 | -1.6 | 35.40 | 0.91 | 6.1 | 1.65 | 0.10 | 8.00 | 9.00 | 10.00 | 9.00 | 7.00 | 7.50 | 110 | 43 |
| MARINE | 1 | 0.02 | 12.60 | 13.50 | -0.9 | 25.60 | 1.08 | 13.1 | 1.97 | 0.00 | 8.00 | 4.00 | 7.00 | 3.00 | 8.00 | 15.00 | 14 | 14 |
| ROAD \& RAIL | 11 | 0.9 | 8.80 | 13.70 | -4.9 | 27.40 | 1.10 | 12.7 | 2.70 | 2.20 | 8.00 | 3.00 | 7.00 | 2.00 | 6.00 | 13.20 | 14 | 14 |
| TRANSPORT INFRA | 1 | 0.01 | 11.20 |  |  | 30.20 |  | 12.5 | 1.78 | 0.00 | 9.00 |  | 5.00 | 5.00 | 9.00 | 12.00 | 19 | 25 |
| CONSUMER DISCR | 193 | 12.7 | 12.70 | 14.20 | -1.5 | 27.20 | 1.14 | 10.9 | 2.81 | 1.50 | 5.00 | 4.00 | 6.00 | 4.00 | 5.00 | 16.80 | 9 | 28 |
| AUTO COMP | 15 | 0.53 | 15.30 | 20.10 | -4.8 | 20.10 | 1.64 | 8 | 2.16 | 1.30 | 4.00 | 9.00 | 7.00 | 6.00 | 5.00 | 18.10 | 15 | 20 |
| AUTOMOBILES | 3 | 0.6 | 14.90 | 15.50 | -0.6 | 17.90 | 1.26 | 5.9 | 1.71 | 1.00 | 4.00 |  | 8.00 | 8.00 | 6.00 | 11.30 | -2 | 39 |
| HOUSEHOLD DURABLES | 13 | 0.29 | 12.00 | 15.90 | -3.9 | 23.60 | 1.28 | 19.8 | 2.20 | 1.70 | 7.00 | 4.00 | 7.00 | 7.00 | 2.00 | 12.10 | 230 | 42 |
| TEXTILES, APPAREL | 15 | 0.85 | 11.30 | 15.20 | -3.9 | 31.70 | 1.23 | 17.5 | 4.23 | 1.20 | 7.00 | 4.00 | 5.00 | 3.00 | 5.00 | 14.40 | 16 | 17 |
| HOTELS, RESTAURANTS \& LEISURE | 35 | 2.42 | 11.10 | 15.70 | -4.6 | 29.10 | 1.27 | 18.9 | 3.69 | 2.00 | 7.00 | 5.00 | 5.00 | 4.00 | 5.00 | 24.00 | 9 | 17 |
| DIV CONSUMER SVS | 17 | 0.15 | 11.20 | 11.90 | -0.7 | 29.20 | 0.95 | 11.2 | 1.69 | 1.00 | 5.00 | 5.00 | 3.00 | 6.00 | 5.00 | 4.90 | -20 | 4 |
| MEDIA | 26 | 3.41 | 14.50 | 14.20 | 0.3 | 23.80 | 1.14 | 6.5 | 2.00 | 1.60 | 5.00 | 4.00 | 7.00 | 4.00 | 4.00 | 16.10 | 8 | 36 |
| DISTRIBUTORS | 2 | 0.12 | 11.70 | 11.10 | 0.6 | 26.50 | 0.88 | 15.9 | 3.29 | 2.00 | 5.00 | 3.00 | 6.00 | 2.00 | 3.00 | 12.70 | 18 | 12 |
| INTERNET \& CATALOG RETAIL | 11 | 1.06 | 10.30 | 13.30 | -3 | 36.60 | 1.07 | 34.4 | 7.67 | 0.00 | 4.00 | 6.00 | 5.00 | 8.00 | 6.00 | 19.30 | 9 | 46 |
| MULTILINE RETAIL | 9 | 0.89 | 12.20 | 11.50 | 0.7 | 28.80 | 0.92 | 13.5 | 2.80 | 1.60 | 7.00 | 4.00 | 6.00 | 3.00 | 5.00 | 12.20 | 8 | 16 |
| SPECIALTY RETAIL | 47 | 2.42 | 12.20 | 12.40 | -0.2 | 27.80 | 0.99 | 14.5 | 3.43 | 1.50 | 5.00 | 4.00 | 6.00 | 3.00 | 3.00 | 14.80 | 16 | 14 |

Source: BofA Meriill Lynch US Equity and US Quant Strategy

|  | \# of <br> Comp | \% Univ <br> BofAML | Valuation Analysis |  |  |  |  |  |  |  | Expectation Analysis |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  | Earnings (Decile) |  |  |  |  | PR 5yr <br> Growth | EPS Growth |  |
|  |  |  | Return | Return | Alpha | Duration | Adj ßeta | Ratio | Book | Yield | Surprise | Risk | Torp | Disp | Est. Rev. |  | 2012E | 2013E |
| CONSUMER STAPLES | 55 | 10.4 | 11.40 | 9.20 | 2.2 | 27.90 | 0.72 | 15 | 3.09 | 3.00 | 8.00 | 2.00 | 4.00 | 2.00 | 6.00 | 8.00 | 5 | 10 |
| FOOD \& STAPLES RETAILING | 12 | 2.13 | 12.00 | 9.20 | 2.8 | 29.90 | 0.72 | 13.8 | 2.47 | 2.00 | 7.00 | 2.00 | 5.00 | 3.00 | 5.00 | 11.50 | 11 | 10 |
| BEVERAGES | 8 | 2.38 | 10.70 | 9.10 | 1.6 | 31.50 | 0.71 | 16.7 | 4.18 | 2.80 | 10.00 | 3.00 | 3.00 | 1.00 | 6.00 | 5.80 | -1 | 9 |
| FOOD PRODUCTS | 20 | 1.73 | 10.80 | 9.00 | 1.8 | 28.10 | 0.70 | 13.8 | 2.06 | 2.60 | 6.00 | 4.00 | 4.00 | 3.00 | 6.00 | 8.50 | 8 | 11 |
| TOBACCO | 4 | 1.85 | 11.60 | 10.10 | 1.5 | 22.20 | 0.79 | 14.9 | 11.03 | 4.20 | 8.00 | 2.00 | 4.00 | 1.00 | 6.00 | 8.30 | 7 | 9 |
| HOUSEHOLD PRODUCTS | 6 | 2.07 | 11.70 | 8.10 | 3.6 | 27.00 | 0.62 | 15.6 | 3.38 | 3.30 | 8.00 | 1.00 | 2.00 | 2.00 | 7.00 | 6.10 | 4 | 9 |
| PERSONAL PRODUCTS | 5 | 0.21 | 11.70 | 15.60 | -3.9 | 26.40 | 1.26 | 16.6 | 5.69 | 2.50 | 8.00 | 5.00 | 5.00 | 5.00 | 5.00 | 10.40 | -13 | 24 |
| HEALTH CARE | 145 | 12 | 12.50 | 10.40 | 2.1 | 26.80 | 0.82 | 12.5 | 2.56 | 2.10 | 6.00 | 4.00 | 4.00 | 3.00 | 6.00 | 9.20 | 3 | 9 |
| HEALTH CARE EQUIP | 24 | 1.66 | 12.50 | 11.50 | 1 | 29.90 | 0.91 | 12.6 | 2.48 | 1.40 | 6.00 | 4.00 | 4.00 | 3.00 | 6.00 | 11.70 | 7 | 11 |
| HEALTH CARE PROV | 51 | 2.38 | 12.70 | 12.10 | 0.6 | 26.20 | 0.97 | 11.3 | 2.00 | 0.80 | 6.00 | 4.00 | 6.00 | 3.00 | 5.00 | 13.70 | 7 | 10 |
| HEALTH CARE TECH | 1 | 0.01 | 11.00 | 11.00 | 0 | 32.70 | 0.87 | 48.5 | 1.57 | 0.00 |  |  | 7.00 | 4.00 | 8.00 | 26.30 | nm | 133 |
| BIOTECH | 29 | 1.76 | 12.30 | 10.10 | 2.2 | 26.30 | 0.80 | 19.7 | 4.72 | 0.50 | 5.00 | 3.00 | 6.00 | 7.00 | 5.00 | 14.60 | 25 | 30 |
| PHARMACEUTICALS | 28 | 5.66 | 12.60 | 9.30 | 3.3 | 26.00 | 0.73 | 11.7 | 2.59 | 3.50 | 7.00 | 5.00 | 3.00 | 3.00 | 6.00 | 4.70 | -3 | 5 |
| LIFE SCIENCES | 12 | 0.53 | 11.40 | 12.80 | -1.4 | 29.50 | 1.02 | 12.5 | 2.08 | 0.50 | 5.00 | 5.00 | 6.00 | 2.00 | 5.00 | 11.60 | 11 | 11 |
| FINANCIALS | 241 | 13.9 | 12.30 | 15.80 | -3.5 | 24.80 | 1.28 | 10.1 | 1.06 | 2.70 | 5.00 | 7.00 | 6.00 | 5.00 | 5.00 | 10.30 | 16 | 13 |
| BANKS | 31 | 2.98 | 14.70 | 14.20 | 0.5 | 20.20 | 1.14 | 10 | 1.14 | 2.50 | 3.00 | 8.00 | 7.00 | 5.00 | 3.00 | 15.10 | 15 | 12 |
| THRIFTS \& MORTGAGE FINANCE | 8 | 0.16 | 11.10 | 9.60 | 1.5 | 22.20 | 0.75 | 11.8 | 0.98 | 4.30 | 6.00 | 8.00 | 6.00 | 6.00 | 7.00 | 10.00 | 326 | 7 |
| DIV FINANCIALS | 10 | 1.89 | 13.20 | 18.00 | -4.8 | 18.70 | 1.46 | 7.8 | 0.63 | 2.30 | 9.00 | 9.00 | 8.00 | 6.00 | 7.00 | 9.10 | -4 | 20 |
| CONSUMER FINANCE | 6 | 0.79 | 11.90 | 18.30 | -6.4 | 28.20 | 1.49 | 9.7 | 1.68 | 1.10 | 3.00 | 8.00 | 4.00 | 5.00 | 2.00 | 9.40 | 0 | 10 |
| CAPITAL MARKETS | 47 | 2 | 12.00 | 16.00 | -4 | 26.20 | 1.29 | 9.7 | 0.97 | 2.40 | 5.00 | 6.00 | 7.00 | 6.00 | 4.00 | 11.40 | 33 | 21 |
| INSURANCE | 40 | 2.5 | 11.60 | 16.40 | -4.8 | 27.50 | 1.33 | 8.2 | 0.82 | 2.30 | 4.00 | 7.00 | 7.00 | 5.00 | 4.00 | 8.90 | 42 | 6 |
| REITS | 96 | 3.45 | 10.30 | 14.90 | -4.6 | 27.60 | 1.21 | 15.5 | 2.10 | 3.90 | 6.00 | 7.00 | 4.00 | 2.00 | 6.00 | 7.10 | 5 | 8 |
| REAL ESTATE MGMT \& DEV | 3 | 0.07 | 16.50 | 21.60 | -5.1 | 19.60 | 1.77 | 13.9 | 2.74 | 0.30 |  | 9.00 |  |  | 6.00 | 23.00 | 16 | 17 |
| INFO TECH | 150 | 19.2 | 14.40 | 13.40 | 1 | 23.40 | 1.08 | 11.2 | 3.12 | 1.10 | 4.00 | 4.00 | 6.00 | 4.00 | 4.00 | 13.70 | 17 | 13 |
| INTERNET SOFTWARE | 17 | 1.88 | 12.80 | 13.60 | -0.8 | 26.20 | 1.09 | 14.4 | 2.81 | 0.00 | 6.00 | 4.00 | 7.00 | 5.00 | 3.00 | 18.30 | 21 | 17 |
| IT SERVICES | 25 | 3.75 | 12.40 | 10.90 | 1.5 | 29.00 | 0.86 | 13.6 | 5.44 | 1.50 | 5.00 | 2.00 | 6.00 | 2.00 | 5.00 | 11.90 | 15 | 12 |
| SOFTWARE | 26 | 3.67 | 12.60 | 13.30 | -0.7 | 25.50 | 1.07 | 11.5 | 3.43 | 1.50 | 4.00 | 3.00 | 5.00 | 3.00 | 4.00 | 13.50 | 10 | 12 |
| COMMUNICA. EQUIP | 16 | 1.67 | 12.00 | 13.90 | -1.9 | 26.30 | 1.11 | 11.9 | 2.14 | 1.60 | 6.00 | 5.00 | 6.00 | 4.00 | 6.00 | 12.60 | 11 | 10 |
| COMPUTERS \& PERIPH | 10 | 5.28 | 19.20 | 14.40 | 4.8 | 11.80 | 1.16 | 9.1 | 3.54 | 0.20 | 2.00 | 3.00 | 8.00 | 6.00 | 3.00 | 15.50 | 36 | 12 |
| ELECTR EQUIP \& INSTR | 20 | 0.58 | 13.80 | 17.40 | -3.6 | 23.20 | 1.41 | 8.9 | 1.31 | 1.40 | 5.00 | 6.00 | 4.00 | 4.00 | 6.00 | 12.70 | -6 | 17 |
| SEMICONDUCTORS | 36 | 2.32 | 12.40 | 14.00 | -1.6 | 34.10 | 1.13 | 11.2 | 2.32 | 2.40 | 6.00 | 8.00 | 4.00 | 7.00 | 4.00 | 10.40 | -2 | 14 |
| TELECOMMUNICATION SERVICES | 18 | 3.03 | 10.20 | 9.60 | 0.6 | 20.80 | 0.75 | 18.9 | 2.07 | 4.80 | 4.00 | 7.00 | 4.00 | 4.00 | 5.00 | 6.40 | 13 | 34 |
| DIVERSIFIED TELECOM SVS | 11 | 2.78 | 10.10 | 9.20 | 0.9 | 20.80 | 0.72 | 14.8 | 2.12 | 5.20 | 4.00 | 7.00 | 5.00 | 3.00 | 4.00 | 7.40 | 16 | 12 |
| WIRELESS TELECOM SVS | 7 | 0.25 | 18.90 | 13.30 | 5.6 | 15.60 | 1.07 | nm | 1.64 | 0.00 | 5.00 | 5.00 | 4.00 | 10.00 | 7.00 | -4.50 | nm | nm |
| UTILITIES | 48 | 3.61 | 9.90 | 8.40 | 1.5 | 26.70 | 0.65 | 15 | 1.53 | 4.20 | 6.00 | 4.00 | 2.00 | 3.00 | 6.00 | 3.80 | -6 | 4 |
| ELECTRIC UTILITIES | 17 | 1.95 | 9.80 | 8.10 | 1.7 | 25.00 | 0.63 | 14.3 | 1.52 | 4.50 | 5.00 | 3.00 | 2.00 | 3.00 | 6.00 | 3.10 | -10 | 3 |
| GAS UTILITIES | 10 | 0.17 | 9.90 | 7.80 | 2.1 | 26.70 | 0.60 | 16.4 | 1.72 | 5.50 | 6.00 | 4.00 | 3.00 | 5.00 | 8.00 | 4.20 | -10 | 28 |
| MULTI-UTILITIES | 15 | 1.28 | 10.20 | 8.20 | 2 | 26.60 | 0.63 | 15.1 | 1.66 | 4.10 | 7.00 | 4.00 | 2.00 | 3.00 | 6.00 | 4.60 | -3 | 3 |
| WATER UTILITIES | 1 | 0.05 | 10.30 | 7.10 | 3.2 | 28.40 | 0.54 | 17.1 | 1.42 | 2.90 | 10.00 |  | 5.00 | 1.00 | 5.00 | 8.10 | 8 | 9 |
| INDEP POWER PROD \& ENERGY TRAD | 5 | 0.17 | 5.70 | 14.20 | -8.5 | 56.90 | 1.15 | 22.8 | 0.94 | 0.00 | 5.00 | 10.00 | 7.00 | 7.00 | 4.00 | 3.60 | 23 | -4 |
| BofAML UNIVERSE | 1144 | 100 | 12.50 | 12.70 | -0.2 | 25.40 | 1.02 | 12.2 | 2.08 | 2.30 |  |  |  |  |  | 10.90 | 9 | 15 |
| S\&P 500 | 500 | 90.6 | 12.50 | 12.50 | 0 | 25.20 | 1.01 | 12.3 | 2.02 | 2.30 |  |  |  |  |  | 10.20 | 8 | 13 |

## Performance Calculation Methodology

For each of the strategies represented in this report, rebalancing and performance calculations are conducted each month, using data and closing prices corresponding to the market's close on the last business day of each month. The performance of each index is computed on the basis of price return. The performance is presented relative to the benchmark which consists of the equal weighted price performance of stocks in the S\&P 500 as of the last business day of each month. For Alpha Surprise model, the performance is also represented as relative to the market capitalization-weighted S\&P 500 benchmark.

The results of quantitative strategies presented here may differ from the S\&P 500 in that they are significantly less diversified, and, as such, their performance is more exposed to specific stock or sector results. Therefore investors following these strategies may experience greater volatility in their returns.

The performance results do not reflect transaction costs, tax withholdings or any investment advisory fees. Had these costs been reflected, the performance would have been lower. The performance results of individuals following the strategies presented here will differ from the performance contained in this report for a variety of reasons, including differences related to incurring transaction costs and/or investment advisory fees, as well as differences in the time and price that securities were acquired and disposed of, and differences in the weighting of such securities. The performance results of individuals following these strategies will also differ based on differences in treatment of dividends received, including the amount received and whether and when such dividends were reinvested.

## Dividend Yield and Dividend Growth Strategies

We also provide total returns for dividend oriented strategies (high dividend yield strategy and high dividend growth strategy). The total return performance calculation assumes that dividends paid on securities in a portfolio are deposited in a cash account on the ex-dividend date, and are not reinvested. The performance is presented relative to the equal weighted total returns index of stocks in the S\&P 500 as of the last business day of each month.

This report includes strategies for informational or descriptive purposes, and inclusion here is not equivalent to a recommendation of the strategy or portfolio.

Past performance should not and cannot be viewed as an indicator of future performance. A complete performance record is available upon request.

## Advances \& Declines

Advances and declines are based on the price returns of each stock for each relevant period. The portfolio rebalancing done each month constitutes the start of a new period for each stock in the portfolio. The performance period for the stock being removed will end when the stock is removed from the portfolio. For the stock being added, the performance period will begin when it is added to the portfolio.

## Definitions

Absolute return: Absolute return is calculated based on monthly returns and reflects simple price appreciation (depreciation) over the stated period. Stocks in each screen are equally weighted. Returns do not reflect dividend or transaction costs.

Dividend Discount Model Alpha: The implied return from the BofAML Quantitative Strategy three-stage dividend discount model less the required return from a Capital Asset Pricing Model. Presented as a decile rank.

Dividend Yield: Indicated dividend divided by month-end price.
Price/Book Value: Month-end price divided by the most recently reported book value per share.

Price/Cash Flow: Month-end price divided by the most recently reported cash flow. Cash flow is defined as earnings post extraordinary items plus depreciation.

Price/Free Cash Flow: Month-end price divided by most recently reported free cash flow. Free Cash flow is defined as earnings post extraordinary items plus depreciation minus capital expenditures.

Price/Sales: Month-end market value divided by most recently reported sales.

EVIEBITDA: Enterprise Value (Equity Market Capitalization + Long Term Debt + Short Term Debt + Preferred Stock + Minority Interest - Cash \& Cash Equivalents) divided by EBITDA (Reported Net Income + Special Items - Minority Interest + Interest Expense + Income Tax Expense + Depreciation and Amortization) - most recently reported.

Relative Strength: The ratio of the 30 -week moving average of price to the 75week moving average.

Most Active: Stocks have the highest monthly share trading volume.
Low Price: Absolute price level of the stock at month-end.
5Wk/30Wk Moving Average: The ratio between the average daily closing price of a stock over five weeks versus that over thirty weeks.

10Wk/40Wk Moving Average: The ratio between the average daily closing price of a stock over ten weeks versus that over forty weeks.

Price/200-Day Moving Average: A ratio between month-end closing price and average closing price over the last 200 days.

Price Return - 12-Month Performance: Absolute price return over the last twelve months.

Price Return - 11-Month Performance: Absolute price return from one year ago, ignoring the most recent month.

Price Return - 9-Month Performance: Absolute price return over the last nine months.

Price Return - 3-Month Performance: Absolute price return over the last three months.

Price Return - 12-Month and 1-Month Performance: Equal weighted rank of stocks by (1) highest price return over the last twelve months and (2) highest price return over the most recently ended month.

Price Return - 12-Month and 1-Month Reversal: Equal weighted rank of stocks by (1) highest price return over the last twelve months and (2) lowest price return over the last one month.

Earnings Momentum: The difference between 12-month trailing EPS and yearago 12-month trailing EPS divided by year-ago 12-month trailing EPS.

Projected 5-Year EPS Growth: The five-year EPS growth rate estimated by BofAML Fundamental Equity Research. If no BofAML estimate exist, then I/B/E/S Mean Long Term Growth Estimate is used.

Earnings Torpedo: I/B/E/S FY2 estimate less latest actual annual EPS divided by month-end price.

Earnings Surprise: A forecast earnings surprise variable which compares BofAML estimates to those of the consensus after adjusting for the range of estimates. Stocks are ranked from 1 to 10, with 1 being among the most optimistic, relative to the consensus, 10 being among the most pessimistic. Consensus estimated earnings data are courtesy of $I / B / E / S$.

EPS Estimate Revision: The difference between the I/B/E/S FY1 estimate and that of three months ago divided by the absolute value of $\mathrm{I} / \mathrm{B} / \mathrm{E} / \mathrm{S}$ FY1 estimate of three months ago.

Beta: A measure of non-diversifiable risk. It is calculated using regression Strategy incorporating 60 months of price performance versus that of the S\&P 500.

Variability of EPS: The degree of variability in quarterly EPS over the past 5 years. Stocks are ranked from 10 to 1 with 10 being the most variable.

EPS Estimate Dispersion: The coefficient of variation among I/B/E/S FY2 estimates. Presented as a decile rank.

Dividend Growth: The growth between trailing 4-quarter total common dividends and year-ago trailing 4-quarter total common dividends.

Neglect-Institutional Ownership: Those companies with the lowest proportions of float-adjusted shares held by institutional owners are considered more neglected.

Neglect-Analyst Coverage: Those companies with the lowest number of analysts submitting ratings to FirstCall.

Firm Size: Month-end market value.
Foreign Exposure: The ratio of foreign sales to total sales.
Equity Duration: An adaptation of our Dividend Discount Model which measures the interest-rate sensitivity of a stock. Longer durations (higher numbers) suggest more interest-rate sensitivity.

P/E-to-Growth: Trailing twelve months P/E divided by the five-year EPS growth rate estimated by BofAML Fundamental Equity Research. If no BofAML estimate exist, then the IBES Mean Long Term Growth Estimate is used.

Return on Equity One-Year Average: Net income divided by average equity provided.

Return on Equity Five-Year Average: Five-year average return on equity.
Return on Assets: Net income plus interest and taxes as a percent of average total assets.

Return on Capital: The sum of net income, interest expense and minority interest, as a percent of average total invested capital which is inclusive of longterm debt, preferred stock, common equity, and minority interest.

Return on Equity One-Year Average (Adjusted for Debt): The ROE of companies with higher debt levels are considered lower than those of companies with lower debt levels based on their debt-to-equity ratios.

Return on Equity Five-Year Average (Adjusted for Debt): The average five year ROE of companies with higher debt levels are considered lower than those of companies with lower debt levels based on their debt-to-equity ratios.

## Link to Definitions

Macro
Click here for definitions of commonly used terms.

## Important Disclosures

FUNDAMENTAL EQUITY OPINION KEY: Opinions include a Volatility Risk Rating, an Investment Rating and an Income Rating. VOLATILITY RISK RATINGS, indicators of potential price fluctuation, are: A - Low, B - Medium and C - High. INVESTMENT RATINGS reflect the analyst's assessment of a stock's: (i) absolute total return potential and (ii) attractiveness for investment relative to other stocks within its Coverage Cluster (defined below). There are three investment ratings: 1-Buy stocks are expected to have a total return of at least $10 \%$ and are the most attractive stocks in the coverage cluster; 2 - Neutral stocks are expected to remain flat or increase in value and are less attractive than Buy rated stocks and 3 - Underperform stocks are the least attractive stocks in a coverage cluster. Analysts assign investment ratings considering, among other things, the 0-12 month total return expectation for a stock and the firm's guidelines for ratings dispersions (shown in the table below). The current price objective for a stock should be referenced to better understand the total return expectation at any given time. The price objective reflects the analyst's view of the potential price appreciation (depreciation).

| Investment rating | Total return expectation (within 12-month period of date of initial rating) | Ratings dispersion guidelines for coverage cluster* |
| :---: | :---: | :---: |
| Buy | $\geq 10 \%$ | $\leq 70 \%$ |
| Neutral | $\geq 0 \%$ | $\leq 30 \%$ |
| Underperform | N/A | $\geq 20 \%$ |

* Ratings dispersions may vary from time to time where BofA Merrill Lynch Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

INCOME RATINGS, indicators of potential cash dividends, are: 7 - same/higher (dividend considered to be secure), 8-samellower (dividend not considered to be secure) and 9 - pays no cash dividend. Coverage Cluster is comprised of stocks covered by a single analyst or two or more analysts sharing a common industry, sector, region or other classification(s). A stock's coverage cluster is included in the most recent BofA Merrill Lynch Comment referencing the stock.

Due to the nature of strategic analysis, the issuers or securities recommended or discussed in this report are not continuously followed. Accordingly, investors must regard this report as providing stand-alone analysis and should not expect continuing analysis or additional reports relating to such issuers and/or securities.

Due to the nature of quantitative analysis, the issuers or securities recommended or discussed in this report are not continuously followed. Accordingly, investors must regard this report as providing stand-alone analysis and should not expect continuing analysis or additional reports relating to such issuers and/or securities.

BofA Merrill Lynch Research personnel (including the analyst(s) responsible for this report) receive compensation based upon, among other factors, the overall profitability of Bank of America Corporation, including profits derived from investment banking revenues.

## Other Important Disclosures

Officers of MLPF\&S or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments.

BofA Merrill Lynch Global Research policies relating to conflicts of interest are described at http://www.ml.com/media/43347.pdf.
"BofA Merrill Lynch" includes Merrill Lynch, Pierce, Fenner \& Smith Incorporated ("MLPF\&S") and its affiliates. Investors should contact their BofA Merrill Lynch representative or Merrill Lynch Global Wealth Management financial advisor if they have questions concerning this report.

Information relating to Non-US affiliates of BofA Merrill Lynch and Distribution of Affiliate Research Reports:
MLPF\&S distributes, or may in the future distribute, research reports of the following non-US affiliates in the US (short name: legal name): Merrill Lynch (France): Merrill Lynch Capital Markets (France) SAS; Merrill Lynch (Frankfurt): Merrill Lynch International Bank Ltd., Frankfurt Branch; Merrill Lynch (South Africa): Merrill Lynch South Africa (Pty) Ltd.; Merrill Lynch (Milan): Merrill Lynch International Bank Limited; MLI (UK): Merrill Lynch International; Merrill Lynch (Australia): Merrill Lynch Equities (Australia) Limited; Merrill Lynch (Hong Kong): Merrill Lynch (Asia Pacific) Limited; Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd.; Merrill Lynch (Canada): Merrill Lynch Canada Inc; Merrill Lynch (Mexico): Merrill Lynch Mexico, SA de CV, Casa de Bolsa; Merrill Lynch (Argentina): Merrill Lynch Argentina SA; Merrill Lynch (Japan): Merrill Lynch Japan Securities Co., Ltd.; Merrill Lynch (Seoul): Merrill Lynch International Incorporated (Seoul Branch); Merrill Lynch (Taiwan): Merrill Lynch Securities (Taiwan) Ltd.; DSP Merrill Lynch (India): DSP Merrill Lynch Limited; PT Merrill Lynch (Indonesia): PT Merrill Lynch Indonesia; Merrill Lynch (Israel): Merrill Lynch Israel Limited; Merrill Lynch (Russia): Merrill Lynch CIS Limited, Moscow; Merrill Lynch (Turkey I.B.): Merrill Lynch Yatirim Bank A.S.; Merrill Lynch (Turkey Broker): Merrill Lynch Menkul Değerler A.Ş.; Merrill Lynch (Dubai): Merrill Lynch International, Dubai Branch; MLPF\&S (Zurich rep. office): MLPF\&S Incorporated Zurich representative office; Merrill Lynch (Spain): Merrill Lynch Capital Markets Espana, S.A.S.V.; Merrill Lynch (Brazil): Bank of America Merrill Lynch Banco Multiplo S.A.

This research report has been approved for publication and is distributed in the United Kingdom to professional clients and eligible counterparties (as each is defined in the rules of the Financial Services Authority) by Merrill Lynch International and Banc of America Securities Limited (BASL), which are authorized and regulated by the Financial Services Authority and has been approved for publication and is distributed in the United Kingdom to retail clients (as defined in the rules of the Financial Services Authority) by Merrill Lynch International Bank Limited, London Branch, which is authorized by the Central Bank of Ireland and is subject to limited regulation by the Financial Services Authority - details about the extent of its regulation by the Financial Services Authority are available from it on request; has been considered and distributed in Japan by Merrill Lynch Japan Securities Co., Ltd., a registered securities dealer under the Financial Instruments and Exchange Act in Japan; is distributed in Hong Kong by Merrill Lynch (Asia Pacific) Limited, which is regulated by the Hong Kong SFC and the Hong Kong Monetary Authority; is issued and distributed in Taiwan by Merrill Lynch Securities (Taiwan) Ltd.; is issued and distributed in India by DSP Merrill Lynch Limited; and is issued and distributed in Singapore by Merrill Lynch International Bank Limited (Merchant Bank) and Merrill Lynch (Singapore) Pte Ltd. (Company Registration No.'s F 06872 E and 198602883D respectively) and Bank of America Singapore Limited (Merchant Bank). Merrill Lynch International Bank Limited (Merchant Bank) and Merrill Lynch (Singapore) Pte Ltd. are regulated by the Monetary Authority of Singapore. Merrill Lynch Equities (Australia) Limited (ABN 65006276 795), AFS License 235132 provides this report in Australia in accordance with section 911B of the Corporations Act 2001 and neither it nor any of its affiliates involved in preparing this research report is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this report in Brazil. Merriil Lynch (Dubai) is authorized and regulated by the Dubai Financial Services Authority (DFSA). Research reports prepared and issued by Merrill Lynch (Dubai) are prepared and issued in accordance with the requirements of the DFSA conduct of business rules.

Merrill Lynch (Frankfurt) distributes this report in Germany. Merrill Lynch (Frankfurt) is regulated by BaFin.
This research report has been prepared and issued by MLPF\&S and/or one or more of its non-US affiliates. MLPF\&S is the distributor of this research report in the US and accepts full responsibility for research reports of its non-US affiliates distributed to MLPF\&S clients in the US. Any US person receiving this research report and wishing to effect any transaction in any security discussed in the report should do so through MLPF\&S and not such foreign affiliates.

## General Investment Related Disclosures:

This research report provides general information only. Neither the information nor any opinion expressed constitutes an offer or an invitation to make an offer, to buy or sell any securities or other financial instrument or any derivative related to such securities or instruments (e.g., options, futures, warrants, and contracts for differences). This report is not intended to provide personal investment advice and it does not take into account the specific investment objectives, financial situation and the particular needs of any specific person. Investors should seek financial advice regarding the appropriateness of investing in financial instruments and implementing investment strategies discussed or recommended in this report and should understand that statements regarding future prospects may not be realized. Any decision to purchase or subscribe for securities in any offering must be based solely on existing public information on such security or the information in the prospectus or other offering document issued in connection with such offering, and not on this report.

Securities and other financial instruments discussed in this report, or recommended, offered or sold by Merrill Lynch, are not insured by the Federal Deposit Insurance Corporation and are not deposits or other obligations of any insured depository institution (including, Bank of America, N.A.). Investments in general and, derivatives, in particular, involve numerous risks, including, among others, market risk, counterparty default risk and liquidity risk. No security, financial instrument or derivative is suitable for all investors. In some cases, securities and other financial instruments may be difficult to value or sell and reliable information about the value or risks related to the security or financial instrument may be difficult to obtain. Investors should note that income from such securities and other financial instruments, if any, may fluctuate and that price or value of such securities and instruments may rise or fall and, in some cases, investors may lose their entire principal investment. Past performance is not necessarily a guide to future performance. Levels and basis for taxation may change.

This report may contain a short-term trading idea or recommendation, which highlights a specific near-term catalyst or event impacting the company or the market that is anticipated to have a short-term price impact on the equity securities of the company. Short-term trading ideas and recommendations are different from and do not affect a stock's fundamental equity rating, which reflects both a longer term total return expectation and attractiveness for investment relative to other stocks within its Coverage Cluster. Short-term trading ideas and recommendations may be more or less positive than a stock's fundamental equity rating.

BofA Merrill Lynch is aware that the implementation of the ideas expressed in this report may depend upon an investor's ability to "short" securities or other financial instruments and that such action may be limited by regulations prohibiting or restricting "shortselling" in many jurisdictions. Investors are urged to seek advice regarding the applicability of such regulations prior to executing any short idea contained in this report.

Foreign currency rates of exchange may adversely affect the value, price or income of any security or financial instrument mentioned in this report. Investors in such securities and instruments, including ADRs, effectively assume currency risk.

UK Readers: The protections provided by the U.K. regulatory regime, including the Financial Services Scheme, do not apply in general to business coordinated by BofA Merrill Lynch entities located outside of the United Kingdom. BofA Merrill Lynch Global Research policies relating to conflicts of interest are described at http://www.ml.com/media/43347.pdf.

Officers of MLPF\&S or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments.
MLPF\&S or one of its affiliates is a regular issuer of traded financial instruments linked to securities that may have been recommended in this report. MLPF\&S or one of its affiliates may, at any time, hold a trading position (long or short) in the securities and financial instruments discussed in this report.

BofA Merrill Lynch, through business units other than BofA Merrill Lynch Global Research, may have issued and may in the future issue trading ideas or recommendations that are inconsistent with, and reach different conclusions from, the information presented in this report. Such ideas or recommendations reflect the different time frames, assumptions, views and analytical methods of the persons who prepared them, and BofA Merrill Lynch is under no obligation to ensure that such other trading ideas or recommendations are brought to the attention of any recipient of this report.

In the event that the recipient received this report pursuant to a contract between the recipient and MLPF\&S for the provision of research services for a separate fee, and in connection therewith MLPF\&S may be deemed to be acting as an investment adviser, such status relates, if at all, solely to the person with whom MLPF\&S has contracted directly and does not extend beyond the delivery of this report (unless otherwise agreed specifically in writing by MLPF\&S). MLPF\&S is and continues to act solely as a broker-dealer in connection with the execution of any transactions, including transactions in any securities mentioned in this report.

## Copyright and General Information regarding Research Reports:

Copyright 2012 Merrill Lynch, Pierce, Fenner \& Smith Incorporated. All rights reserved. iQmethod, iQmethod 2.0, iQprofile, iQtoolkit, iQworks are service marks of Merrill Lynch \& Co., Inc. iQanalytics®, iQcustom®, iQdatabase® are registered service marks of Merrill Lynch \& Co., Inc. This research report is prepared for the use of BofA Merrill Lynch clients and may not be redistributed, retransmitted or disclosed, in whole or in part, or in any form or manner, without the express written consent of BofA Merrill Lynch. BofA Merrill Lynch Global Research reports are distributed simultaneously to internal and client websites and other portals by BofA Merrill Lynch and are not publicly-available materials. Any unauthorized use or disclosure is prohibited. Receipt and review of this research report constitutes your agreement not to redistribute, retransmit, or disclose to others the contents, opinions, conclusion, or information contained in this report (including any investment recommendations, estimates or price targets) without first obtaining expressed permission from an authorized officer of BofA Merrill Lynch.

Materials prepared by BofA Merrill Lynch Global Research personnel are based on public information. Facts and views presented in this material have not been reviewed by, and may not reflect information known to, professionals in other business areas of BofA Merrill Lynch, including investment banking personnel. BofA Merrill Lynch has established information barriers between BofA Merrill Lynch Global Research and certain business groups. As a result, BofA Merrill Lynch does not disclose certain client relationships with, or compensation received from, such companies in research reports. To the extent this report discusses any legal proceeding or issues, it has not been prepared as nor is it intended to express any legal conclusion, opinion or advice. Investors should consult their own legal advisers as to issues of law relating to the subject matter of this report. BofA Merrill Lynch Global Research personnel's knowledge of legal proceedings in which any BofA Merrill Lynch entity and/or its directors, officers and employees may be plaintiffs, defendants, co-defendants or co-plaintiffs with or involving companies mentioned in this report is based on public information. Facts and views presented in this material that relate to any such proceedings have not been reviewed by, discussed with, and may not reflect information known to, professionals in other business areas of BofA Merrill Lynch in connection with the legal proceedings or matters relevant to such proceedings.

This report has been prepared independently of any issuer of securities mentioned herein and not in connection with any proposed offering of securities or as agent of any issuer of any securities. None of MLPF\&S, any of its affiliates or their research analysts has any authority whatsoever to make any representation or warranty on behalf of the issuer(s). BofA Merrill Lynch Global Research policy prohibits research personnel from disclosing a recommendation, investment rating, or investment thesis for review by an issuer prior to the publication of a research report containing such rating, recommendation or investment thesis.

Any information relating to the tax status of financial instruments discussed herein is not intended to provide tax advice or to be used by anyone to provide tax advice. Investors are urged to seek tax advice based on their particular circumstances from an independent tax professional.

The information herein (other than disclosure information relating to BofA Merrill Lynch and its affiliates) was obtained from various sources and we do not guarantee its accuracy. This report may contain links to third-party websites. BofA Merrill Lynch is not responsible for the content of any third-party website or any linked content contained in a third-party website. Content contained on such third-party websites is not part of this report and is not incorporated by reference into this report. The inclusion of a link in this report does not imply any endorsement by or any affiliation with BofA Merrill Lynch. Access to any third-party website is at your own risk, and you should always review the terms and privacy policies at third-party websites before submitting any personal information to them. BofA Merrill Lynch is not responsible for such terms and privacy policies and expressly disclaims any liability for them.

Cases 12-E-0201 \& 12-G-0202
DUAH
Exhibit
(KXD-20)

Merrill Lynch
08 June 2012

Certain outstanding reports may contain discussions and/or investment opinions relating to securities, financial instruments and/or issuers that are no longer current. Always refer to the most recent research report relating to a company or issuer prior to making an investment decision.

In some cases, a company or issuer may be classified as Restricted or may be Under Review or Extended Review. In each case, investors should consider any investment opinion relating to such company or issuer (or its security and/or financial instruments) to be suspended or withdrawn and should not rely on the analyses and investment opinion(s) pertaining to such issuer (or its securities and/or financial instruments) nor should the analyses or opinion(s) be considered a solicitation of any kind. Sales persons and financial advisors affiliated with MLPF\&S or any of its affiliates may not solicit purchases of securities or financial instruments that are Restricted or Under Review and may only solicit securities under Extended Review in accordance with firm policies.

Neither BofA Merrill Lynch nor any officer or employee of BofA Merrill Lynch accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this report or its contents.

## Monthly insights for equity management

## Cash return \& technicals in the lead

Cash Deployment and Technical strategies were the most resilient groups in the second quarter, and also comprised the best performing strategies in the first half. Growth strategies generally outperformed Value strategies, both in the second quarter and in the first half, and this theme is one we expect to persist - valuation generally matters less than quality and growth during periods of slowing growth.

## Risk, foreign exposure, and small size lagged in 2Q and 1H

 Risk strategies - including high beta stocks, companies with high earnings variability and those with uncertain earnings - lagged other strategies in 2Q and have underperformed the S\&P 500 so far this year. And amid concerns around global growth, the market penalized companies with a high share of revenues derived from overseas - our Foreign Exposure strategy lagged by the widest margin in the second quarter, and was among the weakest styles in 1 H 12 . Smaller companies also lagged both in 2Q and 1H, as they generally do during periods of decelerating profits.
## Investors want cash, we expect this to continue

Last year, one of the most consistently rewarded attributes of US equities was cash return. This year, this theme has continued to play out-Cash Deployment represented the best-performing strategy group of both 2Q and 1H 2012. High Dividend Growth and Share Repurchase were among the leading factors in 1H, and High Dividend Yield claimed the top spot last quarter. We expect cash deployment strategies to continue to outperform for both cyclical and secular reasons, and at this point we prefer dividend growth over simply high dividend yield. For more details, see our recent report: Seeking yields that can grow.

Chart 1: Average performance by strategy group (top decile): 2Q 2012


Equity \& Quant Strategy | United States 11 July 2012

## Bank of America Merrill Lynch

| Savita Subramanian | +16468553878 |
| :--- | ---: |
| Equity \& Quant Strategist |  |
| MLPF\&S |  |
| savita.subramanian@baml.com |  |
| Dan Suzuki, CFA | +16468552827 |
| Equity Strategist |  |
| MLPF\&S |  |
| dan.suzuki@baml.com | +16468553327 |
| Jill Carey |  |
| Equity Strategist |  |
| MLPF\&S |  |
| jill.carey@baml.com |  |


| Top 5 screens in 2Q | Perf |
| :--- | :--- |
| Dividend Yield (Total Return) | $3.5 \%$ |
| Price Returns (12-Month plus 1-Month) | $1.5 \%$ |
| Relative Strength (30wk 75 wk ) | $-0.5 \%$ |
| Institutional Neglect | $-0.8 \%$ |
| DDM Valuation | $-0.9 \%$ |
| S\&P 500 (Equal weighted) | $6.8 \%$ |
| Source: BofA Meriil Lynch US Equity and US Quant Strategy |  |


| Btm 5 screens in 2Q | Perf |
| :--- | :---: |
| High Foreign Exposure | $-12.6 \%$ |
| High Beta | $-12.4 \%$ |
| Forward Earnings Yield | $-12.0 \%$ |
| Low Price to Book Value | $-9.9 \%$ |
| Low Price to Cash Flow | $-9.8 \%$ |
| S\&P 500 (Equal weighted) | $6.8 \%$ |

Source: BofA Meriill Lynch US Equity and US Quant Strategy
Disclaimer: The valuations and screens contained herein are useful in assessing comparative valuations and comparative earnings prospects and are not intended to recommend transactions relating to any specific security. These indicators should be used in investment decisions only with other factors including financial risk, investment risk, management strategies and operating and financial outlooks.

Source: BofA Merrill Lynch US Equity \& US Quant Strategy

[^17]Refer to important disclosures on page 63 to 65. Link to Definitions on page 62.

## Contents

Performance Table ..... 4
Advances and Declines ..... 5
MLQS Financial Confidence \& Thematic Indicators ..... 6
GARP STRATEGIES:
Alpha Surprise Model ..... 7
P/E-to-Growth ..... 8
VALUATION STRATEGIES:
Dividend Discount Model Alpha ..... 9
Earnings Yield ..... 10
Forward Earnings Yield ..... 11
Price/Book Value ..... 12
Price/Cash Flow ..... 13
Price/Free Cash Flow ..... 14
Price/Sales ..... 15
EV / EBITDA ..... 16
Free Cash Flow / EV ..... 17
CASH DEPLOYMENT STRATEGIES:
Dividend Yield ..... 18
Dividend Growth ..... 19
Share Repurchase ..... 20
TECHNICAL STRATEGIES:
Relative Strength -30wk/75wk Moving Average ..... 21
Relative Strength - 5wk/30wk Moving Average ..... 22
Relative Strength - 10wk/40wk Moving Average ..... 23
Price to Moving Average (200 -Day) ..... 24
Price Return - 12-Month Performance ..... 25
Price Return - 9-Month Performance ..... 26
Price Return - 3-Month Performance ..... 27
Price Return - 11-Month Performance ..... 28
Price Return - 12-Month and 1-Month Performance ..... 29
Price Return - 12-Month and 1-Month Reversal ..... 30
Most Active ..... 31
GROWTH STRATEGIES:
Earnings Momentum ..... 32
Projected Five-Year EPS Growth ..... 33
Positive Earnings Surprise ..... 34
Earnings Estimate Revision ..... 35
Equity Duration ..... 36
GROWTH (NEGATIVE) STRATEGIES:
Earnings Torpedo ..... 37
Negative Earnings Surprise ..... 38
QUALITY STRATEGIES:
One-Year Return On Equity ..... 39
Five-Year Return on Equity ..... 40
One-Year Return on Equity (Adjusted for Debt) ..... 41
Five-Year Return on Equity (Adjusted by Debt) ..... 42
Return on Assets ..... 43
Return on Capital ..... 44
RISK STRATEGIES:
Beta ..... 45
Variability of Earnings ..... 46
Estimate Dispersion ..... 47
Low Price ..... 48
MISCELLANEOUS STRATEGIES:
Neglect-Institutional Ownership ..... 49
Neglect-Analyst Coverage ..... 50
Size ..... 51
Foreign Exposure ..... 52
Valuation Backdrop ..... 53
Performance Calculation Methodology ..... 59
Definitions ..... 60

Cases 12-E-0201 \& 12-G-0202
Exhibit (KXD-20)

Bank of America Merrill Lynch

Quantitative Strategies Performance as of 6/30/2012

| Quantitative Strategies | Category | 1 M | 3 M | 6 M | 12 M | YTD | $5 \mathrm{Yr}{ }^{+}$ | Inception Date |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| High Dividend Growth (Total Return) | Growth | 3.7 | -3.9 | 13.4 | 4.6 | 13.4 | 19.9 | 3.7 |
| Price Returns (12-Month plus 1-Month) | Momentum | 4.1 | 1.5 | 12.3 | 1.6 | 12.3 | -13.0 | -2.8 |
| High Dividend Growth (Price Return) | Growth | 3.4 | -4.5 | 12.2 | 2.0 | 12.2 | 5.1 | 1.0 |
| Relative Strength (30wk/75wk) | Momentum | 1.1 | -0.5 | 11.3 | -4.9 | 11.3 | -39.3 | -9.5 |
| Low Price to Book Value | Value | 5.0 | -9.9 | 10.8 | -9.6 | 10.8 | -42.6 | -10.5 |
| ROA | Growth | 1.4 | -6.5 | 10.5 | 5.6 | 10.5 | 5.9 | 1.2 |
| DDM Valuation | Value | 4.0 | -0.9 | 10.2 | 6.9 | 10.2 | -22.2 | -4.9 |
| High Projected 5-Yr Growth | Growth | 3.3 | -6.4 | 9.9 | -6.6 | 9.9 | -6.8 | -1.4 |
| ROE (1-Yr Avg. Adj. by Debt) | Growth | 3.0 | -4.8 | 9.4 | 5.1 | 9.4 | 6.9 | 1.4 |
| Stock Repurchase | Miscellaneous | 5.4 | -1.7 | 8.7 | 5.9 | 8.7 | -4.3 | -0.9 |
| Price Returns (3-Month) | Momentum | 3.9 | -7.7 | 8.5 | -0.8 | 8.5 | 0.1 | 0.0 |
| Most Active | Technical | 5.1 | -6.4 | 8.5 | -6.3 | 8.5 | -24.6 | -5.5 |
| High Duration | Miscellaneous | 3.7 | -4.3 | 8.4 | -0.2 | 8.4 | 1.6 | 0.3 |
| Price Returns (12-Month) | Momentum | 1.8 | -2.5 | 8.4 | -0.4 | 8.4 | -23.0 | -5.1 |
| S\&P 500 Index (Price Return) | Benchmark | 4.0 | -3.3 | 8.3 | 3.1 | 8.3 | -9.4 | -2.0 |
| Low Price to Free Cash Flow | Value | 4.8 | -7.6 | 8.3 | -3.4 | 8.3 | 1.2 | 0.2 |
| S\&P 500 Equal Weighted (Total Return) | Benchmark | 3.8 | -4.3 | 7.9 | 0.1 | 7.9 | 8.2 | 1.6 |
| High Free Cash Flow to EV | Value | 4.8 | -8.8 | 7.7 | -0.3 | 7.7 | 5.9 | 1.2 |
| ROE (1-Yr Average) | Growth | 3.1 | -5.5 | 7.5 | 1.0 | 7.5 | 7.8 | 1.5 |
| High Beta | Risk | 3.8 | -12.4 | 7.5 | -15.7 | 7.5 | -3.9 | -0.8 |
| Price Returns (9-Month) | Momentum | 2.8 | -1.3 | 7.4 | -0.6 | 7.4 | -19.8 | -4.3 |
| ROC | Growth | 2.1 | -7.0 | 7.4 | 2.1 | 7.4 | 2.4 | 0.5 |
| EPS Momentum | Growth | 3.2 | -7.9 | 7.2 | -9.2 | 7.2 | -24.6 | -5.5 |
| S\&P 500 Equal Weighted (Price Return) | Benchmark | 3.6 | -4.8 | 6.8 | -1.9 | 6.8 | -2.7 | -0.6 |
| High EPS Estimate Dispersion | Risk | 6.5 | -6.6 | 6.8 | -10.0 | 6.8 | -32.6 | -7.6 |
| Dividend Yield (Total Return) | Value | 5.8 | 3.5 | 6.8 | 15.7 | 6.8 | 2.5 | 0.5 |
| Upward Estimate Revisions | Growth | 5.4 | -6.2 | 6.3 | -5.4 | 6.3 | -27.2 | -6.2 |
| Price Returns (11-Month since 1 year ago) | Momentum | 1.3 | -3.5 | 6.2 | -4.5 | 6.2 | -30.2 | -6.9 |
| Institutional Neglect | Miscellaneous | 4.4 | -0.8 | 6.1 | 2.3 | 6.1 | -10.4 | -2.2 |
| ROE (5-Yr Average) | Growth | 3.3 | -5.3 | 5.9 | 1.0 | 5.9 | 19.9 | 3.7 |
| Low Price | Technical | 4.9 | -8.4 | 5.9 | -13.8 | 5.9 | 2.0 | 0.4 |
| Low PE to GROWTH | Growth | 3.0 | -8.5 | 5.8 | -10.1 | 5.8 | -16.9 | -3.6 |
| Analyst Coverage Neglect | Miscellaneous | 4.0 | -5.0 | 5.7 | -3.5 | 5.7 | -7.6 | -1.6 |
| MLQS Alpha Surprise Model | GARP | 3.8 | -5.8 | 5.5 | -0.7 | 5.5 | 3.0 | 0.6 |
| Negative Earnings Surprise | Growth | 2.6 | -7.1 | 5.3 | -3.1 | 5.3 | -10.9 | -2.3 |
| Earnings Yield | Value | 5.4 | -8.9 | 5.2 | -5.6 | 5.2 | -15.2 | -3.3 |
| Small Size | Miscellaneous | 4.6 | -7.8 | 4.5 | -8.3 | 4.5 | 14.3 | 2.7 |
| Price Returns (12-Month plus 1-Month Reversal) | Momentum | 3.2 | -3.6 | 4.4 | -9.0 | 4.4 | -29.6 | -6.8 |
| Dividend Yield (Price Return) | Value | 5.3 | 2.3 | 4.2 | 10.0 | 4.2 | -23.1 | -5.1 |
| Relative Strength (Price/200-Day Moving Avg) | Momentum | 3.1 | -4.7 | 4.0 | -4.5 | 4.0 | -18.7 | -4.1 |
| Low EPS Torpedo | Growth | 5.5 | -6.2 | 3.6 | -2.0 | 3.6 | -2.3 | -0.5 |
| ROE (5-Yr Avg. Adj. by Debt) | Growth | 2.8 | -6.3 | 3.4 | -4.2 | 3.4 | 9.1 | 1.8 |
| Positive Earnings Surprise | Growth | 4.0 | -7.3 | 3.4 | -7.5 | 3.4 | -3.1 | -0.6 |
| Forward Earnings Yield | Value | 5.5 | -12.0 | 2.9 | -13.6 | 2.9 | -20.4 | -4.5 |
| Low Price to Sales | Value | 3.8 | -7.8 | 2.8 | -8.9 | 2.8 | 8.2 | 1.6 |
| High Variability of EPS | Risk | 3.0 | -8.7 | 2.5 | -11.2 | 2.5 | -9.6 | -2.0 |
| Relative Strength (10wk40wk) | Momentum | 3.3 | -6.3 | 2.2 | -6.2 | 2.2 | -25.3 | -5.7 |
| High Foreign Exposure | Miscellaneous | 2.0 | -12.6 | 1.4 | -12.0 | 1.4 | 8.5 | 1.6 |
| Relative Strength ( $5 \mathrm{wk} / 30 \mathrm{wk}$ ) | Momentum | 4.4 | -6.5 | 1.1 | -4.1 | 1.1 | -4.8 | -1.0 |
| Low EV/EBITDA | Value | 5.8 | -9.7 | 0.7 | -6.0 | 0.7 | -3.4 | -0.7 |
| Low Price to Cash Flow | Value | 4.6 | -9.8 | -0.4 | -12.5 | -0.4 | -5.7 | -1.2 |

[^18]${ }^{\dagger}$ For screens that have less than 5 years history, the performance is since inception

[^19]Cases 12-E-0201 \& 12-G-0202
DUAH
Exhibit
(KXD-20)
Bank of America

Advances and Declines as of 6/30/2012

| Quantitative Strategies | 1M |  | 3M |  | 6M |  | 12M |  | YTD |  | $5 \mathrm{Yr}{ }^{\dagger}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Advances | Declines | Advances | Declines | Advances | Declines | Advances | Declines | Advances | Declines | Advances | Declines |
| High Dividend Growth (Total Return) | 38 | 12 | 71 | 79 | 199 | 101 | 324 | 275 | 199 | 101 | 1601 | 1390 |
| Price Returns (12-Month plus 1-Month) | 43 | 7 | 87 | 63 | 194 | 106 | 329 | 270 | 194 | 106 | 807 | 807 |
| High Dividend Growth (Price Return) | 38 | 12 | 71 | 79 | 198 | 102 | 319 | 280 | 198 | 102 | 1574 | 1418 |
| Relative Strength (30wk/75wk) | 31 | 19 | 75 | 75 | 185 | 115 | 304 | 295 | 185 | 115 | 1525 | 1470 |
| Low Price to Book Value | 42 | 8 | 63 | 88 | 189 | 114 | 289 | 317 | 189 | 114 | 1470 | 1546 |
| ROA | 31 | 19 | 63 | 87 | 178 | 122 | 311 | 289 | 178 | 122 | 1583 | 1414 |
| DDM Valuation | 55 | 8 | 99 | 88 | 242 | 148 | 426 | 327 | 242 | 148 | 1936 | 1714 |
| High Projected 5-Yr Growth | 34 | 16 | 68 | 85 | 181 | 125 | 296 | 310 | 181 | 125 | 1736 | 1511 |
| ROE (1-Yr Avg. Adj. by Debt) | 33 | 17 | 66 | 84 | 184 | 116 | 319 | 281 | 184 | 116 | 1565 | 1431 |
| Stock Repurchase | 41 | 9 | 74 | 76 | 180 | 119 | 321 | 278 | 180 | 119 | 1595 | 1402 |
| Price Returns (3-Month) | 41 | 9 | 63 | 87 | 180 | 119 | 322 | 277 | 180 | 119 | 807 | 807 |
| Most Active | 40 | 10 | 67 | 83 | 180 | 120 | 298 | 301 | 180 | 120 | 1482 | 1504 |
| High Duration | 39 | 11 | 70 | 80 | 184 | 116 | 318 | 282 | 184 | 116 | 1576 | 1421 |
| Price Returns (12-Month) | 33 | 17 | 76 | 74 | 184 | 116 | 321 | 278 | 184 | 116 | 779 | 779 |
| Low Price to Free Cash Flow | 37 | 13 | 62 | 88 | 177 | 123 | 293 | 307 | 177 | 123 | 1561 | 1429 |
| High Free Cash Flow to EV | 37 | 9 | 56 | 76 | 158 | 104 | 262 | 270 | 158 | 104 | 676 | 676 |
| ROE (1-Yr Average) | 39 | 11 | 69 | 80 | 178 | 121 | 312 | 286 | 178 | 121 | 1602 | 1395 |
| High Beta | 38 | 12 | 53 | 101 | 177 | 130 | 272 | 337 | 177 | 130 | 1477 | 1539 |
| Price Returns (9-Month) | 36 | 14 | 78 | 71 | 183 | 116 | 326 | 272 | 183 | 116 | 789 | 789 |
| ROC | 33 | 17 | 62 | 88 | 173 | 127 | 311 | 289 | 173 | 127 | 1592 | 1408 |
| EPS Momentum | 38 | 12 | 61 | 89 | 179 | 121 | 290 | 309 | 179 | 121 | 1504 | 1491 |
| High EPS Estimate Dispersion | 40 | 12 | 70 | 88 | 167 | 145 | 294 | 322 | 167 | 145 | 1758 | 1818 |
| Dividend Yield (Total Return) | 48 | 2 | 104 | 46 | 192 | 108 | 374 | 225 | 192 | 108 | 1705 | 1284 |
| Upward Estimate Revisions | 42 | 8 | 66 | 84 | 171 | 128 | 300 | 299 | 171 | 128 | 1522 | 1474 |
| Price Returns (11-Month since 1 year ago) | 31 | 19 | 73 | 77 | 180 | 120 | 317 | 282 | 180 | 120 | 765 | 765 |
| Institutional Neglect | 47 | 3 | 90 | 60 | 185 | 115 | 334 | 266 | 185 | 115 | 1563 | 1434 |
| ROE (5-Yr Average) | 39 | 11 | 69 | 81 | 176 | 124 | 312 | 287 | 176 | 124 | 1611 | 1387 |
| Low Price | 36 | 14 | 59 | 91 | 167 | 132 | 278 | 320 | 167 | 132 | 1468 | 1521 |
| Low PE to GROWTH | 34 | 16 | 62 | 88 | 171 | 129 | 272 | 328 | 171 | 129 | 1538 | 1456 |
| Analyst Coverage Neglect | 31 | 10 | 58 | 67 | 151 | 114 | 281 | 303 | 151 | 114 | 1565 | 1486 |
| MLQS Alpha Surprise Model | 38 | 9 | 69 | 74 | 159 | 121 | 279 | 272 | 159 | 121 | 1411 | 1283 |
| Negative Earnings Surprise | 49 | 21 | 83 | 117 | 242 | 164 | 406 | 365 | 242 | 164 | 1952 | 1858 |
| Earnings Yield | 38 | 12 | 59 | 91 | 174 | 126 | 288 | 312 | 174 | 126 | 1539 | 1455 |
| Small Size | 34 | 16 | 60 | 90 | 161 | 139 | 280 | 320 | 161 | 139 | 1484 | 1509 |
| Price Returns (12-Month plus 1-Month Reversal) | 32 | 18 | 68 | 82 | 166 | 134 | 294 | 306 | 166 | 134 | 770 | 770 |
| Dividend Yield (Price Return) | 48 | 2 | 99 | 51 | 183 | 117 | 352 | 247 | 183 | 117 | 1625 | 1363 |
| Relative Strength (Price/200-Day Moving Avg) | 37 | 13 | 66 | 83 | 173 | 126 | 313 | 285 | 173 | 126 | 783 | 783 |
| Low EPS Torpedo | 41 | 9 | 71 | 79 | 166 | 134 | 294 | 305 | 166 | 134 | 1511 | 1484 |
| ROE (5-Yr Avg. Adj. by Debt) | 33 | 17 | 63 | 87 | 173 | 127 | 307 | 293 | 173 | 127 | 1555 | 1443 |
| Positive Earnings Surprise | 56 | 16 | 94 | 119 | 217 | 182 | 371 | 412 | 217 | 182 | 1983 | 1919 |
| Forward Earnings Yield | 41 | 9 | 55 | 95 | 162 | 137 | 257 | 342 | 162 | 137 | 1478 | 1510 |
| Low Price to Sales | 33 | 17 | 56 | 93 | 154 | 145 | 271 | 327 | 154 | 145 | 1516 | 1473 |
| High Variability of EPS | 44 | 18 | 78 | 111 | 214 | 166 | 367 | 404 | 214 | 166 | 1991 | 1928 |
| Relative Strength ( $10 \mathrm{wk} / 40 \mathrm{wk}$ ) | 37 | 13 | 70 | 80 | 172 | 128 | 315 | 285 | 172 | 128 | 777 | 777 |
| High Foreign Exposure | 32 | 18 | 48 | 102 | 161 | 139 | 264 | 336 | 161 | 139 | 1546 | 1447 |
| Relative Strength ( $5 \mathrm{wk} / 30 \mathrm{wk}$ ) | 42 | 8 | 68 | 81 | 170 | 129 | 319 | 279 | 170 | 129 | 788 | 788 |
| Low EV/EBITDA | 37 | 13 | 59 | 91 | 156 | 144 | 284 | 316 | 156 | 144 | 1539 | 1455 |
| Low Price to Cash Flow | 37 | 13 | 59 | 91 | 152 | 148 | 263 | 335 | 152 | 148 | 1508 | 1483 |

${ }^{\dagger}$ For screens that have less than 5 years history, the advance/decline data is since inception.
Source: BofA Merrill Lynch US Equity and US Quant Strategy

## MLQS Financial Confidence \& Thematic Indicators

Financial Confidence


Source: BofA Merrill Lynch US Quantitative Strategy
 is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

Thematic (High 5-Year Projected Growth vs. High EPS Yield)


[^20] is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

## Alpha Surprise Model

## Top 50 S\&P 500 Companies By Alpha Surprise Model

Alpha Surprise Model: a $25 \% 75 \%$ combination of the DDM "Alpha" and the Positive EPS "Surprise" Models.


868788899091929394959697989900010203040506070809101112


| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $3.80 \%$ |
| Last 3 M onths | $-5.82 \%$ |
| Last 6 M onths | $5.47 \%$ |
| Last 12 M onths | $-0.67 \%$ |
| 2012 YTD | $5.47 \%$ |

Screen for July

| Мо. |  |  | Alpha |  |  | Мо. |  |  | Alpha |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  |  | Surprise | Price |  | In |  |  | Surprise | Price |  |
| Scrn | Company | Ticker | Score | 06/29/2012 | S\&P | Scrn | Company | Ticker | Score | 06/29/2012 | S\&P |
| 3 | APPLE INC | AAPL | 1.00 | 584.00 | B | 9 | AUTONATION INC | AN | 2.25 | 35.28 | B |
| 6 | DIAMOND OFFSHRE DRILLING INC | DO | 1.00 | 59.13 | B | 2 | SPECTRA ENERGY CORP | SE | 2.25 | 29.06 | NA |
| 3 | GOODYEAR TIRE \& RUBBER CO | GT | 1.00 | 11.81 | C | New | WALGREEN CO | WAG | 2.25 | 29.58 | A+ |
| New | JOHNSON \& JOHNSON | JNJ | 1.00 | 67.56 | A+ | 5 | AUTOZONE INC | AZO | 2.50 | 367.17 | B+ |
| 3 | M \& T BANK CORP | MTB | 1.00 | 82.57 | B+ | 9 | CARMAX INC | KMX | 2.50 | 25.94 | B+ |
| 7 | NETFLIX INC | NFLX | 1.00 | 68.49 | B | 3 | CONSOL ENERGY INC | CNX | 2.50 | 30.24 | B |
| 3 | WESTERN DIGITAL CORP | WDC | 1.00 | 30.48 | B | 3 | FEDERATED INVESTORS INC | FII | 2.50 | 21.85 | B+ |
| 3 | BB\&T CORP | BBT | 1.25 | 30.85 | B+ | 9 | FLUOR CORP | FLR | 2.50 | 49.34 | A- |
| 3 | WATSON PHARMACEUTICALS INC | WPI | 1.25 | 73.99 | B- | New | FMC CORP | FMC | 2.50 | 53.48 | B |
| 9 | RAYTHEON CO | RTN | 1.50 | 56.59 | A- | 2 | GENERAL DYNAMICS CORP | GD | 2.50 | 65.96 | A+ |
| 5 | BOEING CO | BA | 1.75 | 74.30 | B+ | New | HOME DEPOT INC | HD | 2.50 | 52.99 | A |
| New | CELGENE CORP | CELG | 1.75 | 64.16 | B | 3 | VALERO ENERGY CORP | VLO | 2.50 | 24.15 | B |
| 5 | DOLLAR TREE INC | DLTR | 1.75 | 53.80 | B+ | 9 | ALLERGAN INC | AGN | 2.75 | 92.57 | B+ |
| 5 | XILINX INC | XLNX | 1.75 | 33.57 | B | New | ALPHA NATURAL RESOURCES INC | ANR | 2.75 | 8.71 | NA |
| 2 | BIOGEN IDEC INC | BIIB | 2.00 | 144.38 | B | New | BARD (C.R.) INC | BCR | 2.75 | 107.44 | A |
| 6 | CHESAPEAKE ENERGY CORP | CHK | 2.00 | 18.60 | B- | New | C H ROBINSON WORLDWIDE INC | CHRW | 2.75 | 58.53 | A+ |
| 3 | LIFE TECHNOLOGIES CORP | LIFE | 2.00 | 44.99 | B | New | CATERPILLAR INC | CAT | 2.75 | 84.91 | A+ |
| 3 | MICROSOFT CORP | MSFT | 2.00 | 30.59 | A- | 2 | DISCOVERY COMMUNICATIONS INC | DISCA | 2.75 | 54.00 | NA |
| 6 | SOUTHERN CO | SO | 2.00 | 46.30 | A- | New | MICRON TECHNOLOGY INC | MU | 2.75 | 6.31 | C |
| 11 | TERADATA CORP | TDC | 2.00 | 72.01 | NA | 2 | STERICYCLE INC | SRCL | 2.75 | 91.67 | B+ |
| New | AIR PRODUCTS \& CHEMICALS INC | APD | 2.25 | 80.73 | A | 5 | WELLS FARGO \& CO | WFC | 2.75 | 33.44 | A- |

## P/E-to-Growth

## Top 50 S\&P 500 Companies By Low PE to GROWTH

P/E-to-Growth: Trailing twelve months P/E divided by the five-year EPS growth rate estimated by BofAML Fundamental Equity Research. If no BofAML estimate exists, then IBES Mean Long Term Growth Estimate is used.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Sector Concentration Hith Care


| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $2.97 \%$ |
| Last 3 M onths | $-8.52 \%$ |
| Last 6 M onths | $5.82 \%$ |
| Last 12 Months | $-10.14 \%$ |
| 2012 YTD | $5.82 \%$ |

Screen for July

Mo.

| In | PEI | Price |  |
| :--- | ---: | ---: | ---: |
| Scrn. Company | Ticker | Growth | $06 / 29 / 2012$ |


|  | WESTERN DIGITAL CORP | WDC | 0.18 | 30.48 |
| :--- | :--- | :--- | :--- | ---: |
| 6 | FORD MOTOR CO | F | 0.27 | 9.59 |
| 16 | AMERICAN INTERNATIONAL GROUIAIG | 0.29 | 32.09 |  |
| 9 | GOODYEAR TIRE \& RUBBER CO | GT | 0.32 | 11.81 |
| 15 | COMERICA INC | CMA | 0.35 | 30.71 |
| 14 | CLIFFS NATURAL RESOURCES INC CLF | 0.37 | 49.29 |  |
| New | LENNAR CORP | LEN | 0.37 | 30.91 |
| 37 | METROPCS COMMUNICATIONS INCPCS | 0.38 | 6.05 |  |
| 10 | WYNN RESORTS LTD | WYNN | 0.43 | 103.72 |
| 8 | DENBURY RESOURCES INC | DNR | 0.44 | 15.11 |
| 7 | JOY GLOBAL INC | JOY | 0.45 | 56.73 |
| 5 | NABORS INDUSTRIES LTD | NBR | 0.48 | 14.40 |
| 15 | FIFTH THIRD BANCORP | FITB | 0.51 | 13.40 |
| 7 | HALLIBURTON CO | HAL | 0.52 | 28.39 |
| 15 | M \& T BANK CORP | MTB | 0.52 | 82.57 |
| 9 | SUNTRUST BANKS INC | STI | 0.53 | 24.23 |
| 11 | JOHNSON CONTROLS INC | JCI | 0.53 | 27.71 |
| 3 | E TRADE FINANCIAL CORP | ETFC | 0.54 | 8.04 |
| 15 | PEABODY ENERGY CORP | BTU | 0.55 | 24.52 |
| 33 | DIAMOND OFFSHRE DRILLING INC | DO | 0.57 | 59.13 |
| 11 | VIACOM INC | VIAB | 0.59 | 47.02 |
| 9 | INTERPUBLIC GROUP OF COS | IPG | 0.61 | 10.85 |
| 7 | BORGWARNER INC | BWA | 0.62 | 65.59 |
| 4 | HELMERICH \& PAYNE | HP | 0.62 | 43.48 |
| 12 | COVENTRY HEALTH CARE INC | CVH | 0.63 | 31.79 |

Mo.
In PEI Price
Scrn. Company
Ticker Growth 06/29/2012

| 5 | ASSURANT INC | AIZ | 0.63 | 34.84 |
| :--- | :--- | :--- | :--- | ---: |
| 9 | METLIFE INC | MET | 0.64 | 30.85 |
| 6 | BAKER HUGHES INC | BHI | 0.65 | 41.10 |
| 3 | TEXTRON INC | TXT | 0.66 | 24.87 |
| 6 | CHESAPEAKE ENERGY CORP | CHK | 0.66 | 18.60 |
| New | SOUTHWEST AIRLINES | LUV | 0.66 | 9.22 |
| 27 | CORNING INC | GLW | 0.67 | 12.93 |
| 6 | AUTONATION INC | AN | 0.67 | 35.28 |
| 4 | NEWFIELD EXPLORATION CO | NFX | 0.68 | 29.31 |
| 15 | KEYCORP | KEY | 0.68 | 7.74 |
| 3 | CATERPILLAR INC | CAT | 0.69 | 84.91 |
| New | WELLPOINT INC | WLP | 0.72 | 63.79 |
| New | AETNA INC | AET | 0.74 | 38.77 |
| 4 | SANDISK CORP | SNDK | 0.74 | 36.48 |
| 5 | DEERE \& CO | DE | 0.74 | 80.87 |
| 18 | DISCOVERY COMMUNICATIONS INC DISCA | 0.74 | 54.00 |  |
| 2 | NETFLIX INC | NFLX | 0.74 | 68.49 |
| 9 | U S BANCORP | USB | 0.75 | 32.16 |
| 9 | BB\&T CORP | BBT | 0.75 | 30.85 |
| New | HEWLETT-PACKARD CO | HPQ | 0.77 | 20.11 |
| 2 | CITIGROUP INC | C | 0.77 | 27.41 |
| New | WALGREEN CO | WAG | 0.78 | 29.58 |
| 5 | BOEING CO | BA | 0.80 | 74.30 |
| New | BED BATH \& BEYOND INC | BBBY | 0.80 | 61.80 |
| 10 | DISCOVER FINANCIAL SVCS INC | DFS | 0.80 | 34.58 |

## Dividend Discount Model Alpha

## Top S\&P 500 Companies by DDM ALPHA

Dividend Discount Model Alpha: The implied return from the BofAML Quantitative Strategy three-stage dividend discount model less the required return from a Capital Asset Pricing Model. Presented as a decile rank.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance


| A b s o Iu te R eturns |  |
| :--- | ---: |
| Last 1 M onth | $4.04 \%$ |
| Last 3 M onth s | $-0.86 \%$ |
| Last 6 M onths | $10.21 \%$ |
| Last 12 M onths | $6.93 \%$ |
| 2012 Y T D | $10.21 \%$ |

Screen for July

| M 0 . |  |  |  |  | M 0 . |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  |  | DDM Price |  | In |  |  | DDM Price |  |
| Scrn | Company | Ticker | Alpha | 06/29/2012 | Scrn | Company | Ticker | Alpha | 06/29/2012 |
| 12 | ABBOTT LABORATORIES | ABT | 1 | 64.47 | 9 | BB\&T CORP | B B T | 2 | 30.85 |
| 7 | AUTOZONE INC | AZO | 1 | 367.17 | N ew | C H ROBINSON WORLDWIDE INC | CHRW | 2 | 58.53 |
| 4 | APPLE INC | AAPL | 1 | 584.00 | 30 | CHUBB CORP | C B | 2 | 72.82 |
| 12 | BAXTER INTERNATIONAL INC | BAX | 1 | 53.15 | 43 | CLOROX COIDE | CLX | 2 | 72.46 |
| 20 | CELGENE CORP | CELG | 1 | 64.16 | 9 | CONSOLIDATED EDISON INC | ED | 2 | 62.19 |
| 105 | COLGATE-PALMOLIVE CO | CL | 1 | 104.10 | 21 | DISCOVERY COMMUNICATIONS INC | DISCA | 2 | 54.00 |
| 15 | COMERICA INC | CMA | 1 | 30.71 | 6 | EXXON MOBIL CORP | XOM | 2 | 85.57 |
| 29 | DIAMOND OFFSHRE DRILLING INC | DO | 1 | 59.13 | 30 | GILEAD SCIENCES INC | GILD | 2 | 51.28 |
| 7 | DOLLAR TREE INC | DLTR | 1 | 53.80 | 34 | INTL BUSINESS MACHINES CORP | IBM | 2 | 195.58 |
| 7 | FAMILY DOLLAR STORES | FDO | 1 | 66.48 | 6 | KEYCORP | KEY | 2 | 7.74 |
| 18 | FIRST HORIZON NATIONAL CORP | FHN | 1 | 8.65 | 35 | KIM BERLY-CLARK CORP | KM B | 2 | 83.77 |
| 42 | GENERAL M ILLS INC | GIS | 1 | 38.54 | 31 | KROGER CO | KR | 2 | 23.19 |
| 5 | GOODYEAR TIRE \& RUBBER CO | G T | 1 | 11.81 | 29 | KELLOGGCO | K | 2 | 49.33 |
| 19 | HEWLETT-PACKARDCO | HPQ | 1 | 20.11 | 38 | LABORATORY CP OF AMER HLDGS | LH | 2 | 92.61 |
| 38 | JOHNSON \& JOHNSON | JNJ | 1 | 67.56 | 9 | LORILLARD INC | LO | 2 | 131.95 |
| 15 | M \& T BANK CORP | M TB | 1 | 82.57 | New | MICROSOFT CORP | M SFT | 2 | 30.59 |
| 37 | METROPCS COMMUNICATIONS INC | PCS | 1 | 6.05 | New | PEOPLE'S UNITED FINLINC | PBCT | 2 | 11.61 |
| 12 | NETFLIX INC | N F LX | 1 | 68.49 | 3 | PEPSICO INC | PEP | 2 | 70.66 |
| 7 | O'REILLY AUTOMOTIVE INC | ORLY | 1 | 83.77 | 31 | PG\&ECORP | PCG | 2 | 45.27 |
| 9 | SUNTRUST BANKS INC | STI | 1 | 24.23 | 136 | PROCTER \& GAMBLECO | PG | 2 | 61.25 |
| 48 | WAL-MART STORES INC | WM T | 1 | 69.72 | 31 | PROGRESS ENERGY INC | PGN | 2 | 60.17 |
| 3 | WESTERN DIGITAL CORP | WDC | 1 | 30.48 | 40 | QUEST DIAGNOSTICS INC | DGX | 2 | 59.90 |
| 5 | WYNN RESORTS LTD | WYNN | 1 | 103.72 | 22 | SOUTHERNCO | SO | 2 | 46.30 |
| 15 | XILINX INC | XLNX | 1 | 33.57 | 3 | ST JUDE MEDICAL INC | STJ | 2 | 39.91 |
| 2 | ALEXION PHARMACEUTICALS INC | ALXN | 2 | 99.30 | 2 | STERICYCLE INC | SRCL | 2 | 91.67 |
| 12 | ALTERA CORP | ALTR | 2 | 33.84 | 6 | U S BANCORP | USB | 2 | 32.16 |
| 9 | ALTRIA GROUP INC | M O | 2 | 34.55 | 3 | WATSON PHARMACEUTICALS INC | WPI | 2 | 73.99 |
| 7 | AMGEN INC | AM G N | 2 | 72.91 | 41 | WISCONSIN ENERGY CORP | WEC | 2 | 39.57 |
| 12 | BARD (C.R.) INC | BCR | 2 | 107.44 | 28 | XCEL ENERGY INC | XEL | 2 | 28.41 |

Earnings Yield
Top 50 S\&P 500 Companies By EARNINGS YIELD
Earnings Yield: Trailing 12-month EPS divided by month-end price.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded
portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

| Absolute Returns |  |
| :--- | ---: |
| Last 1 Month | $5.44 \%$ |
| Last 3 Months | $-8.90 \%$ |
| Last 6 M onths | $5.15 \%$ |
| Last 12 Months | $-5.64 \%$ |
| 2012 YTD | $5.15 \%$ |

Screen for July

Mo

| In |  |  | Earnings | Price | In |  |  | Earning | Price |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn | Company | Ticker | Yield | 06/29/2012 | Scrn | Company | Ticker | Yield | 06/29/2012 |
| 27 | FORD MOTOR CO | F | 52.24\% | 9.59 | 14 | DISCOVER FINANCIAL SVCS INC | DFS | 12.49\% | 34.58 |
| 17 | AMERICAN INTERNATIONAL GROUI |  | 34.40\% | 32.09 | 29 | GANNETT CO | GCI | 12.42\% | 14.73 |
| 15 | CLIFFS NATURAL RESOURCES INC |  | 22.68\% | 49.29 | 7 | APACHE CORP | APA | 12.36\% | 87.89 |
| 5 | ASSURANT INC | AIZ | 17.51\% | 34.84 | 8 | CF INDUSTRIES HOLDINGS INC | CF | 12.34\% | 193.74 |
| 9 | METLIFE INC | MET | 17.24\% | 30.85 | 9 | NORTHROP GRUMMAN CORP | NOC | 12.32\% | 63.79 |
| 5 | NEWFIELD EXPLORATION CO | NFX | 17.09\% | 29.31 | 2 | JOY GLOBAL INC | JOY | 12.15\% | 56.73 |
| 6 | CONOCOPHILLIPS | COP | 16.52\% | 55.88 | 6 | TERADYNE INC | TER | 12.09\% | 14.06 |
| 11 | MARATHON PETROLEUM CORP | MPC | 15.43\% | 44.92 | 3 | METROPCS COMMUNICATIONS INC | PCS | 12.07\% | 6.05 |
| 6 | PEABODY ENERGY CORP | BTU | 15.09\% | 24.52 | 4 | HALLIBURTON CO | HAL | 11.98\% | 28.39 |
| 21 | LEXMARK INTL INC -CL A | LXK | 14.86\% | 26.58 | 12 | KEYCORP | KEY | 11.89\% | 7.74 |
| 5 | CHESAPEAKE ENERGY CORP | CHK | 14.41\% | 18.60 | 3 | AFLAC INC | AFL | 11.86\% | 42.59 |
| 3 | WESTERN DIGITAL CORP | WDC | 14.27\% | 30.48 | 12 | FREEPORT-MCMORAN COP\&GOLD | FCX | 11.83\% | 34.07 |
| 24 | CAPITAL ONE FINANCIAL CORP | COF | 14.25\% | 54.66 | 2 | DENBURY RESOURCES INC | DNR | 11.71\% | 15.11 |
| 11 | DELL INC | DELL | 14.07\% | 12.51 | 6 | XEROX CORP | XRX | 11.69\% | 7.87 |
| 8 | TESORO CORP | TSO | 13.90\% | 24.96 | 3 | FIFTH THIRD BANCORP | FITB | 11.64\% | 13.40 |
| 39 | AETNA INC | AET | 13.54\% | 38.77 | 7 | WELLPOINT INC | WLP | 11.55\% | 63.79 |
| 4 | PITNEY BOWES INC | PBI | 13.43\% | 14.97 | 4 | APOLLO GROUP INC -CLA | APOL | 11.52\% | 36.19 |
| 10 | CITIGROUP INC | C | 13.39\% | 27.41 | 5 | WESTERN UNION CO | WU | 11.46\% | 16.84 |
| 8 | GAMESTOP CORP | GME | 13.24\% | 18.36 | 8 | VALERO ENERGY CORP | VLO | 11.30\% | 24.15 |
| 12 | COVENTRY HEALTH CARE INC | CVH | 13.21\% | 31.79 | 2 | DIAMOND OFFSHRE DRILLING INC | DO | 10.93\% | 59.13 |
| 9 | CHEVRON CORP | CVX | 13.01\% | 105.50 | New | SYMANTEC CORP | SYMC | 10.81\% | 14.61 |
| 17 | HEWLETT-PACKARD CO | HPQ | 12.98\% | 20.11 | New | HELMERICH \& PAYNE | HP | 10.79\% | 43.48 |
| 15 | JPMORGAN CHASE \& CO | JPM | 12.62\% | 35.73 | New | STAPLES INC | SPLS | 10.73\% | 13.05 |
| 12 | L-3 COMMUNICATIONS HLDGS INC | LLL | 12.61\% | 74.01 | New | HARMAN INTERNATIONAL INDS | HAR | 10.61\% | 39.60 |
| 27 | CORNING INC | GLW | 12.53\% | 12.93 | New | HUMANA INC | HUM | 10.59\% | 77.44 |

## Forward Earnings Yield

Top 50 S\&P 500 Companies By FORWARD EARNINGS YIELD
Earnings Yield: Rolling 12-month Forward EPS divided by month-end price.


868788899091929394959697989900010203040506070809101112


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end May1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for July

| M o. In |  |  | Forward Earnings | Price | Mo <br> In |  |  | Forward Earnings | Price |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn | Company | Ticker | Yield | 06/29/2012 | Scrn | Company | Ticker | Yield | 06/29/2012 |
| 7 | WESTERN DIGITAL CORP | WDC | 28.96\% | 30.48 | 23 | PRUDENTIAL FINANCIAL INC | PRU | 14.79\% | 48.43 |
| 5 | FIRST SOLAR INC | FSLR | 26.50\% | 15.06 | 59 | GANNETT CO | GCI | 14.74\% | 14.73 |
| 23 | HEWLETT-PACKARD CO | HPQ | 21.39\% | 20.11 | 2 | PHILLIPS 66 | PSX | 14.72\% | 33.24 |
| 88 | HARTFORD FINANCIAL SERVICES | HIG | 20.75\% | 17.63 | 12 | MARATHON PETROLEUM CORP | M PC | 14.69\% | 44.92 |
| 15 | GENWORTH FINANCIAL INC | GNW | 19.78\% | 5.66 | 12 | SLM CORP | SLM | 14.32\% | 15.71 |
| 55 | LINCOLN NATIONAL CORP | LNC | 19.56\% | 21.87 | 2 | ADVANCED MICRO DEVICES | AMD | 13.98\% | 5.73 |
| 11 | GOODYEAR TIRE \& RUBBER CO | GT | 18.64\% | 11.81 | 8 | APACHE CORP | APA | 13.81\% | 87.89 |
| 27 | CLIFFS NATURAL RESOURCES INC |  | 18.58\% | 49.29 | 6 | MARATHON OIL CORP | MRO | 13.79\% | 25.57 |
| 9 | GAMESTOP CORP | GME | 17.72\% | 18.36 | New | AETNA INC | AET | 13.73\% | 38.77 |
| 33 | METLIFE INC | MET | 17.58\% | 30.85 | 2 | TERADYNE INC | TER | 13.67\% | 14.06 |
| 18 | BEST BUY COINC | BBY | 17.45\% | 20.96 | 3 | JPMORGAN CHASE \& CO | JPM | 13.49\% | 35.73 |
| 42 | UNUM GROUP | UNM | 16.97\% | 19.13 | 5 | PITNEY BOWES INC | PBI | 13.44\% | 14.97 |
| 45 | ASSURANT INC | AIZ | 16.90\% | 34.84 | 4 | JABIL CIRCUIT INC | JBL | 13.39\% | 20.33 |
| 16 | VALERO ENERGY CORP | VLO | 16.84\% | 24.15 | 2 | JOY GLOBAL INC | JOY | 13.39\% | 56.73 |
| 21 | LEXMARK INTLINC -CLA | LXK | 16.49\% | 26.58 | 9 | CIGNA CORP | Cl | 13.20\% | 44.00 |
| 14 | TESORO CORP | TSO | 16.49\% | 24.96 | 4 | FREEPORT-MCMORAN COP\&GOLD | FCX | 13.17\% | 34.07 |
| 4 | NABORS INDUSTRIES LTD | NBR | 16.01\% | 14.40 | New | WELLPOINT INC | WLP | 12.77\% | 63.79 |
| 27 | FORD MOTOR CO | F | 15.82\% | 9.59 | 12 | PRINCIPAL FINANCIAL GRP INC | PFG | 12.58\% | 26.23 |
| 9 | DELL INC | DELL | 15.79\% | 12.51 | New | LSICORP | LSI | 12.54\% | 6.37 |
| 22 | AFLAC INC | AFL | 15.75\% | 42.59 | 2 | PEABODY ENERGY CORP | BTU | 12.51\% | 24.52 |
| 14 | CITIGROUP INC | C | 15.66\% | 27.41 | New | CATERPILLAR INC | CAT | 12.35\% | 84.91 |
| 13 | OWENS-ILLINOIS INC | O1 | 15.50\% | 19.17 | 6 | CHEVRON CORP | CVX | 12.33\% | 105.50 |
| 12 | DONNELLEY (R R ) \& SONS CO | RRD | 15.49\% | 11.77 | 13 | HARRIS CORP | HRS | 12.32\% | 41.85 |
| 4 | HESS CORP | HES | 15.08\% | 43.45 | 2 | GOLDMAN SACHS GROUP INC | GS | 12.23\% | 95.86 |
| 18 | XEROX CORP | XRX | 14.84\% | 7.87 | New | CAPITAL ONE FINANCIAL CORP | COF | 12.22\% | 54.66 |

## Price/Book Value

## Top 50 S\&P 500 Companies By LOW PRICE/BOOK

Price/Book Value: Month-end price divided by latest reported book value per share.


868788899091929394959697989900010203040506070809101112


The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

Screen for July

| In |  |  | Pricel Price |  |
| :---: | :---: | :---: | :---: | :---: |
| Scrn | Company | Ticker | Book | 06/29/2012 |
| 79 | GENWORTH FINANCIAL INC | GNW | 0.19 | 5.66 |
| 11 | ALPHA NATURAL RESOURCES INC | ANR | 0.26 | 8.71 |
| 46 | HARTFORD FINANCIAL SERVICES | HIG | 0.38 | 17.63 |
| 44 | BANK OF AMERICA CORP | BAC | 0.41 | 8.18 |
| 7 | FIRST SOLAR INC | FSLR | 0.41 | 15.06 |
| 14 | CITIGROUP INC | C | 0.44 | 27.41 |
| 25 | E TRADE FINANCIAL CORP | ETFC | 0.46 | 8.04 |
| 45 | LINCOLN NATIONAL CORP | LNC | 0.47 | 21.87 |
| 30 | MORGAN STANLEY | M S | 0.47 | 14.59 |
| 30 | NRG ENERGY INC | NRG | 0.54 | 17.36 |
| 18 | AMERICAN INTERNATIONAL GROUI |  | 0.56 | 32.09 |
| 33 | METLIFEINC | M ET | 0.56 | 30.85 |
| 6 | WPX ENERGY INC | WPX | 0.57 | 16.18 |
| 39 | ASSURANT INC | AIZ | 0.61 | 34.84 |
| 50 | LEGG MASON INC | LM | 0.65 | 26.37 |
| 26 | PRUDENTIAL FINANCIAL INC | PRU | 0.65 | 48.43 |
| 12 | ALCOA INC | AA | 0.66 | 8.75 |
| 42 | SUNTRUST BANKS INC | STI | 0.66 | 24.23 |
| 38 | UNUM GROUP | UNM | 0.67 | 19.13 |
| 68 | REGIONS FINANCIAL CORP | R F | 0.68 | 6.75 |
| 24 | XL GROUP PLC | XL | 0.68 | 21.04 |
| 11 | GOLDMAN SACHS GROUP INC | GS | 0.69 | 95.86 |
| 33 | BOSTON SCIENTIFIC CORP | BSX | 0.71 | 5.67 |
| 4 | NABORS INDUSTRIES LTD | NBR | 0.72 | 14.40 |
| 18 | HUDSON CITY BANCORP INC | HCBK | 0.73 | 6.37 |
| 3 | METROPCS COMMUNICATIONS INC | PCS | 0.74 | 6.05 |


| In |  |  | Pricel <br> Book |  |
| :---: | :---: | :---: | :---: | :---: |
| Scrn | Company | Ticker |  | 06/29/2012 |
| 27 | JPMORGAN CHASE \& CO | JPM | 0.75 | 35.73 |
| 43 | KEYCORP | KEY | 0.75 | 7.74 |
| 7 | NASDAQ OMX GROUP INC | NDAQ | 0.76 | 22.67 |
| 15 | BANK OF NEW YORK MELLON COR | BK | 0.77 | 21.95 |
| 29 | PEOPLE'S UNITED FINLINC | PBCT | 0.77 | 11.61 |
| 43 | ZIONS BANCORPORATION | ZION | 0.77 | 19.42 |
| 3 | HESS CORP | HES | 0.78 | 43.45 |
| 4 | MICRON TECHNOLOGY INC | M U | 0.80 | 6.31 |
| 2 | GAMESTOP CORP | GME | 0.81 | 18.36 |
| 2 | LEUCADIA NATIONAL CORP | LUK | 0.81 | 21.27 |
| 25 | CME GROUP INC | CME | 0.82 | 268.11 |
| 38 | LOEWS CORP | L | 0.84 | 40.91 |
| 26 | PRINCIPAL FINANCIAL GRP INC | PFG | 0.84 | 26.23 |
| 40 | VALERO ENERGY CORP | VLO | 0.84 | 24.15 |
| 68 | CAPITAL ONE FINANCIAL CORP | COF | 0.86 | 54.66 |
| 2 | UNITED STATES STEEL CORP | X | 0.86 | 20.60 |
| 16 | COMERICA INC | CMA | 0.87 | 30.71 |
| 4 | FRONTIER COMMUNICATIONS COF | FTR | 0.87 | 3.83 |
| 11 | XEROX CORP | XRX | 0.87 | 7.87 |
| 32 | ALLSTATE CORP | ALL | 0.90 | 35.09 |
| New | WELLPOINT INC | WLP | 0.90 | 63.79 |
| 3 | CHESAPEAKE ENERGY CORP | CHK | 0.91 | 18.60 |
| New | CORNING INC | GLW | 0.92 | 12.93 |
| New | FIRST HORIZON NATIONAL CORP | FHN | 0.92 | 8.65 |
| 2 | ROWAN COMPANIES PLC | RDC | 0.92 | 32.33 |
| 12 | SPRINT NEXTEL CORP | S | 0.92 | 3.26 |

## Price/Cash Flow

## Top 50 S\&P 500 Companies By LOW PRICE/CASH FLOW

Price/Cash Flow: Month-end price divided by latest reported cash flow. Cash flow is defined as earnings post extraordinary items plus depreciation.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance


Screen for July

Mo.

| In |  | Price I | Price |  |
| :--- | :--- | :---: | ---: | ---: |
| Scrn. | Company | Ticker | Cash Flo | 06/29/2012 |
|  |  |  |  |  |
| 40 | FORD MOTOR CO | F | 1.48 | 9.59 |
| 167 | RYDER SYSTEM INC | R | 1.70 | 36.01 |
| 18 | FRONTIER COMMUNICATIONS COF FTR | 2.48 | 3.83 |  |
| 9 | NEWFIELD EXPLORATION CO | NFX | 2.62 | 29.31 |
| 10 | METROPCS COMMUNICATIONS INC PCS | 2.63 | 6.05 |  |
| 13 | CABLEVISION SYS CORP -CL A | CVC | 2.89 | 13.29 |
| 5 | NETFLIX INC | NFLX | 2.93 | 68.49 |
| 7 | CHESAPEAKE ENERGY CORP | CHK | 3.13 | 18.60 |
| 5 | PITNEY BOWES INC | PBI | 3.14 | 14.97 |
| 11 | GOODYEAR TIRE \& RUBBER CO | GT | 3.17 | 11.81 |
| 24 | DEVON ENERGY CORP | DVN | 3.33 | 57.99 |
| 12 | NABORS INDUSTRIES LTD | NBR | 3.34 | 14.40 |
| 17 | SAFEWAY INC | SWY | 3.42 | 18.15 |
| 10 | CLIFFS NATURAL RESOURCES INC CLF | 3.44 | 49.29 |  |
| 27 | HESS CORP | HES | 3.49 | 43.45 |
| 45 | MARATHON OIL CORP | MRO | 3.54 | 25.57 |
| 11 | NRG ENERGY INC | NRG | 3.60 | 17.36 |
| 6 | CONOCOPHILLIPS | COP | 3.64 | 55.88 |
| 11 | APACHE CORP | APA | 3.65 | 87.89 |
| 4 | MURPHY OIL CORP | MUR | 3.76 | 50.29 |
| 21 | LEXMARK INTL INC | -CL A | LXK | 3.78 |
| 14 | TESORO CORP | TSO | 3.88 | 24.96 |
| 8 | CENTERPOINT ENERGY INC | CNP | 3.90 | 20.67 |
| 15 | HEWLETT-PACKARD CO | HPQ | 3.92 | 20.11 |
| 7 | QEP RESOURCES INC | QEP | 3.95 | 29.97 |

Mo.

| In |  |  | Price I | Price |
| :--- | :--- | :--- | ---: | ---: |
| Scrn. | Company | Ticker | Cash Flo | 06/29/2012 |

## Price/Free Cash Flow

## Top 50 S\&P 500 Companies by LOW PRICE/FREE CASH FLOW

Price/Free Cash Flow: Month-end price divided by latest reported free cash flow. Free Cash Flow is defined as the earnings after extraordinary items plus depreciation minus capital expenditures.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end May 1986 to month end July 2003. The unshaded portion epresents actual performance since August 2003. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance


| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $4.76 \%$ |
| Last 3 M onths | $-7.61 \%$ |
| Last 6 M onths | $8.30 \%$ |
| Last 12 M onths | $-3.35 \%$ |
| 2012 YTD | $8.30 \%$ |

Screen for July


## Price/Sales

## Top 50 S\&P 500 Companies By LOW PRICE/SALES

Price/Sales: Month-end market value divided by reported sales.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future


Screen for July

Mo.

| In |  | Mkt Val l |  | Price | In |  | Mkt Val I Price |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn. | Company | Ticker | Sales | 06/29/2012 | Scrn. | Company | Ticker | Sales | 06/29/2012 |
| 112 | SAFEWAY INC | swy | 0.10 | 18.15 | 5 | Ryder system inc | R | 0.30 | 36.01 |
| 99 | VALERO ENERGY CORP | VLO | 0.10 | 24.15 | 113 | AUTONATION INC | AN | 0.30 | 35.28 |
| 132 | SUNOCO INC | SUN | 0.11 | 47.50 | 7 | CONOCOPHILLIPS | COP | 0.31 | 55.88 |
| 58 | TESORO CORP | TSO | 0.11 | 24.96 | 32 | PENNEY (J C) CO | JCP | 0.31 | 23.31 |
| 114 | AMERISOURCEBERGEN CORP | ABC | 0.12 | 39.35 | 7 | HEWLETT-PACKARD CO | HPQ | 0.32 | 20.11 |
| 151 | GOODYEAR TIRE \& RUBBER CO | GT | 0.13 | 11.81 | 41 | HUMANA INC | HUM | 0.33 | 77.44 |
| 96 | CARDINAL HEALTH INC | CAH | 0.14 | 42.00 | 12 | HARTFORD FINANCIAL SERVICES | HIG | 0.34 | 17.63 |
| 43 | KROGER CO | KR | 0.14 | 23.19 | 8 | FLUOR CORP | FLR | 0.34 | 49.34 |
| 18 | UNITED STATES STEEL CORP | X | 0.15 | 20.60 | 14 | MURPHY OIL CORP | MUR | 0.34 | 50.29 |
| 79 | SEARS HOLDINGS CORP | SHLD | 0.15 | 59.70 | 9 | WELLPOINT INC | WLP | 0.34 | 63.79 |
| 83 | TYSON FOODS INC -CLA | TSN | 0.17 | 18.83 | 9 | WALGREEN CO | WAG | 0.35 | 29.58 |
| 159 | MCKESSON CORP | MCK | 0.18 | 93.75 | 9 | DELL INC | DELL | 0.36 | 12.51 |
| 33 | DONNELLEY (R R) \& SONS CO | RRD | 0.20 | 11.77 | 45 | COVENTRY HEALTH CARE INC | CVH | 0.36 | 31.79 |
| 11 | MARATHON PETROLEUM CORP | MPC | 0.20 | 44.92 | 3 | STAPLES INC | SPLS | 0.36 | 13.05 |
| 39 | ARCHER-DANIELS-MIDLAND CO | ADM | 0.22 | 29.52 | 2 | ASSURANT INC | AIZ | 0.36 | 34.84 |
| 39 | DEAN FOODS CO | DF | 0.24 | 17.03 | 23 | SAIC INC | SAI | 0.37 | 12.12 |
| 20 | COMPUTER SCIENCES CORP | CSC | 0.24 | 24.82 | 8 | ALCOA INC | AA | 0.37 | 8.75 |
| 2 | ALPHA NATURAL RESOURCES INC | ANR | 0.24 | 8.71 | 3 | HESS CORP | HES | 0.39 | 43.45 |
| 82 | TENET HEALTHCARE CORP | THC | 0.24 | 5.24 | New | AETNA INC | AET | 0.39 | 38.77 |
| 67 | JABIL CIRCUIT INC | JBL | 0.25 | 20.33 | 9 | SYSCO CORP | SYY | 0.42 | 29.81 |
| 104 | WHIRLPOOL CORP | WHR | 0.25 | 61.16 | New | SOUTHWEST AIRLINES | LUV | 0.43 | 9.22 |
| 31 | GAMESTOP CORP | GME | 0.26 | 18.36 | New | OWENS-ILLINOIS INC | OI | 0.43 | 19.17 |
| 143 | FORD MOTOR CO | F | 0.26 | 9.59 | 2 | CABLEVISION SYS CORP -CLA | cVC | 0.43 | 13.29 |
| 13 | GENWORTH FINANCIAL INC | GNW | 0.27 | 5.66 | New | COSTCO WHOLESALE CORP | COST | 0.43 | 95.00 |
| 13 | SPRINT NEXTEL CORP | S | 0.29 | 3.26 | 5 | NRG ENERGY INC | NRG | 0.44 | 17.36 |

## EV / EBITDA

## Top 50 S\&P Industrials Companies by LOW EV/EBITDA

EV/EBITDA: Enterprise Value (Equity Market Capitalization + Long Term Debt + Short Term Debt + Preferred Stock + Minority Interest - Cash \& Cash Equivalents) divided by the latest 4-quarter EBITDA


8687888990919293949596979899000102030405060708091011


| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $5.84 \%$ |
| Last 3 M onths | $-9.71 \%$ |
| Last 6 M onths | $0.69 \%$ |
| Last 12 M onths | $-6.01 \%$ |
| 2012 YTD | $0.69 \%$ |

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end May 1986 to month end September 2001. The unshaded portion represents actual performance since October 2001. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

| Mo. |  |  |  |  | Mo. |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  |  | EV I Price |  | In |  |  | EV I Price |  |
| Scrn | Company | Ticker | EBITD A | 06/29/2012 | Scrn | Company | Ticker | EBITD A | 06/29/2012 |
| 40 | HUMANA INC | HUM | 1.07 | 77.44 | 32 | HESS CORP | HES | 3.68 | 43.45 |
| 4 | FIRST SOLAR INC | FSLR | 2.02 | 15.06 | 11 | DEVRY INC | DV | 3.71 | 30.97 |
| 18 | WELLPOINT INC | WLP | 2.20 | 63.79 | 9 | METROPCS COMMUNICATIONS | INCPCS | 3.73 | 6.05 |
| 32 | LEXMARK INTL INC -CLA | LXK | 2.21 | 26.58 | 39 | AETNA INC | AET | 3.77 | 38.77 |
| 5 | NETFLIX INC | NFLX | 2.48 | 68.49 | 10 | DEVON ENERGY CORP | DVN | 3.84 | 57.99 |
| 4 | MURPHY OIL CORP | MUR | 2.48 | 50.29 | 8 | CF INDUSTRIES HOLDINGS INC | CF | 3.84 | 193.74 |
| 33 | GAMESTOP CORP | GME | 2.51 | 18.36 | 5 | CORNING INC | GLW | 3.87 | 12.93 |
| 106 | CONOCOPHILLIPS | COP | 2.58 | 55.88 | 26 | WASHINGTON POST -CLB | WPO | 3.91 | 373.82 |
| 30 | M OLEX INC | M OLX | 2.86 | 23.94 | 3 | HELMERICH \& PAYNE | HP | 4.04 | 43.48 |
| 5 | ALPHA NATURAL RESOURCES INC | ANR | 2.90 | 8.71 | 11 | GOODYEAR TIRE \& RUBBER CO | G T | 4.11 | 11.81 |
| 27 | APOLLO GROUP INC -CLA | APOL | 3.07 | 36.19 | New | HEWLETT-PACKARD CO | HPQ | 4.18 | 20.11 |
| 36 | COMPUTER SCIENCES CORP | CSC | 3.09 | 24.82 | 2 | DISCOVERY COMMUNICATIONS | INC DISCA | 4.20 | 54.00 |
| 26 | DELL INC | DELL | 3.16 | 12.51 | New | BLOCKH\&R INC | HRB | 4.21 | 15.98 |
| 2 | CHEVRON CORP | CVX | 3.18 | 105.50 | 6 | DONNELLEY (R R ) \& SONS CO | RRD | 4.27 | 11.77 |
| 11 | VIACOM INC | VIAB | 3.18 | 47.02 | 10 | MOSAIC CO | MOS | 4.31 | 54.76 |
| 11 | APACHE CORP | APA | 3.23 | 87.89 | 4 | QEP RESOURCES INC | QEP | 4.33 | 29.97 |
| 14 | TESORO CORP | TSO | 3.28 | 24.96 | 5 | COMCAST CORP | CMCSA | 4.35 | 31.97 |
| 47 | MARATHON OIL CORP | MRO | 3.28 | 25.57 | 2 | NABORS INDUSTRIES LTD | NBR | 4.43 | 14.40 |
| 6 | NEWFIELD EXPLORATION CO | NFX | 3.30 | 29.31 | New | TYSON FOODS INC -CLA | TSN | 4.44 | 18.83 |
| 11 | MARATHON PETROLEUM CORP | M PC | 3.33 | 44.92 | New | HALLIBURTON CO | HAL | 4.47 | 28.39 |
| 18 | BEST BUY COINC | BBY | 3.33 | 20.96 | 2 | CISCO SYSTEMS INC | CSCO | 4.50 | 17.17 |
| 14 | VALERO ENERGY CORP | VLO | 3.50 | 24.15 | 3 | SANDISK CORP | SNDK | 4.54 | 36.48 |
| 2 | WESTERN DIGITAL CORP | WDC | 3.51 | 30.48 | 2 | CLIFFS NATURAL RESOURCES | INC CLF | 4.56 | 49.29 |
| 18 | FREEPORT-MCMORAN COP\&GOLD | FCX | 3.63 | 34.07 | 2 | EXXON MOBIL CORP | XOM | 4.60 | 85.57 |
| 29 | TIME WARNER INC | TWX | 3.68 | 38.50 | New | DENBURY RESOURCES INC | DNR | 4.62 | 15.11 |

## Free Cash Flow / EV

Top Decile S\&P 500 Companies by HIGH Free Cash Flow / EV
Free Cash Flow / EV: Free Cash Flow divided by Enterprise Value (Equity Market Capitalization + Long Term Debt + Short Term Debt + Preferred Stock + Minority Interest - Cash \& Cash Equivalents). Free Cash Flow is defined as the earnings after extraordinary items plus depreciation minus capital expenditures.
 introduction and is not intended to be indicative of future performance
Screen for July

| Mo. In |  |  |  | Price | Mo. In |  |  |  | Price |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn.* | Company | Ticker | FCFIEV | 06/29/2012 | Scrn.* | Company | Ticker | FCF/EV | 06/29/2012 |
| 20 | HUMANA INC | HUM | 0.48 | 77.44 | 8 | NORTHROP GRUMMAN CORP | NOC | 0.12 | 63.79 |
| 9 | NETFLIX INC | NFLX | 0.33 | 68.49 | 15 | KLA-TENCOR CORP | KLAC | 0.12 | 49.25 |
| 20 | LEXMARK INTL INC -CL A | LXK | 0.23 | 26.58 | 2 | Pitney Bowes Inc | PBI | 0.12 | 14.97 |
| 20 | WELLPOINT INC | WLP | 0.22 | 63.79 | 8 | TESORO CORP | TSO | 0.12 | 24.96 |
| 5 | PRINCIPAL FINANCIAL GRP INC | PFG | 0.21 | 26.23 | 6 | XEROX CORP | XRX | 0.11 | 7.87 |
| 20 | DELL INC | DELL | 0.20 | 12.51 | 20 | MICROSOFT CORP | MSFT | 0.11 | 30.59 |
| 5 | Ford Motor Co | F | 0.19 | 9.59 | 14 | CA INC | CA | 0.11 | 27.09 |
| 7 | GAMESTOP CORP | GME | 0.18 | 18.36 | New | STAPLES INC | SPLS | 0.11 | 13.05 |
| 6 | APOLLO GROUP INC -CL A | APOL | 0.18 | 36.19 | 5 | WESTERN UNION CO | WU | 0.11 | 16.84 |
| 17 | DISCOVERY COMMUNICATIONS | DISCA | 0.17 | 54.00 | 5 | GANNETT CO | GCI | 0.11 | 14.73 |
| New | SYMANTEC CORP | SYMC | 0.16 | 14.61 | 4 | NVIDIA CORP | NVDA | 0.11 | 13.82 |
| 11 | MOLEX INC | MOLX | 0.16 | 23.94 | 6 | GENERAL DYNAMICS CORP | GD | 0.10 | 65.96 |
| 12 | COVENTRY HEALTH CARE INC | CVH | 0.16 | 31.79 | 14 | APPLIED MATERIALS INC | AMAT | 0.10 | 11.45 |
| 12 | LSI CORP | LSI | 0.16 | 6.37 | 5 | INTERPUBLIC GROUP OF COS | IPG | 0.10 | 10.85 |
| 20 | WESTERN DIGITAL CORP | WDC | 0.15 | 30.48 | 12 | RAYTHEON CO | RTN | 0.10 | 56.59 |
| 20 | TERADYNE INC | TER | 0.15 | 14.06 | New | PARKER-HANNIFIN CORP | PH | 0.10 | 76.88 |
| 2 | FOREST LABORATORIES -CLA | FRX | 0.15 | 34.99 | 5 | LILLY (ELI) \& CO | LLY | 0.10 | 42.91 |
| 7 | CISCO SYSTEMS INC | CSCO | 0.15 | 17.17 | 9 | BMC SOFTWARE INC | BMC | 0.10 | 42.68 |
| 5 | AETNA INC | AET | 0.14 | 38.77 | New | AGILENT TECHNOLOGIES INC | A | 0.10 | 39.24 |
| 8 | CF INDUSTRIES HOLDINGS INC | CF | 0.14 | 193.74 | New | SANDISK CORP | SNDK | 0.10 | 36.48 |
| 2 | MARATHON PETROLEUM CORP | MPC | 0.13 | 44.92 | New | HEWLETT-PACKARD CO | HPQ | 0.09 | 20.11 |
| New | HARMAN INTERNATIONAL INDS | HAR | 0.13 | 39.60 | New | Oracle Corp | ORCL | 0.09 | 29.70 |
|  |  |  |  |  | 2 | L-3 COMMUNICATIONS HLDGS | LLL | 0.09 | 74.01 |

[^21]
## Dividend Yield

## Top 50 S\&P 500 Companies by DIVIDEND YIELD

Dividend Yield: Indicated dividend divided by month-end price.



| Absolute Returns |  |
| :--- | :--- |
| Last 1 M onth | $5.29 \%$ |
| Last 3 Months | $2.26 \%$ |
| Last 6 M onths | $4.18 \%$ |
| Last 12 M onths | $9.99 \%$ |
| 2012 YTD | $4.18 \%$ |

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded
portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for July

| Mo. |  |  |  |  |
| :--- | :--- | :--- | :--- | ---: |
| In |  |  |  | Price |
| Scrn | Company | Ticker | Yield | $06 / 29 / 2012$ |
|  |  |  |  |  |
| 48 | FRONTIER COMMUNICATIONS COF FTR | $10.44 \%$ | 3.83 |  |
| 72 | WINDSTREAM CORP | WIN | $10.35 \%$ | 9.66 |
| 41 | PITNEY BOWES INC | PBI | $10.02 \%$ | 14.97 |
| 45 | DONNELLEY (R R) \& SONS CO | RRD | $8.84 \%$ | 11.77 |
| 48 | CENTURYLINK INC | CTL | $7.34 \%$ | 39.49 |
| 10 | AVON PRODUCTS | AVP | $5.68 \%$ | 16.21 |
| 31 | EXELON CORP | EXC | $5.58 \%$ | 37.62 |
| 40 | PEPCO HOLDINGS INC | POM | $5.52 \%$ | 19.57 |
| 26 | PEOPLE'S UNITED FINL INC | PBCT | $5.51 \%$ | 11.61 |
| 5 | GANNETT CO | GCI | $5.43 \%$ | 14.73 |
| 44 | LEGGETT \& PLATT INC | LEG | $5.30 \%$ | 21.13 |
| 95 | REYNOLDS AMERICAN INC | RAI | $5.26 \%$ | 44.87 |
| 35 | PPL CORP | PPL | $5.18 \%$ | 27.81 |
| 42 | HEALTH CARE REIT INC | HCN | $5.08 \%$ | 58.30 |
| 2 | CLIFFS NATURAL RESOURCES INC CLF | $5.07 \%$ | 49.29 |  |
| 11 | HUDSON CITY BANCORP INC | HCBK | $5.02 \%$ | 6.37 |
| 7 | BLOCK H \& R INC | HRB | $5.01 \%$ | 15.98 |
| 40 | AT\&T INC | T | $4.94 \%$ | 35.66 |
| 22 | ENTERGY CORP | ETR | $4.89 \%$ | 67.89 |
| 41 | TECO ENERGY INC | TE | $4.87 \%$ | 18.06 |
| 41 | INTEGRYS ENERGY GROUP INC | TEG | $4.78 \%$ | 56.87 |
| 40 | AMEREN CORP | AEE | $4.77 \%$ | 33.54 |
| 7 | AGL RESOURCES INC | GAS | $4.75 \%$ | 38.75 |
| 52 | ALTRIA GROUP INC | MO | $4.75 \%$ | 34.55 |
| 3 | CONOCOPHILIPS | COP | $4.72 \%$ | 55.88 |


| Mo. |  |  |  |  |
| :--- | :--- | :--- | :--- | ---: |
| In |  |  |  | Price |
| Scrn | Company | Ticker | Yield | $06 / 29 / 2012$ |
|  |  |  |  |  |
| 40 | AMERICAN ELECTRIC POWER CO | AEP | $4.71 \%$ | 39.90 |
| 39 | LORILLARD INC | LO | $4.70 \%$ | 131.95 |
| 3 | NYSE EURONEXT | NYX | $4.69 \%$ | 25.58 |
| 10 | LOCKHEED MARTIN CORP | LMT | $4.59 \%$ | 87.08 |
| 39 | LILLY (ELI) \& CO | LLY | $4.57 \%$ | 42.91 |
| 45 | HCP INC | HCP | $4.53 \%$ | 44.15 |
| 2 | CABLEVISION SYS CORP -CL A | CVC | $4.51 \%$ | 13.29 |
| 2 | LEXMARK INTL INC -CL A | LXK | $4.51 \%$ | 26.58 |
| 39 | VERIZON COMMUNICATIONS INC | VZ | $4.50 \%$ | 44.44 |
| 38 | FIRSTENERGY CORP | FE | $4.47 \%$ | 49.19 |
| 40 | DUKE ENERGY CORP | DUK | $4.42 \%$ | 69.18 |
| 15 | FEDERATED INVESTORS INC | FII | $4.39 \%$ | 21.85 |
| 8 | PUBLIC SERVICE ENTRP GRP INC | PEG | $4.37 \%$ | 32.50 |
| New | HASBRO INC | HAS | $4.25 \%$ | 33.87 |
| 4 | WASTE MANAGEMENT INC | WM | $4.25 \%$ | 33.40 |
| 39 | SOUTHERN CO | SO | $4.23 \%$ | 46.30 |
| 2 | MICROCHIP TECHNOLOGY INC | MCHP | $4.23 \%$ | 33.08 |
| 2 | PLUM CREEK TIMBER CO INC | PCL | $4.23 \%$ | 39.70 |
| 42 | CINCINNATI FINANCIAL CORP | CINF | $4.23 \%$ | 38.07 |
| New | DTE ENERGY CO | DTE | $4.18 \%$ | 59.33 |
| New | WILLIAMS COS INC | WMB | $4.16 \%$ | 28.82 |
| 39 | SCANA CORP | SCG | $4.14 \%$ | 47.84 |
| 40 | PROGRESS ENERGY INC | PGN | $4.12 \%$ | 60.17 |
| New | CMS ENERGY CORP | CMS | $4.09 \%$ | 23.50 |
| 4 | PAYCHEX INC | PAYX | $4.08 \%$ | 31.41 |

## Dividend Growth

## Top 50 S\&P 500 Companies By Dividend Growth

Dividend Growth: The growth between trailing 4-quarter total common dividends and year-ago trailing 4-quarter total common dividends.



Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end Mary 1986 to month end December 2004. The unshaded portion represents actual performance since January 2005. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for July

| Mo. |  |
| :--- | :--- |
| In |  |
| Scrn | Company |
|  |  |
| 12 | AETNA INC |
| 3 | HARMAN INTERNATIONAL INDS |
| 12 | JPMORGAN CHASE \& CO |
| 2 | WHOLE FOODS MARKET INC |
| 2 | CISCO SYSTEMS INC |
| 9 | SUNTRUST BANKS INC |
| 3 | FLIR SYSTEMS INC |
| 3 | ST JUDE MEDICAL INC |
| 3 | FIRST HORIZON NATIONAL CORP |
| 3 | WELLPOINT INC |
| 2 | KOHL'S CORP |
| 5 | HOST HOTELS \& RESORTS INC |
| 3 | INTERPUBLIC GROUP OF COS |
| 15 | STATE STREET CORP |
| 9 | HUNTINGTON BANCSHARES |
| 12 | PNC FINANCIAL SVCS GROUP INC |
| 15 | FIFTH THIRD BANCORP |
| 12 | KEYCORP |
| 5 | FRANKLIN RESOURCES INC |
| 8 | CF INDUSTRIES HOLDINGS INC |
| 15 | LINCOLN NATIONAL CORP |
| 10 | DISCOVER FINANCIAL SVCS INC |
| 6 | GANNETT CO |
| 8 | MACY'S INC |
| 3 | AMPHENOL CORP |

## Share Repurchase

## Top 50 S\&P 500 Companies by Large Share Repurchase

Share Repurchase: The year-to-year change in shares outstanding.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 2004. The unshaded portion represents actual performance since January 2005. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for July

| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  |  | Share | Price |
| Scrn | Company | Ticker | Repurchase | $06 / 29 / 2012$ |
|  |  |  |  |  |
| 12 | SAFEWAY INC | SWY | $-28.3 \%$ | 18.15 |
| 2 | WYNN RESORTS LTD | WYNN | $-19.6 \%$ | 103.72 |
| 13 | APOLLO GROUP INC -CL A | APOL | $-17.7 \%$ | 36.19 |
| 5 | IRON MOUNTAIN INC | IRM | $-15.6 \%$ | 32.96 |
| 6 | AMGEN INC | AMGN | $-15.5 \%$ | 72.91 |
| 10 | BIG LOTS INC | BIG | $-15.4 \%$ | 40.79 |
| 3 | MOTOROLA SOLUTIONS INC | MSI | $-14.9 \%$ | 48.11 |
| 6 | AUTONATION INC | AN | $-14.7 \%$ | 35.28 |
| 13 | KOHL'S CORP | KSS | $-14.5 \%$ | 45.49 |
| 25 | GAP INC | GPS | $-13.7 \%$ | 27.36 |
| 5 | TENET HEALTHCARE CORP | THC | $-13.6 \%$ | 5.24 |
| 8 | SUNOCO INC | SUN | $-12.6 \%$ | 47.50 |
| 11 | WYNDHAM WORLDWIDE CORP | WYN | $-11.1 \%$ | 52.74 |
| 32 | DIRECTV | DTV | $-11.0 \%$ | 48.82 |
| 4 | LEXMARK INTL INC -CL A | LXK | $-10.2 \%$ | 26.58 |
| 5 | INGERSOLL-RAND PLC | IR | $-10.0 \%$ | 42.18 |
| 2 | LOWE'S COMPANIES INC | LOW | $-9.9 \%$ | 28.44 |
| 7 | BEST BUY CO INC | BBY | $-9.4 \%$ | 20.96 |
| 8 | URBAN OUTFITTERS INC | URBN | $-9.3 \%$ | 27.59 |
| 2 | CONSTELLATION BRANDS | STZ | $-9.3 \%$ | 27.06 |
| 9 | NORTHROP GRUMMAN CORP | NOC | $-9.3 \%$ | 63.79 |
| 4 | PATTERSON COMPANIES INC | PDCO | $-9.2 \%$ | 34.47 |
| 26 | ASSURANT INC | AIZ | $-8.9 \%$ | 34.84 |
| 8 | HARRIS CORP | $-8.6 \%$ | 41.85 |  |
| New | KROGER CO | HRS | $-8.5 \%$ | 23.19 |

Mo.

| In | Share | Price |
| :--- | ---: | ---: |
| Scrn Company | Ticker | Repurchase |


| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $5.38 \%$ |
| Last 3 Months | $-1.68 \%$ |
| Last 6 Months | $8.68 \%$ |
| Last 12 M onths | $5.92 \%$ |
| 2012 YTD | $8.68 \%$ |



# Relative Strength - 30wk/75wk Moving Average 

## Top 50 S\&P 500 Companies By RELATIVE STRENGTH.

Relative Strength: The ratio of the 30 -week moving average of price to the $\mathbf{7 5}$-week moving average.


Source: BofA Merrill Lynch US Ouantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end August 1995. The unshaded
portion represents actual performance since September 1995. Back tested performance is hypothetical in nature and reflects application of the screen prior to its portion represents actual performance since September 1995. Back tes introduction and is not intended to be indicative of future performance

| Mo. In |  |  | Relative | Price | M o. In |  |  | Relative | Price |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn. | Company | Ticker | Strength | 06/29/2012 | Scrn. | Company | Ticker | Strength | 06/29/2012 |
| New | MONSTER BEVERAGE CORP | MNST | 1.30 | 71.20 | 10 | VF CORP | VFC | 1.16 | 133.45 |
| 2 | ALEXION PHARMACEUTICALS INC | ALXN | 1.28 | 99.30 | 15 | DISCOVER FINANCIAL SVCS INC | DFS | 1.15 | 34.58 |
| 10 | ROSS STORES INC | ROST | 1.24 | 62.47 | 3 | AIRGAS INC | ARG | 1.14 | 84.01 |
| 7 | DOLLAR TREE INC | DLTR | 1.23 | 53.80 | 3 | YUM BRANDS INC | YUM | 1.14 | 64.42 |
| 7 | APPLE INC | AAPL | 1.22 | 584.00 | 9 | AUTOZONE INC | AZO | 1.14 | 367.17 |
| 5 | EXPEDIA INC | EXPE | 1.22 | 48.07 | 3 | WILLIAMS COS INC | WM B | 1.13 | 28.82 |
| 7 | O'REILLY AUTOMOTIVE INC | ORLY | 1.22 | 83.77 | 5 | PHILIP MORRIS INTERNATIONAL | PM | 1.13 | 87.26 |
| 7 | TJX COMPANIES INC | TJX | 1.21 | 42.93 | 5 | SIMON PROPERTY GROUP INC | SPG | 1.13 | 155.66 |
| 3 | LENNAR CORP | LEN | 1.21 | 30.91 | 2 | PRICELINE.COM INC | PCLN | 1.13 | 664.52 |
| 4 | WYNDHAM WORLDWIDE CORP | WYN | 1.21 | 52.74 | 16 | CBS CORP | CBS | 1.13 | 32.78 |
| 8 | INTUITIVE SURGICAL INC | ISRG | 1.21 | 553.79 | 2 | CINTAS CORP | CTAS | 1.13 | 38.61 |
| 8 | FASTENAL CO | FAST | 1.20 | 40.31 | New | SUNOCOINC | SUN | 1.13 | 47.50 |
| 7 | VISA INC | V | 1.19 | 123.63 | New | CROWN CASTLE INTL CORP | CCI | 1.13 | 58.66 |
| 8 | MACY'S INC | M | 1.19 | 34.35 | 2 | FMC CORP | FMC | 1.12 | 53.48 |
| 10 | STARBUCKS CORP | SBUX | 1.19 | 53.32 | New | GAP INC | GPS | 1.12 | 27.36 |
| 10 | MASTERCARD INC | MA | 1.19 | 430.11 | New | EQUIFAX INC | EFX | 1.12 | 46.60 |
| 13 | BIOGEN IDEC INC | BIIB | 1.19 | 144.38 | 2 | CVS CAREMARK CORP | CVS | 1.12 | 46.73 |
| 8 | GRAINGER (W W) INC | GWW | 1.18 | 191.24 | 12 | ONEOK INC | OKE | 1.12 | 42.31 |
| 15 | CHIPOTLE MEXICAN GRILL INC | CMG | 1.18 | 379.95 | 4 | NIKE INC | NKE | 1.12 | 87.78 |
| 2 | SHER WIN-WILLIAM S CO | SHW | 1.18 | 132.35 | New | AMGEN INC | AM GN | 1.12 | 72.91 |
| 4 | HOME DEPOT INC | HD | 1.17 | 52.99 | 4 | INTEL CORP | INTC | 1.12 | 26.65 |
| 2 | D R HORTON INC | DHI | 1.17 | 18.38 | New | CERNER CORP | CERN | 1.12 | 82.66 |
| New | PULTEGROUP INC | PHM | 1.16 | 10.70 | 4 | CELGENE CORP | CELG | 1.12 | 64.16 |
| 17 | WHOLE FOODS MARKET INC | WFM | 1.16 | 95.32 | 10 | LORILLARDINC | LO | 1.12 | 131.95 |
| 8 | GOODRICH CORP | GR | 1.16 | 126.90 | New | LOWE'S COMPANIES INC | LOW | 1.12 | 28.44 |

## Relative Strength - 5wk/30wk Moving Average <br> Top 50 S\&P 500 Companies By 5W/30W Price Moving Average




Source: BofA Meriill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

Mo.

| In |  | Price |  |
| :--- | :--- | ---: | ---: |
| Scrn. Company | Ticker | $5 W / 30 W$ | $06 / 29 / 2012$ |


| Absolute Returns |  |
| :--- | ---: |
| Last 1 Month | $4.35 \%$ |
| Last 3 M onths | $-6.47 \%$ |
| Last 6 M onths | $1.06 \%$ |
| Last 12 Months | $-4.11 \%$ |
| 2012 YTD | $1.06 \%$ |


|  |  |  |  |  |
| :--- | :--- | :--- | :--- | ---: |
| 2 | DEAN FOODS CO | DF | 1.3 | 17.03 |
| 2 | TRIPADVISOR INC | TRIP | 1.3 | 44.69 |
| New | MONSTER BEVERAGE CORP | MNST | 1.2 | 71.20 |
| New | EXPEDIA INC | EXPE | 1.2 | 48.07 |
| 2 | EDWARDS LIFESCIENCES CORP | EW | 1.2 | 103.30 |
| 4 | SHERWIN-WILLIAMS CO | SHW | 1.2 | 132.35 |
| 2 | SCRIPPS NETWORKS INTERACTIVE SNI | 1.2 | 56.86 |  |
| 4 | ROSS STORES INC | ROST | 1.2 | 62.47 |
| New | SPRINT NEXTEL CORP | S | 1.2 | 3.26 |
| 2 | EBAY INC | EBAY | 1.1 | 42.01 |
| 2 | DOLLAR TREE INC | DLTR | 1.1 | 53.80 |
| 7 | WYNDHAM WORLDWIDE CORP | WYN | 1.1 | 52.74 |
| 2 | WHOLE FOODS MARKET INC | WFM | 1.1 | 95.32 |
| 2 | FAMILY DOLLAR STORES | FDO | 1.1 | 66.48 |
| 4 | TJX COMPANIES INC | TJX | 1.1 | 42.93 |
| 2 | SUNOCO INC | SUN | 1.1 | 47.50 |
| 2 | ALEXION PHARMACEUTICALS INC | ALXN | 1.1 | 99.30 |
| 4 | GAP INC | GPS | 1.1 | 27.36 |
| New | COOPER INDUSTRIES PLC | CBE | 1.1 | 68.18 |
| 2 | CERNER CORP | CERN | 1.1 | 82.66 |
| 2 | BMC SOFTWARE INC | BMC | 1.1 | 42.68 |
| 2 | SEMPRA ENERGY | SRE | 1.1 | 68.88 |
| 4 | TERADATA CORP | TDC | 1.1 | 72.01 |
| New | Disney (Walt) Co | DIS | 1.1 | 48.50 |
| 5 | Apple Inc | AAPL | 1.1 | 584.00 |


| $\begin{aligned} & \text { Mo. } \\ & \text { In } \end{aligned}$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Scrn. | Company | Ticker | 5W/30W | 06/29/2012 |
| 2 | AMAZON.COM INC | AMZN | 1.1 | 228.35 |
| 5 | REGIONS FINANCIAL CORP | RF | 1.1 | 6.75 |
| New | AT\&T INC | T | 1.1 | 35.66 |
| New | BIOGEN IDEC INC | BIIB | 1.1 | 144.38 |
| 7 | LENNAR CORP | LEN | 1.1 | 30.91 |
| 6 | PULTEGROUP INC | PHM | 1.1 | 10.70 |
| 2 | CROWN CASTLE INTL CORP | CCI | 1.1 | 58.66 |
| 7 | D R HORTON INC | DHI | 1.1 | 18.38 |
| 4 | DISCOVER FINANCIAL SVCS INC | DFS | 1.1 | 34.58 |
| New | WAL-MART STORES INC | WMT | 1.1 | 69.72 |
| New | beam inc | BEAM | 1.1 | 62.49 |
| 2 | PPG INDUSTRIES INC | PPG | 1.1 | 106.12 |
| New | WISCONSIN ENERGY CORP | WEC | 1.1 | 39.57 |
| 2 | WATSON PHARMACEUTICALS IN | WPI | 1.1 | 73.99 |
| New | HERSHEY CO | HSY | 1.1 | 72.03 |
| 2 | ALLSTATE CORP | ALL | 1.1 | 35.09 |
| 3 | DISCOVERY COMMUNICATIONS | DISCA | 1.1 | 54.00 |
| New | ALTRIA GROUP INC | MO | 1.1 | 34.55 |
| New | COMCAST CORP | CMCSA | 1.1 | 31.97 |
| New | VERIZON COMMUNICATIONS IN( |  | 1.1 | 44.44 |
| New | HOME DEPOT INC | HD | 1.1 | 52.99 |
| 2 | EQUIFAX INC | EFX | 1.1 | 46.60 |
| New | KIMBERLY-CLARK CORP | KMB | 1.1 | 83.77 |
| New | BROWN-FORMAN -CLB | BF.B | 1.1 | 96.85 |
| New | NEXTERA ENERGY INC | NEE | 1.1 | 68.81 |

# Relative Strength - 10wk/40wk Moving Average <br> Top 50 S\&P 500 Companies By 10W/40W Price Moving Average 



Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance


| Absolute Returns |  |
| :--- | ---: |
| Last 1 Month | $3.30 \%$ |
| Last 3 M onths | $-6.27 \%$ |
| Last 6 M onths | $2.22 \%$ |
| Last 12 Months | $-6.17 \%$ |
| 2012 YTD | $2.22 \%$ |

Screen for July

Mo.

| In | Price |  |
| :--- | ---: | ---: |
| Scrn. Company | Ticker | 10W/40W |
| $06 / 29 / 2012$ |  |  |


|  |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| New | MONSTER BEVERAGE CORP | MNST | 1.3 | 71.20 |
| 2 | DEAN FOODS CO | DF | 1.3 | 17.03 |
| 5 | PULTEGROUP INC | PHM | 1.3 | 10.70 |
| 6 | SHERWIN-WILLIAMS CO | SHW | 1.2 | 132.35 |
| 6 | LENNAR CORP | LEN | 1.2 | 30.91 |
| 4 | REGIONS FINANCIAL CORP | RF | 1.2 | 6.75 |
| 6 | WYNDHAM WORLDWIDE CORP | WYN | 1.2 | 52.74 |
| 4 | GAP INC | GPS | 1.2 | 27.36 |
| 9 | ROSS STORES INC | ROST | 1.2 | 62.47 |
| 6 | DR HORTON INC | DHI | 1.2 | 18.38 |
| New | TRIPADVISOR INC | TRIP | 1.2 | 44.69 |
| 10 | TJX COMPANIES INC | TJX | 1.2 | 42.93 |
| 5 | Apple InC | AAPL | 1.2 | 584.00 |
| New | SCRIPPS NETWORKS INTERACTIVE SNI | 1.2 | 56.86 |  |
| 5 | MASCO CORP | MAS | 1.2 | 13.87 |
| 2 | EBAY INC | EBAY | 1.2 | 42.01 |
| New | SUNOCO INC | SUN | 1.2 | 47.50 |
| New | EDWARDS LIFESCIENCES CORP | EW | 1.2 | 103.30 |
| 4 | DISCOVER FINANCIAL SVCS INC | DFS | 1.2 | 34.58 |
| 2 | DOLLAR TREE INC | DLTR | 1.2 | 53.80 |
| 3 | PRICELINE.COM INC | PCLN | 1.2 | 664.52 |
| 2 | ALEXION PHARMACEUTICALS INC | ALXN | 1.2 | 99.30 |
| 10 | O'REILLY AUTOMOTIVE INC | ORLY | 1.2 | 83.77 |
| 3 | AMERICAN INTERNATIONAL GROUIAIG | 1.2 | 32.09 |  |
| 3 | TERADATA CORP | TDC | 1.1 | 72.01 |


| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  |  |  | Price |
| Scrn. | Com pany | Ticker | 10WI40W | $06 / 29 / 2012$ |
|  |  |  |  |  |
| 7 | HOME DEPOT INC | HD | 1.1 | 52.99 |
| New | WHOLE FOODS MARKET INC | WFM | 1.1 | 95.32 |
| New | CROWN CASTLE INTL CORP | CCI | 1.1 | 58.66 |
| New | FAMILY DOLLAR STORES | FDO | 1.1 | 66.48 |
| New | PPG INDUSTRIES INC | PPG | 1.1 | 106.12 |
| New | Disney (Walt) Co | DIS | 1.1 | 48.50 |
| 2 | INGERSOLL-RAND PLC | IR | 1.1 | 42.18 |
| 2 | EQUIFAX INC | EFX | 1.1 | 46.60 |
| 2 | ALLSTATE CORP | ALL | 1.1 | 35.09 |
| New | BIOGEN IDEC INC | BIIB | 1.1 | 144.38 |
| New | CERNER CORP | CERN | 1.1 | 82.66 |
| 12 | INTUITIVE SURGICAL INC | ISRG | 1.1 | 553.79 |
| 2 | DISCOVERY COMMUNICATIONS | DISCA | 1.1 | 54.00 |
| 3 | HARLEY-DAVIDSON INC | HOG | 1.1 | 45.73 |
| New | SEMPRA ENERGY | SRE | 1.1 | 68.88 |
| New | VERISIGN INC | VRSN | 1.1 | 43.57 |
| 3 | CBS CORP | CBS | 1.1 | 32.78 |
| 2 | FIDELITY NATIONAL INFO SVCS | FIS | 1.1 | 34.08 |
| 3 | FMC CORP | FMC | 1.1 | 53.48 |
| 3 | PERKINELMER INC | PKI | 1.1 | 25.80 |
| 2 | MARRIOTT INTL INC | MAR | 1.1 | 39.20 |
| 11 | STARBUCKS CORP | SBUX | 1.1 | 53.32 |
| 4 | COMCAST CORP | CMCSA | 1.1 | 31.97 |
| 5 | BB\&T CORP | BBT | 1.1 | 30.85 |
| New | COOPER INDUSTRIES PLC | CBE | 1.1 | 68.18 |
|  |  |  |  |  |

## Price to Moving Average (200-Day)

Top 50 S\&P 500 Companies By Price to 200-Day Moving Average


Source: BofA Merril Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

Screen for July

Mo.

| In |  |  |  | Price |
| :--- | :--- | :--- | ---: | ---: |
| Scrn. Company | Ticker | Price/200D | 06/29/2012 |  |
|  |  |  |  |  |
| 2 | DEAN FOODS CO | DF | 1.5 | 17.03 |
| 6 | PULTEGROUP INC | PHM | 1.4 | 10.70 |
| 7 | LENNAR CORP | LEN | 1.4 | 30.91 |
| 2 | EDWARDS LIFESCIENCES CORP | EW | 1.4 | 103.30 |
| 7 | D R HORTON INC | DHI | 1.3 | 18.38 |
| New | CONSTELLATION BRANDS | STZ | 1.3 | 27.06 |
| 6 | SHERWIN-WILLIAM S CO | SHW | 1.3 | 132.35 |
| 4 | REGIONS FINANCIAL CORP | RF | 1.3 | 6.75 |
| 2 | TRIPADVISOR INC | TRIP | 1.3 | 44.69 |
| 8 | WYNDHAM WORLDWIDE CORP | WYN | 1.3 | 52.74 |
| New | MONSTER BEVERAGE CORP | MNST | 1.3 | 71.20 |
| 2 | ALEXION PHARMACEUTICALS INC | ALXN | 1.3 | 99.30 |
| New | SPRINT NEXTEL CORP | S | 1.2 | 3.26 |
| 2 | SCRIPPS NETWORKS INTERACTIVE SNI | 1.2 | 56.86 |  |
| 4 | MASCO CORP | MAS | 1.2 | 13.87 |
| 5 | GAP INC | GPS | 1.2 | 27.36 |
| New | DAVITA INC | DVA | 1.2 | 98.21 |
| 2 | WHOLE FOODS MARKET INC | WFM | 1.2 | 95.32 |
| 2 | Disney (Walt) Co | DIS | 1.2 | 48.50 |
| 10 | TJX COMPANIES INC | TJX | 1.2 | 42.93 |
| 5 | DISCOVER FINANCIAL SVCS INC | DFS | 1.2 | 34.58 |
| 2 | BIOGEN IDEC INC | BIIB | 1.2 | 144.38 |
| 3 | EBAY INC | EBAY | 1.2 | 42.01 |
| 3 | DOLLAR TREE INC | DLTR | 1.2 | 53.80 |
| New | COMCAST CORP | CMCSA | 1.2 | 31.97 |

Mo.
In
Ticker Price/200D 06/29/2012
Scrn. Company Ticker Price/200D 06/29/2012

|  |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| New | NEWS CORP | NWSA | 1.2 | 22.29 |
| 3 | CROWN CASTLE INTL CORP | CCI | 1.2 | 58.66 |
| New | VERISIGN INC | VRSN | 1.2 | 43.57 |
| 6 | Apple Inc | AAPL | 1.2 | 584.00 |
| New | BROWN-FORMAN -CL B | BF.B | 1.2 | 96.85 |
| 7 | HOME DEPOT INC | HD | 1.2 | 52.99 |
| New | AMERICAN INTERNATIONAL GR(AIG | 1.2 | 32.09 |  |
| New | MARATHON PETROLEUM CORP MPC | 1.2 | 44.92 |  |
| 10 | ROSS STORES INC | ROST | 1.2 | 62.47 |
| New | TERADATA CORP | TDC | 1.2 | 72.01 |
| 2 | SEMPRA ENERGY | SRE | 1.2 | 68.88 |
| 3 | SUNOCO INC | SUN | 1.2 | 47.50 |
| New | DISCOVERY COMMUNICATIONS | DISCA | 1.2 | 54.00 |
| 3 | CERNER CORP | CERN | 1.2 | 82.66 |
| New | PERRIGO CO | PRGO | 1.2 | 117.93 |
| 2 | ALLSTATE CORP | ALL | 1.2 | 35.09 |
| 2 | CINCINNATIFINANCIAL CORP | CINF | 1.2 | 38.07 |
| New | CITRIX SYSTEMS INC | CTXS | 1.2 | 83.94 |
| New | MCCORMICK \& CO INC | MKC | 1.2 | 60.65 |
| 3 | PPG INDUSTRIES INC | PPG | 1.2 | 106.12 |
| 2 | FIDELITY NATIONAL INFO SVCS | FIS | 1.2 | 34.08 |
| New | WAL-MART STORES INC | WM | 1.2 | 69.72 |
| New | RAYTHEON CO | RTN | 1.2 | 56.59 |
| New | HERSHEY CO | HSY | 1.2 | 72.03 |
| New | WEYERHAEUSER CO | WY | 1.2 | 22.36 |

Exhibit

## Price Return - 12-Month Performance

Top 50 S\&P 500 Companies By 12-month price return.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

| Mo. In Scrn* |  |  | Price | Price 06/29/2012 | Mo. In Scrn* |  |  | Price | Price |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Company | Ticker |  | 06/29/2012 | Scrn.* | Company | Ticker |  | 06/29/2012 |
| 2 | ALEXION PHARMACEUTICALS INC | ALXN | 111.1\% | 99.30 | 4 | SIMON PROPERTY GROUP INC | SPG | 33.9\% | 155.66 |
| New | MONSTER BEVERAGE CORP | M NST | 75.9\% | 71.20 | New | AMERICAN TOWER CORP | AM T | 33.6\% | 69.91 |
| 6 | Apple Inc | AAPL | 74.0\% | 584.00 | 10 | GOODRICH CORP | GR | 32.9\% | 126.90 |
| 4 | LENNAR CORP | LEN | 70.3\% | 30.91 | New | DISCOVERY COMMUNICATIONS | DISCA | 31.8\% | 54.00 |
| 8 | TJX COMPANIES INC | TJX | 63.4\% | 42.93 | 2 | WAL-MART STORES INC | WM T | 31.2\% | 69.72 |
| 7 | DOLLAR TREE INC | DLTR | 61.5\% | 53.80 | New | ALTRIA GROUP INC | MO | 30.8\% | 34.55 |
| 3 | D R HORTON INC | DHI | 59.5\% | 18.38 | New | PHILIP MORRIS INTERNATIONAL | PM | 30.7\% | 87.26 |
| 3 | SHERWIN-WILLIAMS CO | SHW | 57.8\% | 132.35 | New | CINCINNATI FINANCIAL CORP | CINF | 30.5\% | 38.07 |
| 6 | WYNDHAM WORLDWIDE CORP | WYN | 56.7\% | 52.74 | New | SEMPRA ENERGY | SRE | 30.3\% | 68.88 |
| 11 | ROSS STORES INC | ROST | 55.9\% | 62.47 | New | VERISIGN INC | VRSN | 30.2\% | 43.57 |
| 2 | GAP INC | GPS | 51.2\% | 27.36 | 2 | EBAY INC | EBAY | 30.2\% | 42.01 |
| 3 | WHOLE FOODS MARKET INC | WFM | 50.2\% | 95.32 | New | CONSTELLATION BRANDS | STZ | 30.0\% | 27.06 |
| 10 | INTUITIVE SURGICAL INC | ISRG | 48.8\% | 553.79 | 5 | PRICELINE.COM INC | PCLN | 29.8\% | 664.52 |
| 8 | VISA INC | V | 46.7\% | 123.63 | 2 | BROWN-FORMAN -CL B | BF.B | 29.7\% | 96.85 |
| 4 | HOME DEPOT INC | HD | 46.3\% | 52.99 | 17 | DISCOVER FINANCIAL SVCS INC | DFS | 29.3\% | 34.58 |
| 3 | CROWN CASTLE INTL CORP | CCI | 43.8\% | 58.66 | 2 | TOTAL SYSTEM SERVICES INC | TSS | 28.8\% | 23.93 |
| 11 | MASTERCARD INC | MA | 42.7\% | 430.11 | 7 | O'REILLY AUTOMOTIVE INC | ORLY | 27.9\% | 83.77 |
| New | PULTEGROUP INC | PHM | 39.7\% | 10.70 | 2 | HERSHEY CO | HSY | 26.7\% | 72.03 |
| New | DEAN FOODS CO | DF | 38.8\% | 17.03 | New | PUBLIC STORAGE | PSA | 26.7\% | 144.41 |
| New | CF INDUSTRIES HOLDINGS INC | CF | 36.8\% | 193.74 | 2 | FAMILY DOLLAR STORES | FDO | 26.5\% | 66.48 |
| 5 | CERNER CORP | CERN | 35.3\% | 82.66 | 2 | WISCONSIN ENERGY CORP | WEC | 26.2\% | 39.57 |
| 15 | BIOGEN IDEC INC | BIIB | 35.0\% | 144.38 | New | COMCAST CORP | CMCSA | 26.2\% | 31.97 |
| 12 | STARBUCKS CORP | SBUX | 35.0\% | 53.32 | 2 | U S BANCORP | USB | 26.1\% | 32.16 |
| 2 | EQUIFAX INC | EFX | 34.2\% | 46.60 | New | NEWS CORP | NWSA | 25.9\% | 22.29 |
| 2 | PERRIGO CO | PRGO | 34.2\% | 117.93 | New | KIMBERLY-CLARK CORP | KMB | 25.9\% | 83.77 |

[^22]
## Price Return - 9-Month Performance

Top 50 S\&P 500 Companies By 9-month price return.


8788899091929394959697989900010203040506070809101112

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for July

Mo.

| In |  |  | Price | Price |
| :--- | :--- | :--- | ---: | ---: |
| Scrn. | Company | Ticker | Return | 06/29/2012 |
|  |  |  |  |  |
| 3 | PULTEGROUP INC | PHM | $170.9 \%$ | 10.70 |
| 5 | LENNAR CORP | LEN | $128.3 \%$ | 30.91 |
| 5 | D R HORTON INC | DHI | $103.3 \%$ | 18.38 |
| 2 | REGIONS FINANCIAL CORP | RF | $102.7 \%$ | 6.75 |
| 2 | MASCO CORP | MAS | $94.8 \%$ | 13.87 |
| 2 | DEAN FOODS CO | DF | $92.0 \%$ | 17.03 |
| 7 | WYNDHAM WORLDWIDE CORP | WYN | $85.0 \%$ | 52.74 |
| 4 | SHERWIN-WILLIAMS CO | SHW | $78.1 \%$ | 132.35 |
| 5 | GAP INC | GPS | $68.5 \%$ | 27.36 |
| New | MARATHON PETROLEUM CORP | MPC | $66.0 \%$ | 44.92 |
| New | MONSTER BEVERAGE CORP | MNST | $63.1 \%$ | 71.20 |
| 6 | HOME DEPOT INC | HD | $61.2 \%$ | 52.99 |
| New | CBS CORP | CBS | $60.8 \%$ | 32.78 |
| 2 | Disney (Walt) CO | DIS | $60.8 \%$ | 48.50 |
| 3 | AKAMAI TECHNOLOGIES INC | AKAM | $59.7 \%$ | 31.75 |
| 10 | ROSS STORES INC | ROST | $58.8 \%$ | 62.47 |
| New | CF INDUSTRIES HOLDINGS INC | CF | $57.0 \%$ | 193.74 |
| New | DAVITA INC | DVA | $56.7 \%$ | 98.21 |
| New | FLOWSERVE CORP | FLS | $55.1 \%$ | 114.75 |
| 2 | ALEXION PHARMACEUTICALS INC | ALXN | $55.0 \%$ | 99.30 |
| 3 | BIOGEN IDEC INC | BIIB | $55.0 \%$ | 144.38 |
| 10 | TJX COMPANIES INC | TJX | $54.8 \%$ | 42.93 |
| 2 | FMC CORP | FMC | $54.7 \%$ | 53.48 |
| New | GANNETT CO | GCI | $54.6 \%$ | 14.73 |
| New | CITRIX SYSTEMS INC | CTXS | $53.9 \%$ | 83.94 |

Mo.

| In |  | Price | Price |  |
| :--- | :--- | :--- | ---: | ---: |
| Scrn. | Company | Ticker | Return | 06/29/2012 |
|  |  |  |  |  |
| New | SUNOCO INC | SUN | $53.2 \%$ | 47.50 |
| 6 | Apple Inc | AAPL | $53.2 \%$ | 584.00 |
| New | SCRIPPS NETWORKS INTERACT SNI | $53.0 \%$ | 56.86 |  |
| 2 | NEWELL RUBBERMAID INC | NWL | $52.8 \%$ | 18.14 |
| 2 | COMCAST CORP | CMCSA | $52.8 \%$ | 31.97 |
| New | VERISIGN INC | VRSN | $52.3 \%$ | 43.57 |
| 12 | INTUITIVE SURGICAL INC | ISRG | $52.0 \%$ | 553.79 |
| 4 | EQUIFAX INC | EFX | $51.6 \%$ | 46.60 |
| 5 | DISCOVER FINANCIAL SVCS INC | DFS | $50.7 \%$ | 34.58 |
| New | INTERPUBLIC GROUP OF COS | IPG | $50.7 \%$ | 10.85 |
| New | EXPRESS SCRIPTS HOLDING CO ESRX | $50.6 \%$ | 55.83 |  |
| New | CONSTELLATION BRANDS | STZ | $50.3 \%$ | 27.06 |
| 2 | PPG INDUSTRIES INC | PPG | $50.2 \%$ | 106.12 |
| New | INGERSOLL-RAND PLC | IR | $50.2 \%$ | 42.18 |
| 2 | ALLSTATE CORP | ALL | $48.1 \%$ | 35.09 |
| New | PRICELINE.COM INC | PCLN | $47.8 \%$ | 664.52 |
| 2 | COOPER INDUSTRIES PLC | CBE | $47.8 \%$ | 68.18 |
| 4 | LOWE'S COMPANIES INC | LOW | $47.1 \%$ | 28.44 |
| New | EASTMAN CHEMICALCO | EMN | $47.0 \%$ | 50.37 |
| New | AMERICAN INTERNATIONAL GR(AIG | $46.2 \%$ | 32.09 |  |
| New | UNION PACIFIC CORP | UNP | $46.1 \%$ | 119.31 |
| 2 | WHOLE FOODS MARKET INC | WFM | $46.0 \%$ | 95.32 |
| New | INVESCO LTD | IVZ | $45.7 \%$ | 22.60 |
| New | FIRST HORIZON NATIONAL COR FHN | $45.1 \%$ | 8.65 |  |
| New | TorChmark Corp | TMK | $45.0 \%$ | 50.55 |
|  |  |  |  |  |

## Price Return - 3-Month Performance

Top 50 S\&P 500 Companies By 3-month price return.


8788899091929394959697989900010203040506070809101112


| Absolute Returns |  |
| :--- | ---: |
| Last 1 Month | $3.92 \%$ |
| Last 3 M onths | $-7.66 \%$ |
| Last 6 Months | $8.55 \%$ |
| Last 12 M onths | $-0.80 \%$ |
| 2012 YTD | $8.55 \%$ |

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for July

| $\begin{aligned} & \text { Mo. } \\ & \text { In } \end{aligned}$ |  |  | Price |  | Mo. <br> In |  |  |  | Price |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn. | Company | Ticker | Return | 06/29/2012 | Scrn. | Company | Ticker | Return | 06/29/2012 |
| 3 | EXPEDIA INC | EXPE | 43.8\% | 48.07 | 3 | EbAY INC | EBAY | 13.9\% | 42.01 |
| 2 | EDWARDS LIFESCIENCES CORP | EW | 42.0\% | 103.30 | 8 | LENNAR CORP | LEN | 13.7\% | 30.91 |
| 2 | DEAN FOODS CO | DF | 40.6\% | 17.03 | New | VERISIGN INC | VRSN | 13.6\% | 43.57 |
| New | CABOT OIL \& GAS CORP | COG | 26.4\% | 39.40 | 3 | WYNDHAM WORLDWIDE CORP | WYN | 13.4\% | 52.74 |
| 2 | TRIPADVISOR INC | TRIP | 25.3\% | 44.69 | 2 | KIMBERLY-CLARK CORP | KMB | 13.4\% | 83.77 |
| 3 | SUNOCO INC | SUN | 24.5\% | 47.50 | New | PROGRESS ENERGY INC | PGN | 13.3\% | 60.17 |
| 3 | SHERWIN-WILLIAMS CO | SHW | 21.8\% | 132.35 | New | NEWS CORP | NWSA | 13.1\% | 22.29 |
| 2 | D R HORTON INC | DHI | 21.2\% | 18.38 | 3 | AMAZON.COM INC | AMZN | 12.8\% | 228.35 |
| New | Pultegroup inc | PHM | 20.9\% | 10.70 | 2 | NEXTERA ENERGY INC | NEE | 12.7\% | 68.81 |
| 2 | HERSHEY CO | HSY | 17.5\% | 72.03 | 2 | WISCONSIN ENERGY CORP | WEC | 12.5\% | 39.57 |
| 2 | SCRIPPS NETWORKS INTERACTIVE | SNI | 16.8\% | 56.86 | New | ALTRIA GROUP INC | mo | 11.9\% | 34.55 |
| 2 | VERIZON COMMUNICATIONS INC | VZ | 16.2\% | 44.44 | New | HCP INC | HCP | 11.9\% | 44.15 |
| New | BROWN-FORMAN -CL B | BF.B | 16.1\% | 96.85 | New | SOUTHWEST AIRLINES | LUV | 11.9\% | 9.22 |
| 2 | QUANTA SERVICES INC | PWR | 15.2\% | 24.07 | 2 | MCCORMICK \& CO INC | MKC | 11.4\% | 60.65 |
| 2 | SEMPRA ENERGY | SRE | 14.9\% | 68.88 | New | EQT CORP | EQT | 11.2\% | 53.63 |
| New | CONSTELLATION BRANDS | STZ | 14.7\% | 27.06 | New | ECOLAB INC | ECL | 11.0\% | 68.53 |
| New | MONSTER BEVERAGE CORP | MNST | 14.7\% | 71.20 | New | UNION PACIFIC CORP | UNP | 11.0\% | 119.31 |
| 2 | BIOGEN IDEC INC | BIIB | 14.6\% | 144.38 | New | AMERICAN TOWER CORP | AMT | 10.9\% | 69.91 |
| 2 | WHOLE FOODS MARKET INC | WFM | 14.6\% | 95.32 | New | NRG ENERGY INC | NRG | 10.8\% | 17.36 |
| New | IRON MOUNTAIN INC | IRM | 14.4\% | 32.96 | 2 | Disney (Walt) Co | DIS | 10.8\% | 48.50 |
| New | SPRINT NEXTEL CORP | S | 14.4\% | 3.26 | 2 | PPG INDUSTRIES INC | PPG | 10.8\% | 106.12 |
| 2 | AT\&T INC | T | 14.2\% | 35.66 | New | VENTAS InC | VTR | 10.5\% | 63.12 |
| New | PERRIGO Co | PRGO | 14.2\% | 117.93 | 3 | WATSON PHARMACEUTICALS IN |  | 10.3\% | 73.99 |
| 2 | WAL-MART STORES INC | WMT | 13.9\% | 69.72 | New | CINCINNATI FINANCIAL CORP | CINF | 10.3\% | 38.07 |
| 3 | DOLLAR TREE INC | DLTR | 13.9\% | 53.80 | New | CROWN CASTLE INTL CORP | CCI | 10.0\% | 58.66 |

## Price Return - 11-Month Performance

Top 50 S\&P 500 Companies By 11-month price return from one year ago.


8788899091929394959697989900010203040506070809101112

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Back tested performance is hypothetical in nature and reflects application of the screen prior to it introduction and is not intended to be indicative of future performance


| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $1.29 \%$ |
| Last 3 Months | $-3.49 \%$ |
| Last 6 M onths | $6.20 \%$ |
| Last 12 Months | $-4.54 \%$ |
| 2012 YTD | $6.20 \%$ |

Screen for July

| Mo. In |  |  | Price | Price | Mo. In |  |  | Price | Price |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn.* | Company | Ticker | Return | 06/29/2012 | Scrn.* | Company | Ticker | Return | 06/29/2012 |
| 2 | ALEXION PHARMACEUTICALS INC | ALXN | 92.6\% | 99.30 | New | FAMILY DOLLAR STORES | FDO | 28.9\% | 66.48 |
| New | MONSTER BEVERAGE CORP | MNST | 79.4\% | 71.20 | 5 | CERNER CORP | CERN | 27.6\% | 82.66 |
| 5 | Apple Inc | AAPL | 72.1\% | 584.00 | New | DEAN FOODS CO | DF | 27.5\% | 17.03 |
| 7 | TJX COMPANIES INC | TJX | 61.7\% | 42.93 | 6 | YUM BRANDS INC | YUM | 27.4\% | 64.42 |
| 10 | ROSS STORES INC | ROST | 57.8\% | 62.47 | 6 | SIMON PROPERTY GROUP INC | SPG | 26.9\% | 155.66 |
| 7 | DOLLAR TREE INC | DLTR | 54.9\% | 53.80 | New | PHILIP MORRIS INTERNATIONAL | PM | 26.6\% | 87.26 |
| 3 | SHERWIN-WILLIAMS CO | SHW | 54.6\% | 132.35 | 9 | GRAINGER (W W) INC | GWW | 26.0\% | 191.24 |
| 4 | LENNAR CORP | LEN | 50.4\% | 30.91 | 2 | TOTAL SYSTEM SERVICES INC | TSS | 25.2\% | 23.93 |
| 6 | WYNDHAM WORLDWIDE CORP | WYN | 48.0\% | 52.74 | New | AMERICAN TOWER CORP | AMT | 24.0\% | 69.91 |
| 2 | GAP INC | GPS | 46.4\% | 27.36 | 3 | AIRGAS INC | ARG | 23.9\% | 84.01 |
| 7 | O'REILLY AUTOMOTIVE INC | ORLY | 46.2\% | 83.77 | New | NISOURCE INC | NI | 23.9\% | 24.75 |
| 2 | D R HORTON INC | DHI | 44.1\% | 18.38 | New | WAL-MART STORES INC | WMT | 23.9\% | 69.72 |
| 10 | INTUITIVE SURGICAL INC | ISRG | 40.6\% | 553.79 | 2 | BED BATH \& BEYOND INC | BBBY | 23.8\% | 61.80 |
| 3 | WHOLE FOODS MARKET INC | WFM | 39.7\% | 95.32 | 3 | DISCOVER FINANCIAL SVCS INC | DFS | 23.8\% | 34.58 |
| 12 | STARBUCKS CORP | SBUX | 39.0\% | 53.32 | New | CINCINNATI FINANCIAL CORP | CINF | 23.6\% | 38.07 |
| 7 | VISA INC | V | 36.7\% | 123.63 | New | TARGET CORP | TGT | 23.4\% | 58.19 |
| 4 | HOME DEPOT INC | HD | 36.2\% | 52.99 | New | SEMPRA ENERGY | SRE | 22.9\% | 68.88 |
| 10 | MASTERCARD INC | MA | 34.9\% | 430.11 | 9 | FASTENAL CO | FAST | 22.9\% | 40.31 |
| 7 | CHIPOTLE MEXICAN GRILL INC | CMG | 34.0\% | 379.95 | New | DISCOVERY COMMUNICATIONS | DISCA | 22.3\% | 54.00 |
| 3 | CROWN CASTLE INTL CORP | CCI | 33.9\% | 58.66 | 14 | BIOGEN IDEC INC | BIIB | 22.3\% | 144.38 |
| 9 | GOODRICH CORP | GR | 31.7\% | 126.90 | New | PULTEGROUP INC | PHM | 22.2\% | 10.70 |
| 7 | MACY'S INC | M | 30.1\% | 34.35 | 3 | PRICELINE.COM INC | PCLN | 22.2\% | 664.52 |
| New | EQUIFAX INC | EFX | 30.1\% | 46.60 | 2 | U S BANCORP | USB | 22.0\% | 32.16 |
| 11 | VF CORP | VFC | 29.9\% | 133.45 | New | ALTRIA GROUP INC | MO | 21.9\% | 34.55 |
| 6 | AUTOZONE INC | AZO | 29.0\% | 367.17 | New | ROPER INDUSTRIES INC/DE | ROP | 21.5\% | 98.58 |

[^23]Bank of America

## Price Return - 12-Month and 1-Month Performance

Top 50 S\&P 500 Companies By average rank of 12-month and 1-month price return.


8788899091929394959697989900010203040506070809101112
Sector Concentration
Info Tech
$16 \%$
Hith Care
$18 \%$

| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $4.08 \%$ |
| Last 3 M onths | $1.53 \%$ |
| Last 6 M onths | $12.34 \%$ |
| Last 12 M onths | $1.62 \%$ |
| 2012 YTD | $12.34 \%$ |

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Back tested performance is hypothetical in nature and reflects application of the screen prior to it introduction and is not intended to be indicative of future performance
Screen for July


## Price Return - 12-Month and 1-Month Reversal

Top 50 S\&P 500 Companies By average rank of 12-month and reversal 1-month price return.


8788899091929394959697989900010203040506070809101112

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Back tested performance is hypothetical in nature and reflects application of the screen prior to it introduction and is not intended to be indicative of future performance
Screen for July

| Mo. |  | Avg |  |  | Mo. |  | Avg |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Percent | Price | In |  |  | Percent | Price |
| Scrn. | Company | Ticker | Rank | 06/29/2012 | Scrn. | Company | Ticker | Rank | 06/29/2012 |
| 2 | O'REILLY AUTOMOTIVE INC | ORLY | 5.4 | 83.77 | 2 | LIMITED BRANDS INC | LTD | 19.3 | 42.53 |
| New | MONSTER BEVERAGE CORP | MNST | 8.1 | 71.20 | 2 | MEAD JOHNSON NUTRITION CO | MJN | 19.8 | 80.51 |
| 2 | STARBUCKS CORP | SBUX | 8.8 | 53.32 | New | CELGENE CORP | CELG | 19.8 | 64.16 |
| New | CHIPOTLE MEXICAN GRILL INC | CMG | 8.9 | 379.95 | New | XYLEM INC | XYL | 19.9 | 25.17 |
| New | ROSS STORES INC | ROST | 10.2 | 62.47 | New | NEWELL RUBBERMAID INC | NWL | 20.3 | 18.14 |
| 2 | VF CORP | VFC | 10.3 | 133.45 | 4 | RALPH LAUREN CORP | RL | 20.8 | 140.06 |
| 2 | MACY'S INC | M | 10.8 | 34.35 | New | CMS ENERGY CORP | CMS | 22.7 | 23.50 |
| New | AUTOZONE INC | AZO | 11.3 | 367.17 | New | GOOGLE INC | GOOG | 23.7 | 580.07 |
| New | FAMILY DOLLAR STORES | FDO | 12.3 | 66.48 | 2 | GAP INC | GPS | 24.1 | 27.36 |
| New | YUM BRANDS INC | YUM | 12.3 | 64.42 | New | EQUIFAX INC | EFX | 24.7 | 46.60 |
| 2 | AIRGAS INC | ARG | 13.8 | 84.01 | New | SCANA CORP | SCG | 24.7 | 47.84 |
| 3 | GRAINGER (W W) INC | GWW | 14.8 | 191.24 | New | TOTAL SYSTEM SERVICES INC | TSS | 25.2 | 23.93 |
| 4 | FASTENAL CO | FAST | 14.8 | 40.31 | New | CHUBB CORP | CB | 25.2 | 72.82 |
| New | Apple Inc | AAPL | 15.1 | 584.00 | New | SOUTHERN CO | SO | 25.2 | 46.30 |
| New | TJX COMPANIES INC | TJX | 15.1 | 42.93 | 2 | PIONEER NATURAL RESOURCE! | PXD | 25.2 | 88.21 |
| New | NISOURCE INC | NI | 16.3 | 24.75 | New | XCEL ENERGY INC | XEL | 25.7 | 28.41 |
| New | ROPER INDUSTRIES INC/DE | ROP | 16.3 | 98.58 | New | NIKE INC | NKE | 25.7 | 87.78 |
| New | KINDER MORGAN INC | KMI | 16.8 | 32.22 | New | PHILIP MORRIS INTERNATIONAL | PM | 26.2 | 87.26 |
| New | GOODRICH CORP | GR | 17.2 | 126.90 | New | GILEAD SCIENCES INC | GILD | 26.2 | 51.28 |
| New | BED BATH \& BEYOND INC | BBBY | 17.8 | 61.80 | New | TYCO INTERNATIONAL LTD | TYC | 27.2 | 52.85 |
| New | COOPER INDUSTRIES PLC | CBE | 18.3 | 68.18 | New | ARCHER-DANIELS-MIDLAND CO | ADM | 27.2 | 29.52 |
| 2 | HARLEY-DAVIDSON INC | HOG | 18.3 | 45.73 | New | DOLLAR TREE INC | DLTR | 27.5 | 53.80 |
| New | SHERWIN-WILLIAMS CO | SHW | 19.1 | 132.35 | New | U S BANCORP | USB | 27.7 | 32.16 |
| New | TARGET CORP | TGT | 19.3 | 58.19 | 3 | INTL BUSINESS MACHINES CORI | IBM | 28.2 | 195.58 |
| New | Genuine Parts Co | GPC | 19.3 | 60.25 | 6 | MCDONALD'S CORP | MCD | 28.2 | 88.53 |

## Most Active

## Top 50 S\&P 500 Companies By Most Actively Traded Stocks.

Most Actively Traded Stocks: Stocks have the highest monthly share trading volume.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end May 1986 to month end August 2003. The unshaded portion
epresents actual performance since September 2003. Back tested performance is hypothetical in nature and reflects application of the screen prior to its represents actual performance since September 203. Back tested per
Screen for July


## Earnings Momentum

## Top 50 S\&P 500 Companies By EPS MOMENTUM

Earnings Momentum: The difference between 12-month trailing EPS and year-ago12-month trailing EPS divided by yearago 12-month trailing EPS.


868788899091929394959697989900010203040506070809101112


| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $3.16 \%$ |
| Last 3 M onths | $-7.88 \%$ |
| Last 6 M onths | $7.22 \%$ |
| Last 12 M onths | $-9.17 \%$ |
| 2012 YTD | $7.22 \%$ |

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for July

| Mo. |  |  |  |  | Mo. |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  |  | EPS Price |  | In |  |  | EPS Price |  |
| Scrn. | Company | Ticker | Momentum | 06/29/2012 |  | Company | Ticker | Momentum | 06/29/2012 |
| 2 | ALLERGAN INC | AGN | 11133.3 | 92.57 | 9 | NABORS INDUSTRIES LTD | NBR | 147.3 | 14.40 |
| 9 | FIRST HORIZON NATIONAL CORP | FHN | 1016.9 | 8.65 | 2 | CHESAPEAKE ENERGY CORP | CHK | 133.0 | 18.60 |
| 5 | EOG RESOURCES INC | EOG | 597.1 | 90.11 | 5 | REGIONS FINANCIAL CORP | RF | 128.6 | 6.75 |
| 5 | GOODYEAR TIRE \& RUBBER CO | GT | 400.0 | 11.81 | 2 | ELECTRONIC ARTS INC | EA | 127.4 | 12.35 |
| New | LENNAR CORP | LEN | 398.2 | 30.91 | 3 | HARMAN INTERNATIONAL INDS | HAR | 119.9 | 39.60 |
| 5 | DENBURY RESOURCES INC | DNR | 342.5 | 15.11 | 5 | CLOROX CO/DE | CLX | 113.6 | 72.46 |
| 5 | MERCK \& CO | MRK | 336.5 | 41.75 | 12 | ROBERT HALF INTL INC | R HI | 110.5 | 28.57 |
| 2 | PIONEER NATURAL RESOURCES | C PXD | 324.1 | 88.21 | 9 | E TRADE FINANCIAL CORP | ETFC | 110.0 | 8.04 |
| 6 | LSI CORP | LSI | 316.7 | 6.37 | 13 | TESORO CORP | TSO | 109.0 | 24.96 |
| 9 | SUNTRUST BANKS INC | STI | 256.8 | 24.23 | 6 | VERISIGN INC | VRSN | 108.3 | 43.57 |
| 3 | RANGE RESOURCES CORP | RRC | 250.0 | 61.87 | 17 | PACCAR INC | PCAR | 105.7 | 39.19 |
| 2 | GENWORTH FINANCIAL INC | GNW | 240.0 | 5.66 | 2 | SYMANTEC CORP | SYMC | 105.2 | 14.61 |
| 8 | WILLIAMS COS INC | WMB | 224.3 | 28.82 | 3 | HOST HOTELS \& RESORTS INC | HST | 100.0 | 15.82 |
| 5 | EQUITY RESIDENTIAL | EQR | 196.7 | 62.36 | 8 | NVIDIA CORP | NVDA | 97.6 | 13.82 |
| 4 | CROWN CASTLE INTL CORP | CCl | 195.1 | 58.66 | 12 | HUNTINGTON BANCSHARES | HBAN | 96.9 | 6.40 |
| 15 | NUCOR CORP | NUE | 192.7 | 37.90 | 3 | PROLOGIS INC | PLD | 96.2 | 33.23 |
| 6 | D R HORTON INC | DHI | 180.0 | 18.38 | 3 | APPLE INC | AAPL | 94.8 | 584.00 |
| 2 | HEALTH CARE REIT INC | HCN | 169.0 | 58.30 | 18 | HARLEY-DAVIDSON INC | HOG | 94.7 | 45.73 |
| 11 | CF INDUSTRIES HOLDINGS INC | CF | 165.7 | 193.74 | 5 | FMC CORP | FMC | 92.6 | 53.48 |
| 2 | KIMCO REALTY CORP | KIM | 158.3 | 19.03 | 17 | WYNN RESORTS LTD | WYNN | 92.0 | 103.72 |
| 18 | TEXTRON INC | TXT | 153.2 | 24.87 | 3 | PRICELINE.COM INC | PCLN | 91.7 | 664.52 |
| 6 | FORD MOTOR CO | F | 153.0 | 9.59 | 3 | FIFTH THIRD BANCORP | FITB | 90.2 | 13.40 |
| 3 | NEWFIELD EXPLORATION CO | NFX | 151.8 | 29.31 | 3 | SIMON PROPERTY GROUP INC | SPG | 89.8 | 155.66 |
| 5 | ASSURANT INC | AIZ | 151.0 | 34.84 | 3 | STARWOOD HOTELS\&RESORTS | HOT | 85.9 | 53.04 |
| 6 | ZIONS BANCORPORATION | ZION | 148.1 | 19.42 | 8 | INTERPUBLIC GROUP OF COS | IPG | 83.9 | 10.85 |

## Projected Five-Year EPS Growth

## Top 50 S\&P 500 Companies By PROJ. 5-YR EPS GROWTH

Projected 5-Year EPS Growth: The five-year EPS growth rate estimated by BofAML Fundamental Equity Research. If no BofAML estimate exists, then the IBES Mean Long Term Growth Estimate is used.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded
portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its
introduction and is not intended to be indicative of future performance
Screen for July

| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  |  | EPS Gr | Price |
| Scrn | Company | Ticker | Next 5 Yr | $06 / 29 / 2012$ |
|  |  |  |  |  |
| 20 | WYNN RESORTS LTD | WYNN | 50.0 | 103.72 |
| 26 | GOODYEAR TIRE \& RUBBER CO | GT | 43.6 | 11.81 |
| 15 | COMERICA INC | CMA | 40.0 | 30.71 |
| 3 | WESTERN DIGITAL CORP | WDC | 39.4 | 30.48 |
| 3 | SOUTHWEST AIRLINES | LUV | 38.8 | 9.22 |
| 9 | SUNTRUST BANKS INC | STI | 34.8 | 24.23 |
| 7 | SEARS HOLDINGS CORP | SHLD | 32.3 | 59.70 |
| 29 | TEXTRON INC | TXT | 31.9 | 24.87 |
| 10 | LENNAR CORP | LEN | 30.4 | 30.91 |
| 12 | NETFLIX INC | NFLX | 30.0 | 68.49 |
| 28 | DISCOVERYCOMMUNICATIONS INCDISCA | 27.4 | 54.00 |  |
| 2 | ALEXION PHARMACEUTICALS INC | ALXN | 26.8 | 99.30 |
| 10 | NOBLE ENERGY INC | NBL | 26.4 | 84.82 |
| 24 | AUTONATION INC | AN | 25.7 | 35.28 |
| 12 | ABERCROMBIE \& FITCH $-C L A$ | ANF | 25.0 | 34.14 |
| 19 | F5 NETWORKS INC | FFIV | 25.0 | 99.56 |
| 15 | M \& B BANK CORP | MTB | 25.0 | 82.57 |
| 46 | SALESFORCECOM INC | CRM | 25.0 | 138.26 |
| 5 | MARRIOTT INTL INC | MAR | 24.7 | 39.20 |
| 3 | E TRADE FINANCIALCORP | ETFC | 23.8 | 8.04 |
| 12 | NABORS INDUSTRIES LTD | NBR | 22.3 | 14.40 |
| 37 | METROPCS COMMUNICATIONS INCPCS | 21.9 | 6.05 |  |
| 2 | AMERICAN TOWER CORP | AMT | 21.4 | 69.91 |
| 9 | JOHNSON CONTROLS INC | JCI | 21.3 | 27.71 |
| 31 | CELGENE CORP | CELG | 20.8 | 64.16 |


| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  |  | EPS Gr | Price |
| Scrn | Company | Ticker | Next 5 Yr | 06/29/2012 |
|  |  |  |  |  |
| 2 | CROWN CASTLE INTL CORP | CCI | 20.5 | 58.66 |
| 6 | CERNER CORP | CERN | 20.2 | 82.66 |
| 5 | KIMCO REALTY CORP | KIM | 20.0 | 19.03 |
| 80 | AMAZON.COM INC | AMZN | 20.0 | 228.35 |
| 9 | CBRE GROUP INC | CBG | 20.0 | 16.36 |
| 15 | CHIPOTLE MEXICAN GRILL INC | CMG | 20.0 | 379.95 |
| 7 | DOLLAR TREE INC | DLTR | 20.0 | 53.80 |
| 3 | EXPRESS SCRIPTS HOLDING CO | ESRX | 20.0 | 55.83 |
| 7 | O'REILLY AUTOMOTIVE INC | ORLY | 20.0 | 83.77 |
| 32 | PRICELINE.COM INC | PCLN | 20.0 | 664.52 |
| 36 | RED HAT INC | RHT | 20.0 | 56.48 |
| 2 | STARBUCKS CORP | SBUX | 20.0 | 53.32 |
| 151 | YAHOO INC | YHOO | 20.0 | 15.83 |
| 7 | BORGWARNER INC | BWA | 19.8 | 65.59 |
| 4 | ANADARKO PETROLEUM CORP | APC | 19.7 | 66.20 |
| 14 | DENBURY RESOURCES INC | DNR | 19.4 | 15.11 |
| New | MORGAN STANLEY | MS | 19.4 | 14.59 |
| 2 | PIONEER NATURAL RESOURCES C PXD | 19.3 | 88.21 |  |
| New | HARLEY-DAVIDSON INC | HOG | 19.3 | 45.73 |
| 5 | VIACOM INC | VIAB | 19.2 | 47.02 |
| 9 | BB\&T CORP | BBT | 19.2 | 30.85 |
| 6 | EDWARDS LIFESCIENCES CORP | EW | 19.2 | 103.30 |
| New | VISA INC | V | 19.1 | 123.63 |
| 18 | EQT CORP | EQT | 19.1 | 53.63 |
| New | STARWOOD HOTELS\&RESORTS WF HOT | 18.6 | 53.04 |  |
|  |  |  |  |  |

## Positive Earnings Surprise

## Top S\&P 500 Companies by POSITIVE EPS SURPRISE

Earnings Surprise: A forecast earnings surprise variable which compares BofAML estimates to those of the consensus after adjusting for the range of estimates. Stocks are ranked from 1 to 10, with 1 being among the most optimistic, relative to the consensus. 10 being among the most pessimistic.

$\begin{array}{lllllllllllllllllllllllllllllllllll}86 & 87 & 88 & 89 & 90 & 91 & 92 & 93 & 94 & 95 & 96 & 97 & 98 & 99 & 00 & 01 & 02 & 03 & 04 & 05 & 06 & 07 & 08 & 09 & 10 & 11 & 12\end{array}$

Source: BofA Merrill Lynch US Quantitative Strateg
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its portion represents actual performance since January 1989. Back tested


| A bsolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $4.00 \%$ |
| Last 3 M onths | $-7.26 \%$ |
| Last 6 M onths | $3.35 \%$ |
| Last 12 Months | $-7.47 \%$ |
| 2012 YTD | $3.35 \%$ |

Screen for July

| M 0 . |  |  |  |  | M 0 . |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 n |  |  | ML vs. Price |  | In |  |  | ML vs. Price |  |
| Scrn. | Company | Ticker | Con | 0612912012 | Scrn. | Company | Ticker | Con | 06/29/2012 |
| 2 | AIR PRODUCTS \& CHEMICALS INC | APD | 1 | 80.73 | 11 | TERADATACORP | T DC | 1 | 72.01 |
| 2 | ALPHANATURALRESOURCES INC | ANR | 1 | 8.71 | 4 | VALERO ENERGY CORP | VLO | 1 | 24.15 |
| 2 | AMERICAN INTERNATIONAL GROUI |  | 1 | 32.09 | 3 | WATSON PHARMACEUTICALS INC | W PI | 1 | 73.99 |
| 9 | AUTONATION INC | AN | 1 | 35.28 | 4 | WESTERN DIGITALCORP | WDC | 1 | 30.48 |
| 3 | APPLE INC | AAPL | 1 | 584.00 | 3 | AFLAC INC | AFL | 2 | 42.59 |
| 3 | $B B \& T C O R P$ | B $\mathrm{T}^{\text {I }}$ | 1 | 30.85 | 9 | ALLERGAN INC | AGN | 2 | 92.57 |
| 2 | BIOGEN IDEC INC | $B \\| B$ | 1 | 144.38 | 3 | AMAZON.COM INC | $A M Z N$ | 2 | 228.35 |
| 5 | BOEINGCO | BA | 1 | 74.30 | 9 | AMERICAN EXPRESS CO | AXP | 2 | 58.21 |
| 10 | CARMAX INC | K M X | 1 | 25.94 | N ew | BORGWARNER INC | B W A | 2 | 65.59 |
| 5 | CATERPILLAR INC | CAT | 1 | 84.91 | N ew | CELGENECORP | CELG | 2 | 64.16 |
| N ew | CBS CORP | CBS | 1 | 32.78 | 4 | CONSTELLATION BRANDS | STZ | 2 | 27.06 |
| 6 | CHESAPEAKE ENERGYCORP | CHK | 1 | 18.60 | N ew | DOLLAR TREE INC | DLTR | 2 | 53.80 |
| 3 | CONSOL ENERGY INC | CNX | 1 | 30.24 | 3 | EXELON CORP | EXC | 2 | 37.62 |
| 2 | COVENTRY HEALTH CARE INC | CVH | 1 | 31.79 | 3 | FEDERATED INVESTORS INC | FII | 2 | 21.85 |
| 5 | DIAMOND OFFSHRE DRILLING INC | DO | 1 | 59.13 | 3 | FMC TECHNOLOGIES INC | FTI | 2 | 39.23 |
| 3 | EASTMAN CHEMICALCO | EM N | 1 | 50.37 | N ew | FRANKLIN RESOURCES INC | BEN | 2 | 110.99 |
| 14 | FLUOR CORP | FLR | 1 | 49.34 | New | HOMEDEPOT INC | HD | 2 | 52.99 |
| N ew | FMC CORP | FMC | 1 | 53.48 | N ew | JUNIPER NETWORKS INC | JNPR | 2 | 16.31 |
| 2 | FOSSILINC | FOSL | 1 | 76.54 | 3 | MICROSOFTCORP | M SFT | 2 | 30.59 |
| 2 | GENERAL DYNAMICS CORP | G D | 1 | 65.96 | N ew | OWENS-ILLINOIS INC | OI | 2 | 19.17 |
| 3 | GOODYEAR TIRE \& RUBBER CO | G T | 1 | 11.81 | 3 | PEABODYENERGYCORP | B TU | 2 | 24.52 |
| 6 | INGERSOLL-RAND PLC | IR | 1 | 42.18 | 2 | PHILLIPS 66 | P S X | 2 | 33.24 |
| New | JOHNSON \& JOHNSON | J J J | 1 | 67.56 | 3 | PPLCORP | PPL | 2 | 27.81 |
| 3 | LIFE TECHNOLOGIES CORP | LIFE | 1 | 44.99 | N ew | PRICE (T. ROWE) GROUP | TROW | 2 | 62.96 |
| 3 | LINCOLN NATIONALCORP | LNC | 1 | 21.87 | 3 | SOUTHERNCO | SO | 2 | 46.30 |
| 3 | M \& T BANK CORP | M TB | 1 | 82.57 | N ew | STARWOOD HOTELS\&RESORTS WR | HOT | 2 | 53.04 |
| 3 | METLIFE INC | M ET | 1 | 30.85 | 4 | STATE STREET CORP | STT | 2 | 44.64 |
| N ew | MICRON TECHNOLOGY INC | M U | 1 | 6.31 | 2 | TRIPADVISOR INC | TRIP | 2 | 44.69 |
| 7 | NETFLIX INC | NFLX | 1 | 68.49 | 3 | UNITED TECHNOLOGIES CORP | UTX | 2 | 75.53 |
| 3 | NEWS CORP | N W S A | 1 | 22.29 | N ew | WALGREENCO | W AG | 2 | 29.58 |
| 9 | RAYTHEONCO | R TN | 1 | 56.59 | 5 | WELLS FARGO \& CO | WFC | 2 | 33.44 |
| New | SALESFORCE.COM INC | CRM | 1 | 138.26 | 5 | XILINXINC | XLNX | 2 | 33.57 |
| 6 | SPECTRA ENERGYCORP | S E | 1 | 29.06 | 2 | XL GROUPPLC | XL | 2 | 21.04 |
|  |  |  |  |  | 3 | ZIONS BANCORPORATION | Z ION | 2 | 19.42 |

## Earnings Estimate Revision

## Top 50 S\&P 500 Companies By UPWARD EPS EST. REVISION

EPS Estimate Revision: The difference between the I/B/E/S FY1 estimate and that of three months ago divided by the absolute value of the I/B/E/S FY1 estimate of three months ago.



Source: BofA Merrill Lynch US Quantitative Strategy
The performance chart represents actual returns since July 1989. There is no back tested performance.
Screen for July

| Mo. |  |  |  |  |
| :--- | :--- | :--- | :--- | ---: |
| In |  |  | EPS Est. | Price |
| Scrn. | Company | Ticker | Revision | $06 / 29 / 2012$ |
|  |  |  |  |  |
| 2 | NETFLIX INC | NFLX | 1.454 | 68.49 |
| 3 | AMERICAN INTERNATIONAL GROUIAIG | 0.421 | 32.09 |  |
| 3 | SEARS HOLDINGS CORP | SHLD | 0.420 | 59.70 |
| 5 | PULTEGROUP INC | PHM | 0.410 | 10.70 |
| 2 | MASCO CORP | MAS | 0.368 | 13.87 |
| 5 | D R HORTON INC | DHI | 0.331 | 18.38 |
| 2 | DEAN FOODS CO | DF | 0.259 | 17.03 |
| 3 | REGIONS FINANCIAL CORP | RF | 0.256 | 6.75 |
| 6 | TERADYNE INC | TER | 0.226 | 14.06 |
| 5 | LSICORP | LSI | 0.221 | 6.37 |
| 5 | DISCOVER FINANCIAL SVCS INC | DFS | 0.214 | 34.58 |
| 4 | MARATHON PETROLEUM CORP | MPC | 0.211 | 44.92 |
| 4 | WESTERN DIGITAL CORP | WDC | 0.162 | 30.48 |
| 2 | YAHOO INC | YHOO | 0.160 | 15.83 |
| 3 | AON PLC | AON | 0.155 | 46.78 |
| New | CARNIVAL CORPIPLC (USA) | CCL | 0.151 | 34.27 |
| New | SOUTHWEST AIRLINES | LUV | 0.139 | 9.22 |
| 4 | WASHINGTON POST -CL B | WPO | 0.138 | 373.82 |
| 4 | ADVANCED MICRO DEVICES | AMD | 0.132 | 5.73 |
| 2 | ALLSTATE CORP | ALL | 0.132 | 35.09 |
| 2 | SUNTRUST BANKS INC | STI | 0.119 | 24.23 |
| 2 | CF INDUSTRIES HOLDINGS INC | CF | 0.116 | 193.74 |
| 2 | CAPITAL ONE FINANCIAL CORP | COF | 0.116 | 54.66 |
| 4 | LENNAR CORP | LEN | 0.114 | 30.91 |
| 3 | TRAVELERS COS INC | TRV | 0.112 | 63.84 |


| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  |  | EPS Est. | Price |
| Scrn. Company | Ticker | Revision | 06/29/2012 |  |
|  |  |  |  |  |
| 5 | VULCAN MATERIALS CO | VMC | 0.110 | 39.71 |
| 2 | TESORO CORP | TSO | 0.107 | 24.96 |
| 2 | TRIPADVISOR INC | TRIP | 0.096 | 44.69 |
| 3 | PPG INDUSTRIES INC | PPG | 0.093 | 106.12 |
| New | APOLLO GROUP INC -CL A | APOL | 0.091 | 36.19 |
| 3 | COMERICA INC | CMA | 0.089 | 30.71 |
| 2 | ROBERT HALF INTL INC | RHI | 0.089 | 28.57 |
| 2 | HARTFORD FINANCIAL SERVICES | HIG | 0.088 | 17.63 |
| 3 | SHERWIN-WILLIAMS CO | SHW | 0.086 | 132.35 |
| 3 | TENET HEALTHCARE CORP | THC | 0.086 | 5.24 |
| 12 | APPLE INC | AAPL | 0.086 | 584.00 |
| New | QUANTA SERVICES INC | PWR | 0.086 | 24.07 |
| 2 | XL GROUP PLC | XL | 0.084 | 21.04 |
| 2 | HUNTINGTON BANCSHARES | HBAN | 0.080 | 6.40 |
| New | MONSTER BEVERAGE CORP | MNST | 0.073 | 71.20 |
| New | GOODYEAR TIRE \& RUBBER CO | GT | 0.070 | 11.81 |
| 6 | BB\&T CORP | BBT | 0.069 | 30.85 |
| New | ASSURANT INC | AIZ | 0.065 | 34.84 |
| New | LOEWS CORP | L | 0.064 | 40.91 |
| 3 | GAP INC | GPS | 0.064 | 27.36 |
| 3 | WYNDHAM WORLDWIDE CORP | WYN | 0.063 | 52.74 |
| 2 | CBS CORP | CBS | 0.063 | 32.78 |
| New | KLA-TENCOR CORP | KLAC | 0.061 | 49.25 |
| New | FIFTH THIRD BANCORP | FITB | 0.056 | 13.40 |
| New | MONSANTO CO | MON | 0.056 | 82.78 |
|  |  |  |  |  |

## Equity Duration

## Top 50 S\&P 500 Companies By HIGH DURATION

Equity Duration: An adaptation of our Dividend Discount Model that measures the interest-rate sensitivity of a stock.
Longer duration (higher numbers) suggests more interest-rate sensitivity.


868788899091929394959697989900010203040506070809101112


| Absolute Returns |  |
| :--- | ---: |
| Last 1 Month | $3.65 \%$ |
| Last 3 Months | $-4.25 \%$ |
| Last 6 M onths | $8.37 \%$ |
| Last 12 M onths | $-0.19 \%$ |
| 2012 YTD | $8.37 \%$ |

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for July

| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  |  | Equity | Price  <br> Scrn. Company |
|  |  | Ticker | Duration | 06/29/2012 |
| 42 | PATTERSON COMPANIES INC | PDCO | 72.2 | 34.47 |
| New | SOUTHWEST AIRLINES | LUV | 57.0 | 9.22 |
| 33 | TYSON FOODS INC -CL A | TSN | 51.5 | 18.83 |
| New | DUKE ENERGY CORP | DUK | 48.4 | 69.18 |
| 7 | PERRIGO CO | PRGO | 45.2 | 117.93 |
| 17 | TEXAS INSTRUMENTS INC | TXN | 45.0 | 28.69 |
| 41 | NORDSTROM INC | JWN | 44.4 | 49.69 |
| 12 | AMAZON.COM INC | AMZN | 43.3 | 228.35 |
| 5 | XL GROUP PLC | XL | 42.4 | 21.04 |
| 17 | INTEL CORP | INTC | 40.6 | 26.65 |
| 8 | AMERICAN INTERNATIONAL GROUIAIG | 40.4 | 32.09 |  |
| 7 | MASTERCARD INC | MA | 39.1 | 430.11 |
| 5 | CITRIX SYSTEMS INC | CTXS | 38.8 | 83.94 |
| 30 | ROBERT HALF INTL INC | RHI | 38.7 | 28.57 |
| 12 | BALL CORP | BLL | 38.6 | 41.05 |
| 12 | INTUITIVE SURGICAL INC | ISRG | 38.4 | 553.79 |
| 4 | NRG ENERGY INC | NRG | 38.2 | 17.36 |
| 26 | SALESFORCE.COM INC | CRM | 38.2 | 138.26 |
| 15 | MEAD JOHNSON NUTRITION CO | MJN | 37.9 | 80.51 |
| 5 | WHOLE FOODS MARKET INC | WFM | 37.8 | 95.32 |
| 4 | VERISIGN INC | VRSN | 37.7 | 43.57 |
| 8 | TJX COMPANIES INC | TJX | 37.6 | 42.93 |
| 17 | COSTCO WHOLESALE CORP | COST | 37.5 | 95.00 |
| 2 | EDWARDS LIFESCIENCES CORP | EW | 37.3 | 103.30 |
| 23 | PRECISION CASTPARTS CORP | PCP | 36.8 | 164.49 |


| Mo. |  |  |
| :--- | ---: | ---: |
| In | Equity | Price |
| Scrn. Company | Ticker | Duration |

## Earnings Torpedo

## Top S\&P 500 Companies by LOW EPS TORPEDO

Earnings Torpedo: I/B/E/S FY2 estimate less latest actual annual EPS divided by month-end price.


868788899091929394959697989900010203040506070809101112


| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $5.52 \%$ |
| Last 3 Months | $-6.15 \%$ |
| Last 6 M onths | $3.59 \%$ |
| Last 12 Months | $-1.98 \%$ |
| 2012 YTD | $3.59 \%$ |

Source: BofA Merill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end May 1986 to month end December 1988. The unshaded
portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for July

| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  |  | EPS | Price |
| Scrn. Company | Ticker | Torpedo | $06 / 29 / 2012$ |  |
|  |  |  |  |  |
| 8 | ALPHA NATURAL RESOURCES INC |  |  |  |
| 7 | FIRST SOLAR INC | -0.264 | 8.71 |  |
| 5 | WPX ENERGY INC | FSLR | -0.138 | 15.06 |
| 30 | NRG ENERGY INC | WPX | -0.083 | 16.18 |
| 6 | SPRINT NEXTEL CORP | NRG | -0.066 | 17.36 |
| 3 | CHESAPEAKE ENERGY CORP | S | -0.065 | 3.26 |
| New | LAM RESEARCH CORP | -0.063 | 18.60 |  |
| 15 | FOREST LABORATORIES $-C L A$ | LRCX | -0.063 | 37.74 |
| 9 | DEVRY INC | FRX | -0.059 | 34.99 |
| 21 | APOLLO GROUP INC $-C L A$ | APOL | -0.052 | 30.97 |
| 3 | SANDISK CORP | SNDK | -0.041 | 36.19 |
| 2 | CONOCOPHILLIPS | COP | -0.038 | 56.48 |
| 27 | EXELON CORP | EXC | -0.036 | 37.62 |
| 21 | ENTERGY CORP | ETR | -0.033 | 67.89 |
| 9 | NETFLIX INC | NFLX | -0.031 | 68.49 |
| 2 | AVON PRODUCTS | AVP | -0.028 | 16.21 |
| 29 | DIAMOND OFFSHRE DRILLING INC | DO | -0.028 | 59.13 |
| 3 | CLIFFS NATURAL RESOURCES INC CLF | -0.028 | 49.29 |  |
| 5 | PITNEY BOWES INC | PBI | -0.027 | 14.97 |
| 8 | HEWLETT-PACKARD CO | HPQ | -0.023 | 20.11 |
| 4 | CONSOL ENERGY INC | CNX | -0.022 | 30.24 |
| 4 | NEWFIELD EXPLORATION CO | NFX | -0.022 | 29.31 |
| 8 | COMPUTER SCIENCES CORP | CSC | -0.021 | 24.82 |
| 28 | AMEREN CORP | AEE | -0.020 | 33.54 |
| 10 | CORNING INC | GLW | -0.019 | 12.93 |


| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  |  | EPS | Price |
| Scrn. Company | Ticker | Torpedo | 06/29/2012 |  |
|  |  |  |  |  |
| 5 | WINDSTREAM CORP | WIN | -0.018 | 9.66 |
| 18 | LILLY (ELI) \& CO | LLY | -0.017 | 42.91 |
| 17 | LEXMARK INTL INC -CL A | LXK | -0.015 | 26.58 |
| 12 | LINEAR TECHNOLOGY CORP | LLTC | -0.015 | 31.33 |
| 2 | METROPCS COMMUNICATIONS INC PCS | -0.014 | 6.05 |  |
| 29 | EDISON INTERNATIONAL | EIX | -0.013 | 46.20 |
| 5 | ARCHER-DANIELS-MIDLAND CO | ADM | -0.013 | 29.52 |
| 8 | APPLIED MATERIALS INC | AMAT | -0.013 | 11.45 |
| 5 | CF INDUSTRIES HOLDINGS INC | CF | -0.012 | 193.74 |
| 17 | PPL CORP | PPL | -0.012 | 27.81 |
| 6 | PG\&E CORP | PCG | -0.011 | 45.27 |
| 3 | SOUTHWESTERN ENERGY CO | SWN | -0.011 | 31.93 |
| 9 | HOSPIRA INC | HSP | -0.011 | 34.98 |
| 6 | BRISTOL-M YERS SQUIBB CO | BMY | -0.011 | 35.95 |
| 3 | PEABODY ENERGY CORP | BTU | -0.010 | 24.52 |
| 2 | JDS UNIPHASE CORP | JDSU | -0.010 | 11.00 |
| 29 | PUBLIC SERVICE ENTRP GRP INC | PEG | -0.010 | 32.50 |
| 5 | MARATHON PETROLEUM CORP | MPC | -0.009 | 44.92 |
| 6 | FIRSTENERGY CORP | FE | -0.008 | 49.19 |
| 2 | DELL INC | DELL | -0.008 | 12.51 |
| 6 | KEYCORP | KEY | -0.008 | 7.74 |
| 5 | NORTHROP GRUMMAN CORP | NOC | -0.007 | 63.79 |
| 29 | CENTURYLINK INC | CTL | -0.006 | 39.49 |
| 5 | ALTERA CORP | ALTR | -0.006 | 33.84 |
| New | JUNIPER NETWORKS INC | JNPR | -0.004 | 16.31 |
|  |  |  |  |  |

## Negative Earnings Surprise

Top S\&P 500 Companies by NEGATIVE EPS SURPRISE


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for July

| M 0 . |  |  |  |  | M 0 . |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  |  | MLvs. Price |  | In |  |  | ML vs. Price |  |
| Scrn. | Company | Ticker | Con | 06/29/2012 | Scrn. | Company | Ticker | Con | 06/29/2012 |
| 2 | AVON PRODUCTS | AVP | 10 | 16.21 | 2 | CAMPBELL SOUPCO | C PB | 9 | 33.38 |
| 4 | COACHINC | COH | 10 | 58.48 | 5 | CENTERPOINT ENERGY INC | CNP | 9 | 20.67 |
| 3 | COVIDIEN PLC | COV | 10 | 53.50 | New | CHEVRON CORP | $C \vee X$ | 9 | 105.50 |
| 33 | CVS CAREMARK CORP | CVS | 10 | 46.73 | 2 | CLIFFS NATURAL RESOURCES INC | CLF | 9 | 49.29 |
| New | DIRECTV | DTV | 10 | 48.82 | 7 | COCA-COLACO | KO | 9 | 78.19 |
| 2 | EDISON INTERNATIONAL | EIX | 10 | 46.20 | New | CONOCOPHILLIPS | COP | 9 | 55.88 |
| 9 | GOODRICHCORP | G R | 10 | 126.90 | 3 | CSX CORP | CSX | 9 | 22.36 |
| 9 | HOSPIRA INC | HSP | 10 | 34.98 | N ew | DAVITA INC | DVA | 9 | 98.21 |
| 2 | KIM BERLY-CLARK CORP | KM B | 10 | 83.77 | New | DEVRY INC | DV | 9 | 30.97 |
| 17 | LABORATORY CP OF AMER HLDGS | LH | 10 | 92.61 | 2 | FEDEX CORP | FDX | 9 | 91.61 |
| 4 | MOLSON COORS BREWING CO | TAP | 10 | 41.61 | N ew | FORD MOTOR CO | F | 9 | 9.59 |
| 11 | NORDSTROM INC | JWN | 10 | 49.69 | New | GAP INC | G PS | 9 | 27.36 |
| 5 | NORTHEAST UTILITIES | NU | 10 | 38.81 | 2 | LIMITED BRANDS INC | LTD | 9 | 42.53 |
| 2 | PENNEY (J C) CO | JCP | 10 | 23.31 | 5 | LOCKHEED MARTIN CORP | LM T | 9 | 87.08 |
| 5 | PFIZER INC | PFE | 10 | 23.00 | 2 | MACY'S INC | M | 9 | 34.35 |
| 80 | QUALCOMM INC | QCOM | 10 | 55.68 | 6 | MCDONALD'S CORP | MCD | 9 | 88.53 |
| 2 | ROBERT HALF INTLINC | R HI | 10 | 28.57 | 2 | MEAD JOHNSON NUTRITION CO | M JN | 9 | 80.51 |
| 3 | ROCKWELL COLLINS INC | COL | 10 | 49.35 | 3 | MOSAIC CO | MOS | 9 | 54.76 |
| 3 | SCHLUMBERGER LTD | SLB | 10 | 64.91 | New | PEOPLE'S UNITED FINLINC | PBCT | 9 | 11.61 |
| 7 | STAPLES INC | SPLS | 10 | 13.05 | 7 | PEPSICO INC | PEP | 9 | 70.66 |
| 5 | TERADYNEINC | TER | 10 | 14.06 | New | PERRIGOCO | PRGO | 9 | 117.93 |
| 2 | TJX COMPANIES INC | TJX | 10 | 42.93 | 5 | PG\&ECOR P | PCG | 9 | 45.27 |
| 3 | UNION PACIFIC CORP | UNP | 10 | 119.31 | 2 | QUEST DIAGNOSTICS INC | DGX | 9 | 59.90 |
| 10 | WYNN RESORTS LTD | WYNN | 10 | 103.72 | 3 | ROSS STORES INC | ROST | 9 | 62.47 |
| 6 | ZIMMER HOLDINGS INC | ZM H | 10 | 64.36 | 5 | SEALED AIR CORP | SEE | 9 | 15.44 |
| 2 | ABBOTT LABORATORIES | ABT | 9 | 64.47 | 3 | STRYKER CORP | SYK | 9 | 55.10 |
| 2 | ACELTD | ACE | 9 | 74.13 | 5 | SUNOCOINC | SUN | 9 | 47.50 |
| 3 | ADVANCED MICRO DEVICES | AMD | 9 | 5.73 | 3 | SUNTRUST BANKS INC | STI | 9 | 24.23 |
| 2 | ANALOG DEVICES | ADI | 9 | 37.67 | 3 | TEXTRON INC | TXT | 9 | 24.87 |
| 10 | BALL CORP | BLL | 9 | 41.05 | 2 | WHOLE FOODS MARKET INC | WFM | 9 | 95.32 |
| New | BOSTON PROPERTIES INC | $B \times P$ | 9 | 108.37 | 2 | WISCONSIN ENERGY CORP | WEC | 9 | 39.57 |

## One-Year Return on Equity

## Top 50 S\&P 500 Companies By ROE (1-Yr Average)

Return on Equity One-Year Average: Net income divided by average equity provided.


868788899091929394959697989900010203040506070809101112


| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $3.05 \%$ |
| Last 3 Months | $-5.50 \%$ |
| Last 6 Months | $7.51 \%$ |
| Last 12 Months | $1.00 \%$ |
| 2012 YTD | $7.51 \%$ |

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end April 1997. The unshaded portion represents actual performance since May 1997. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

## Screen for July

| Mo. In |  |  |  | Price | $\begin{aligned} & \text { Mo } \\ & \text { In } \end{aligned}$ |  |  |  | Price |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn. | Company | Ticker | ROE | 06/29/2012 | Scr | Company | Ticker | ROE | 06/29/2012 |
| 41 | PHILIP MORRIS INTERNATIONAL | PM | 430.5 | 87.26 | 63 | MCGRAW-HILL COMPANIES | MHP | 42.5 | 45.00 |
| 2 | FORD MOTOR CO | F | 200.3 | 9.59 | 84 | ROCKWELL COLLINS INC | COL | 41.8 | 49.35 |
| 36 | WESTERN UNION CO | WU | 192.8 | 16.84 | 10 | DEERE \& CO | DE | 40.1 | 80.87 |
| New | LIMITED BRANDS INC | LTD | 162.5 | 42.53 | 54 | GILEAD SCIENCES INC | GILD | 39.1 | 51.28 |
| 171 | COLGATE-PALMOLIVE CO | CL | 104.0 | 104.10 | 12 | CATERPILLAR INC | CAT | 38.3 | 84.91 |
| 63 | LOCKHEED MARTIN CORP | LMT | 103.5 | 87.08 | 63 | MICROSOFT CORP | MSFT | 38.2 | 30.59 |
| 30 | BOEING CO | BA | 97.3 | 74.30 | 2 | MCDONALD'S CORP | MCD | 38.2 | 88.53 |
| 18 | LINEAR TECHNOLOGY CORP | LLTC | 84.3 | 31.33 | 4 | TRIPADVISOR INC | TRIP | 37.7 | 44.69 |
| 119 | YUM BRANDS INC | YUM | 77.1 | 64.42 | 12 | ROCKWELL AUTOMATION | ROK | 37.6 | 66.06 |
| 8 | HERSHEY CO | HSY | 76.9 | 72.03 | 3 | EXPRESS SCRIPTS HOLDING CO | ESRX | 36.1 | 55.83 |
| 39 | ALTRIA GROUP INC | MO | 74.9 | 34.55 | 9 | cummins inc | CMI | 36.0 | 96.91 |
| 5 | MARRIOTT INTL INC | MAR | 74.7 | 39.20 | 20 | DELL INC | DELL | 35.9 | 12.51 |
| 60 | INTL BUSINESS MACHINES CORP | IBM | 74.0 | 195.58 | 17 | Joy Global inc | joy | 35.9 | 56.73 |
| 6 | VERISIGN INC | VRSN | 68.5 | 43.57 | 6 | C H ROBINSON WORLDWIDE INC | CHRW | 35.6 | 58.53 |
| 12 | ACCENTURE PLC | ACN | 66.2 | 60.09 | 55 | PAYCHEXINC | PAYX | 35.3 | 31.41 |
| 113 | CAMPBELL SOUP CO | CPB | 64.0 | 33.38 | 3 | MASTERCARD INC | MA | 35.0 | 430.11 |
| 149 | KELLOGG CO | K | 56.0 | 49.33 | 96 | WATERS CORP | WAT | 35.0 | 79.47 |
| 94 | COACH INC | COH | 53.8 | 58.48 | 5 | CF INDUSTRIES HOLDINGS INC | CF | 35.0 | 193.74 |
| 53 | TJX COMPANIES INC | TJX | 51.1 | 42.93 | 19 | NETFLIX INC | NFLX | 34.4 | 68.49 |
| 14 | Priceline.com inc | PCLN | 50.6 | 664.52 | 6 | dU PONT (EI) DE NEMOURS | DD | 34.0 | 50.57 |
| 2 | UNITED PARCEL SERVICE INC | UPS | 49.5 | 78.76 | 5 | DOLLAR TREE INC | DLTR | 33.9 | 53.80 |
| 30 | APPLE INC | AAPL | 47.1 | 584.00 | 3 | FMC CORP | FMC | 33.8 | 53.48 |
| 9 | APOLLO GROUP INC -CLA | APOL | 46.8 | 36.19 | 3 | FAMILY DOLLAR STORES | FDO | 33.8 | 66.48 |
| 4 | ROSS STORES INC | ROST | 45.9 | 62.47 | 2 | BAXTER INTERNATIONAL INC | BAX | 33.3 | 53.15 |
| 2 | WYNN RESORTS LTD | WYNN | 43.5 | 103.72 | 6 | EASTMAN Chemical co | EMN | 33.0 | 50.37 |

## Five-Year Return on Equity

Top 50 S\&P 500 Companies By ROE (5-Yr Average)
Return on Equity Five-year Average: Five-year average return on equity.


868788899091929394959697989900010203040506070809101112


| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $3.29 \%$ |
| Last 3 M onths | $-5.27 \%$ |
| Last 6 M onths | $5.89 \%$ |
| Last 12 M onths | $0.95 \%$ |
| 2012 YTD | $5.89 \%$ |

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end April 1997. The unshaded portion represents actual performance since May 1997. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for July

| мо. In |  |  | $5-\mathrm{Yr}$ <br> Avg | Price | Mo. <br> In |  |  | 5-Yr <br> Avg <br> ROE | Price $06 / 29 / 2012$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn | Company | Ticker | ROE | 06/29/2012 | Scrn | Company | Ticker | ROE | 06/29/2012 |
| 49 | LORILLARD INC | LO | 200.7 | 131.95 | 61 | HEINZ (H J) CO | HNZ | 46.9 | 54.38 |
| 68 | AUTOZONE INC | AZO | 169.6 | 367.17 | 123 | WATERS CORP | WAT | 45.7 | 79.47 |
| 52 | PHILIP MORRIS INTERNATIONAL | PM | 162.8 | 87.26 | 94 | COACH INC | COH | 45.6 | 58.48 |
| 41 | BOEING CO | BA | 142.2 | 74.30 | 35 | MICROSOFT CORP | MSFT | 43.8 | 30.59 |
| 35 | LINEAR TECHNOLOGY CORP | LLTC | 136.0 | 31.33 | 134 | TJX COMPANIES INC | TJX | 43.7 | 42.93 |
| 61 | YUM BRANDS INC | YUM | 131.6 | 64.42 | 4 | TRIPADVISOR INC | TRIP | 42.7 | 44.69 |
| 61 | PITNEY BOWES INC | PBI | 125.2 | 14.97 | 61 | ROCKWELL COLLINS INC | COL | 42.6 | 49.35 |
| 114 | COLGATE-PALMOLIVE CO | CL | 90.1 | 104.10 | 4 | LIMITED BRANDS INC | LTD | 42.0 | 42.53 |
| 52 | WINDSTREAM CORP | WIN | 90.1 | 9.66 | 5 | TENET HEALTHCARE CORP | THC | 41.1 | 5.24 |
| 61 | CAMPBELL SOUP CO | CPB | 71.7 | 33.38 | 5 | NETFLIX INC | NFLX | 38.8 | 68.49 |
| 29 | LOCKHEED MARTIN CORP | LMT | 70.9 | 87.08 | 16 | ROSS STORES INC | ROST | 38.2 | 62.47 |
| 31 | MEAD JOHNSON NUTRITION CO | MJN | 69.5 | 80.51 | 32 | PRICELINE.COM INC | PCLN | 38.1 | 664.52 |
| 136 | AVON PRODUCTS | AVP | 66.8 | 16.21 | 111 | FEDERATED INVESTORS INC | FII | 37.9 | 21.85 |
| 12 | ACCENTURE PLC | ACN | 65.0 | 60.09 | 29 | NORDSTROM INC | JWN | 35.6 | 49.69 |
| 64 | HERSHEY CO | HSY | 64.1 | 72.03 | 36 | PAYCHEX INC | PAYX | 35.5 | 31.41 |
| 28 | ALTRIA GROUP INC | MO | 62.8 | 34.55 | 100 | PEPSICO INC | PEP | 35.0 | 70.66 |
| 40 | INTL BUSINESS MACHINES CORP | IBM | 61.6 | 195.58 | New | MONSTER BEVERAGE CORP | MNST | 34.8 | 71.20 |
| 17 | DIRECTV | DTV | 58.8 | 48.82 | 17 | FMC TECHNOLOGIES INC | FTI | 34.8 | 39.23 |
| 61 | KELLOGG CO | K | 58.0 | 49.33 | 53 | CATERPILLAR INC | CAT | 34.8 | 84.91 |
| 122 | APOLLO GROUP INC -CLA | APOL | 56.0 | 36.19 | 28 | KIMBERLY-CLARK CORP | KM ${ }^{\text {b }}$ | 34.2 | 83.77 |
| 3 | EXPRESS SCRIPTS HOLDING CO | ESRX | 53.0 | 55.83 | 13 | BLOCK H\&RINC | HRB | 33.8 | 15.98 |
| 16 | GILEAD SCIENCES INC | GILD | 51.2 | 51.28 | 17 | ALTERA CORP | ALTR | 33.7 | 33.84 |
| 108 | DELL INC | DELL | 48.5 | 12.51 | 16 | C H ROBINSON WORLDWIDE INC | CHRW | 33.6 | 58.53 |
| 17 | JOY GLOBAL INC | JOY | 48.3 | 56.73 | 5 | CF INDUSTRIES HOLDINGS INC | CF | 32.8 | 193.74 |
| 52 | MCGRAW-HILL COMPANIES | MHP | 47.0 | 45.00 | 9 | APPLE INC | AAPL | 32.8 | 584.00 |

## One-Year Return on Equity (Adjusted for Debt)

Top 50 S\&P 500 Companies By ROE (1-Yr Avg. Adj. for Debt)
Return on Equity One-Year Average (Adjusted for Debt): The ROE of companies with higher debt levels are considered lower than those of companies with lower debt levels based on their debt-to-equity ratios.


868788899091929394959697989900010203040506070809101112


| Absolute Returns |  |
| :--- | ---: |
| Last 1 Month | $3.01 \%$ |
| Last 3 Months | $-4.78 \%$ |
| Last 6 M onths | $9.43 \%$ |
| Last 12 Months | $5.07 \%$ |
| 2012 YTD | $9.43 \%$ |

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end April 1997. The unshaded portion represents actual performance since May 1997. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for July


# Five-Year Return on Equity (Adjusted by Debt) 

Top 50 S\&P 500 Companies By ROE (5-Yr Avg. Adj. for Debt)
Return on Equity Five-year Average (Adjusted for Debt): The average five year ROE of companies with higher debt levels are considered lower than those of companies with lower debt levels based on their debt-to-equity ratios.


| Mo. |  | Debt |  |  | Mo. |  | Debt |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  | Adj 5Yr Price |  |  | In |  | Adj 5Yr Price |  |  |
| Scrn. | Company | Ticker | ROE | 06/29/2012 | Scrn | Company | Ticker | ROE | 06/29/2012 |
| 7 | ACCENTURE PLC | ACN | 65.0 | 60.09 | 23 | STARBUCKS CORP | SBUX | 20.7 | 53.32 |
| 60 | APOLLO GROUP INC -CLA | APOL | 50.4 | 36.19 | 3 | FOSSIL INC | FOSL | 20.7 | 76.54 |
| 94 | COACH INC | COH | 45.1 | 58.48 | 29 | CORNING INC | GLW | 20.4 | 12.93 |
| 36 | MICROSOFT CORP | MSFT | 36.2 | 30.59 | 64 | CHEVRON CORP | CVX | 20.4 | 105.50 |
| 31 | ROSS STORES INC | ROST | 34.6 | 62.47 | 28 | TOTAL SYSTEM SERVICES INC | TSS | 20.0 | 23.93 |
| 68 | TJX COMPANIES INC | TJX | 33.4 | 42.93 | 17 | FLOWSERVE CORP | FLS | 19.8 | 114.75 |
| 29 | MASTERCARD INC | MA | 32.1 | 430.11 | 13 | BROWN-FORMAN -CL B | BF.B | 19.7 | 96.85 |
| 65 | VARIAN MEDICAL SYSTEMS INC | VAR | 30.0 | 60.77 | 181 | JOHNSON \& JOHNSON | JNJ | 19.5 | 67.56 |
| 51 | AMAZON.COM INC | AMZN | 28.4 | 228.35 | 45 | PRECISION CASTPARTS CORP | PCP | 19.5 | 164.49 |
| 101 | EXXON MOBIL CORP | XOM | 26.6 | 85.57 | 181 | SIGMA-ALDRICH CORP | SIAL | 18.9 | 73.93 |
| 2 | PRICELINE.COM INC | PCLN | 25.3 | 664.52 | 17 | FMC TECHNOLOGIES INC | FTI | 18.9 | 39.23 |
| 14 | TERADATA CORP | TDC | 25.3 | 72.01 | 9 | FLIR SYSTEMS INC | FLIR | 18.6 | 19.50 |
| 21 | MCGRAW-HILL COMPANIES | M HP | 25.0 | 45.00 | 12 | GOOGLE INC | GOOG | 18.5 | 580.07 |
| New | BLOCK H\&R INC | HRB | 23.4 | 15.98 | 5 | CHIPOTLE MEXICAN GRILL INC | CMG | 18.5 | 379.95 |
| 35 | 3M CO | MMM | 22.2 | 89.60 | 53 | SCHLUMBERGER LTD | SLB | 18.4 | 64.91 |
| 61 | AUTOMATIC DATA PROCESSING | ADP | 22.1 | 55.66 | 2 | DELL INC | DELL | 18.4 | 12.51 |
| 5 | CF INDUSTRIES HOLDINGS INC | CF | 22.1 | 193.74 | 52 | FLUOR CORP | FLR | 18.2 | 49.34 |
| 4 | BIG LOTS INC | BIG | 21.6 | 40.79 | 2 | INTUIT INC | INTU | 17.8 | 59.35 |
| 29 | DIAMOND OFFSHRE DRILLING INC | DO | 21.5 | 59.13 | 3 | ROCKWELL COLLINS INC | COL | 17.8 | 49.35 |
| 59 | CUMMINS INC | CMI | 21.4 | 96.91 | 4 | LILLY (ELI) \& CO | LLY | 17.4 | 42.91 |
| 12 | GRAINGER (W W) INC | GWW | 21.2 | 191.24 | 3 | FEDERATED INVESTORS INC | FII | 17.4 | 21.85 |
| 112 | NIKE INC | NKE | 21.2 | 87.78 | 8 | MICROCHIP TECHNOLOGY INC | MCHP | 17.2 | 33.08 |
| 36 | WESTERN DIGITAL CORP | WDC | 20.9 | 30.48 | 3 | ROCKWELL AUTOMATION | ROK | 17.1 | 66.06 |
| 10 | MOSAIC CO | MOS | 20.9 | 54.76 | New | LAM RESEARCH CORP | LRCX | 17.1 | 37.74 |
| 18 | WATERS CORP | WAT | 20.9 | 79.47 | 17 | SHERWIN-WILLIAMS CO | SHW | 17.0 | 132.35 |

## Return on Assets

## Top 50 S\&P 500 Companies by ROA.

Return on Assets: Net income plus interest and taxes as a percent of average total assets.


868788899091929394959697989900010203040506070809101112


| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $1.45 \%$ |
| Last 3 M onths | $-6.50 \%$ |
| Last 6 M onths | $10.48 \%$ |
| Last 12 M onths | $5.55 \%$ |
| 2012 YTD | $10.48 \%$ |

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end April 1997. The unshaded portion represents actual performance since May 1997. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for July

Mo.
$\begin{array}{lr}\text { In } & \text { Price } \\ \text { Scrn Company }\end{array}$
Scrn. Company
Ticker

| COH | 34.7 | 58.48 |
| :--- | ---: | ---: |
| LO | 31.4 | 131.95 |
| AAPL | 31.4 | 584.00 |
| PCLN | 27.8 | 664.52 |
| LLTC | 27.4 | 31.33 |
| PM | 24.6 | 87.26 |
| MNST | 23.6 | 71.20 |
| FAST | 22.7 | 40.31 |
| MSFT | 21.4 | 30.59 |
| MCO | 21.4 | 36.55 |
| ROST | 21.1 | 62.47 |
| TRIP | 21.1 | 44.69 |
| CHRW | 20.9 | 58.53 |
| DLTR | 20.8 | 53.80 |
| MA | 20.6 | 430.11 |
| TJX | 20.0 | 42.93 |
| FOSL | 19.8 | 76.54 |
| APOL | 19.8 | 36.19 |
| MJN | 19.8 | 80.51 |
| TROW | 19.5 | 62.96 |
| CL | 19.4 | 104.10 |
| INTC | 18.2 | 26.65 |
| ISRG | 18.1 | 553.79 |
| CTSH | 17.8 | 60.00 |
| SBUX | 17.7 | 53.32 |

Mo.
In
Scrn. Company

Ticker ROA 06/29/2012

| 10 | BED BATH \& BEYOND INC | BBBY | 17.5 | 61.80 |
| :--- | :--- | :--- | :--- | ---: |
| 5 | CF INDUSTRIES HOLDINGS INC | CF | 17.3 | 193.74 |
| 15 | CHIPOTLE MEXICAN GRILL INC | CMG | 17.2 | 379.95 |
| 9 | CUMMINS INC | CMI | 17.2 | 96.91 |
| 6 | YUM BRANDS INC | YUM | 17.0 | 64.42 |
| 2 | MCDONALD'S CORP | MCD | 17.0 | 88.53 |
| 12 | ACCENTURE PLC | ACN | 17.0 | 60.09 |
| 62 | WATERS CORP | WAT | 16.2 | 79.47 |
| 9 | F5 NETWORKS INC | FFIV | 16.1 | 99.56 |
| 15 | KLA-TENCOR CORP | KLAC | 16.1 | 49.25 |
| 48 | VARIAN MEDICAL SYSTEMS INC | VAR | 15.9 | 60.77 |
| 6 | GRAINGER (W W) INC | GWW | 15.8 | 191.24 |
| 27 | ALTERA CORP | ALTR | 15.8 | 33.84 |
| 38 | GOOGLE INC | GOOG | 15.8 | 580.07 |
| 54 | GILEAD SCIENCES INC | GILD | 15.8 | 51.28 |
| 6 | TERADYNE INC | TER | 15.2 | 14.06 |
| 3 | HERSHEY CO | HSY | 15.1 | 72.03 |
| 6 | AUTOZONE INC | AZO | 15.1 | 367.17 |
| 2 | DUN \& BRADSTREET CORP | DNB | 14.7 | 71.17 |
| 11 | TERADATA CORP | TDC | 14.7 | 72.01 |
| 6 | NIKE INC | NKE | 14.6 | 87.78 |
| 3 | CELGENE CORP | CELG | 14.5 | 64.16 |
| 2 | JOY GLOBAL INC | JOY | 14.5 | 56.73 |
| 3 | MATTEL INC | MAT | 14.4 | 32.44 |
| 8 | FRANKLIN RESOURCES INC | BEN | 14.4 | 110.99 |

## Return on Capital

## Top 50 S\&P 500 Companies By ROC

Return on Capital: The sum of net income, interest expense and minority interest, as a percent of average total invested capital which is inclusive of long-term debt, preferred stock, common equity, and minority interest.



| Absolute Returns |  |
| :--- | ---: |
| Last 1 Month | $2.12 \%$ |
| Last 3 Months | $-7.00 \%$ |
| Last 6 Months | $7.37 \%$ |
| Last 12 Months | $2.13 \%$ |
| 2012 YTD | $7.37 \%$ |

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end April 1997. The unshaded portion
epresents actual performance since May 1997. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for July

| M o. In |  |  | Ret on | Price | Mo. <br> In |  |  | Ret on | Price |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn. | Company | Ticker | Cap | 06/29/2012 | Scrn. | Company | Ticker | Cap | 06/29/2012 |
| 8 | DUN \& BRADSTREET CORP | DNB | 132\% | 71.17 | 52 | YUM BRANDS INC | YUM | 34\% | 64.42 |
| 49 | LORILLARD INC | LO | 110\% | 131.95 | 5 | FORD MOTOR CO | F | 32\% | 9.59 |
| 12 | ACCENTURE PLC | ACN | 68\% | 60.09 | 78 | MICROSOFT CORP | MSFT | 32\% | 30.59 |
| 52 | PHILIP MORRIS INTERNATIONAL | PM | 62\% | 87.26 | 7 | DOLLAR TREE INC | DLTR | 31\% | 53.80 |
| 24 | MOODY'S CORP | MCO | 59\% | 36.55 | 100 | MCGRAW-HILL COMPANIES | M HP | 31\% | 45.00 |
| 94 | COACH INC | COH | 53\% | 58.48 | New | MONSTER BEVERAGE CORP | MNST | 31\% | 71.20 |
| 45 | AUTOZONE INC | AZO | 51\% | 367.17 | 6 | CF INDUSTRIES HOLDINGS INC | CF | 30\% | 193.74 |
| 33 | APPLE INC | AAPL | 47\% | 584.00 | 11 | HERSHEY CO | HSY | 30\% | 72.03 |
| 11 | APOLLO GROUP INC -CLA | APOL | 43\% | 36.19 | 112 | ROCKWELL COLLINS INC | COL | 30\% | 49.35 |
| 28 | MEAD JOHNSON NUTRITION CO | MJN | 43\% | 80.51 | 65 | VARIAN MEDICAL SYSTEMS INC | VAR | 29\% | 60.77 |
| 32 | PRICELINE.COM INC | PCLN | 43\% | 664.52 | 3 | FOSSIL INC | FOSL | 28\% | 76.54 |
| 31 | ROSS STORES INC | ROST | 42\% | 62.47 | 7 | TRIPADVISOR INC | TRIP | 28\% | 44.69 |
| 48 | TJX COMPANIES INC | TJX | 42\% | 42.93 | 3 | ALTRIA GROUP INC | MO | 27\% | 34.55 |
| 140 | COLGATE-PALMOLIVE CO | CL | 41\% | 104.10 | 11 | DIRECTV | DTV | 27\% | 48.82 |
| 5 | CLOROX COIDE | CLX | 37\% | 72.46 | 12 | ROCKWELL AUTOMATION | ROK | 27\% | 66.06 |
| 49 | INTL BUSINESS MACHINES CORP | IBM | 37\% | 195.58 | 2 | BED BATH \& BEYOND INC | BBBY | 26\% | 61.80 |
| 48 | LINEAR TECHNOLOGY CORP | LLTC | 37\% | 31.33 | 6 | FASTENALCO | FAST | 26\% | 40.31 |
| 44 | LOCKHEED MARTIN CORP | LM T | 37\% | 87.08 | 29 | FREEPORT-MCMORAN COP\&GOLD | FCX | 26\% | 34.07 |
| 69 | WESTERN UNION CO | WU | 37\% | 16.84 | 17 | JOY GLOBAL INC | JOY | 26\% | 56.73 |
| 65 | C H ROBINSON WORLDWIDE INC | CHRW | 35\% | 58.53 | New | CAM PBELL SOUP CO | CPB | 25\% | 33.38 |
| 36 | MASTERCARD INC | MA | 35\% | 430.11 | 2 | FAMILY DOLLAR STORES | FDO | 25\% | 66.48 |
| 59 | PAYCHEX INC | PAYX | 35\% | 31.41 | 2 | STARBUCKS CORP | SBUX | 25\% | 53.32 |
| 5 | VERISIGN INC | VRSN | 35\% | 43.57 | 2 | WATERS CORP | WAT | 25\% | 79.47 |
| 21 | BOEING CO | BA | 34\% | 74.30 | 2 | BRISTOL-M YERS SQUIBB CO | BM Y | 24\% | 35.95 |
| 15 | CUMMINS INC | CMI | 34\% | 96.91 | 7 | LIMITED BRANDS INC | LTD | 24\% | 42.53 |

## Beta

## Top 50 S\&P 500 Companies By BETA

Beta: A measure of non-diversifiable risk. It is calculated using a regression incorporating 60 months of price performance versus that of the S\&P 500.


868788899091929394959697989900010203040506070809101112

Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance


| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $3.81 \%$ |
| Last 3 M onths | $-12.40 \%$ |
| Last 6 M onths | $7.51 \%$ |
| Last 12 M onths | $-15.73 \%$ |
| 2012 YTD | $7.51 \%$ |

Screen for July

Mo.


## Variability of Earnings

Top S\&P 500 Companies by HIGH VARIABILITY OF EPS
Variability of EPS: The degree of variability in quarterly EPS over the past 5 years. Stocks are ranked from 10 to 1 with 10 being the most variable.

introduction and is not intended to be indicative of future performance
Screen for July

| In |  |  | EPS Price |  |
| :---: | :---: | :---: | :---: | :---: |
| Scrn | Company | Ticker | Risk | 06/29/2012 |
| 52 | AES CORP | AES | 10 | 12.83 |
| 45 | ALLEGHENY TECHNOLOGIES INC | ATI | 10 | 31.89 |
| 7 | BORGWARNER INC | BWA | 10 | 65.59 |
| 45 | BOSTON PROPERTIES INC | BXP | 10 | 108.37 |
| 39 | BROADCOM CORP | BRCM | 10 | 33.76 |
| 42 | CAPITAL ONE FINANCIAL CORP | COF | 10 | 54.66 |
| 22 | DOW CHEMICAL | DOW | 10 | 31.50 |
| 27 | HARLEY-DAVIDSON INC | HOG | 10 | 45.73 |
| 9 | INTL PAPER CO | IP | 10 | 28.91 |
| 42 | JPMORGAN CHASE \& CO | JPM | 10 | 35.73 |
| 81 | KROGER CO | KR | 10 | 23.19 |
| 30 | LIFE TECHNOLOGIES CORP | LIFE | 10 | 44.99 |
| 26 | MARSH \& MCLENNAN COS | M M C | 10 | 32.23 |
| 57 | MEADWESTVACO CORP | M WV | 10 | 28.75 |
| 36 | METLIFE INC | MET | 10 | 30.85 |
| 49 | MORGAN STANLEY | M S | 10 | 14.59 |
| 36 | NABORS INDUSTRIES LTD | NBR | 10 | 14.40 |
| 48 | NEWMONT MINING CORP | NEM | 10 | 48.51 |
| 15 | PACCAR INC | PCAR | 10 | 39.19 |
| 5 | PERKINELMER INC | PKI | 10 | 25.80 |
| 45 | PROGRESSIVE CORP-OHIO | PGR | 10 | 20.83 |
| 57 | PUBLIC STORAGE | PSA | 10 | 144.41 |
| 5 | RANGERESOURCES CORP | RRC | 10 | 61.87 |
| 46 | SALESFORCE.COM INC | CRM | 10 | 138.26 |
| 39 | SOUTHWESTERN ENERGY CO | SWN | 10 | 31.93 |
| 27 | STARWOOD HOTELS\&RESORTS Wr | HOT | 10 | 53.04 |
| 54 | UNITED PARCEL SERVICE INC | UPS | 10 | 78.76 |
| 38 | WASHINGTON POST -CLB | WPO | 10 | 373.82 |
| 17 | WYNN RESORTS LTD | WYNN | 10 | 103.72 |
| 35 | YAHOO INC | Y HOO | 10 | 15.83 |
| 45 | ALLSTATE CORP | ALL | 9 | 35.09 |


| In |  |  | EPS Price |  |
| :---: | :---: | :---: | :---: | :---: |
| Scrn | Company | Ticker | Risk | 06/29/2012 |
| 13 | ALPHA NATURAL RESOURCES INC | ANR | 9 | 8.71 |
| 8 | AMEREN CORP | AEE | 9 | 33.54 |
| 29 | AMERIPRISE FINANCIAL INC | AM P | 9 | 52.26 |
| 13 | AUTODESK INC | ADSK | 9 | 34.99 |
| 24 | CARMAX INC | KM X | 9 | 25.94 |
| 9 | CBRE GROUP INC | CBG | 9 | 16.36 |
| 8 | CBS CORP | CBS | 9 | 32.78 |
| 41 | CFINDUSTRIES HOLDINGS INC | C F | 9 | 193.74 |
| 9 | CLIFFS NATURAL RESOURCES INC | CLF | 9 | 49.29 |
| 26 | DENBURY RESOURCES INC | DNR | 9 | 15.11 |
| 2 | DU PONT (EI) DE NEMOURS | DD | 9 | 50.57 |
| 57 | EBAY INC | EBAY | 9 | 42.01 |
| 17 | EOG RESOURCES INC | EOG | 9 | 90.11 |
| 37 | FEDEX CORP | FDX | 9 | 91.61 |
| 15 | HESS CORP | HES | 9 | 43.45 |
| 15 | INTERPUBLIC GROUP OF COS | IPG | 9 | 10.85 |
| 42 | JOHNSON CONTROLS INC | JCI | 9 | 27.71 |
| New | LAM RESEARCH CORP | LRCX | 9 | 37.74 |
| 51 | LEGGETT \& PLATT INC | LEG | 9 | 21.13 |
| 32 | LIMITED BRANDS INC | LTD | 9 | 42.53 |
| 17 | MERCK \& CO | M R K | 9 | 41.75 |
| 10 | MOSAIC CO | MOS | 9 | 54.76 |
| 22 | NETAPP INC | NTAP | 9 | 31.82 |
| 22 | NRG ENERGY INC | NRG | 9 | 17.36 |
| 24 | NUCOR CORP | NUE | 9 | 37.90 |
| 18 | OWENS-ILLINOIS INC | 01 | 9 | 19.17 |
| 9 | ROBERT HALF INTL INC | R HI | 9 | 28.57 |
| 39 | SOUTHWEST AIRLINES | LUV | 9 | 9.22 |
| 24 | STARBUCKS CORP | SBUX | 9 | 53.32 |
| 4 | TITANIUM METALS CORP | TIE | 9 | 11.31 |
| 35 | VERISIGN INC | VRSN | 9 | 43.57 |
| 17 | VORNADO REALTY TRUST | VNO | 9 | 83.98 |

## Estimate Dispersion

## Top S\&P 500 Companies by EPS ESTIMATE DISPERSION

EPS Estimate Dispersion: The coefficient of variation among I/B/E/S FY2 ESTIMATES. Presented as a decile rank



Source: BofA Merrill Lynch US Quantitative Strategy
The performance chart represents actual returns since July 1989. There is no back tested performance.
Screen for July


## Price

## Top 50 S\&P 500 Companies By LOW PRICE

Low Price: Absolute price level of the stock at month-end.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded
portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its

introduction and is not intended to be indicative of future performance
Screen for July

Mo.

| Mo. |  |  |  |
| :--- | :--- | :--- | ---: |
| In |  | Price |  |
| Scrn. Company | 06/29/2012 |  |  |
|  |  |  |  |
| 59 | SPRINT NEXTEL CORP | S | 3.26 |
| 39 | FRONTIER COMMUNICATIONS COFFTR | 3.83 |  |
| 102 | TENET HEALTHCARE CORP | THC | 5.24 |
| 23 | GENWORTH FINANCIALINC | GNW | 5.66 |
| 36 | BOSTON SCIENTIFIC CORP | BSX | 5.67 |
| 67 | ADVANCED MICRO DEVICES | AMD | 5.73 |
| 11 | METROPCSCOMMUNICATIONS INCPCS | 6.05 |  |
| 96 | MICRON TECHNOLOGY INC | MU | 6.31 |
| 22 | HUDSON CITY BANCORP INC | HCBK | 6.37 |
| 123 | LSICORP | LSI | 6.37 |
| 43 | HUNTINGTON BANCSHARES | HBAN | 6.40 |
| 43 | REGIONS FINANCIALCORP | RF | 6.75 |
| 39 | KEYCORP | KEY | 7.74 |
| 47 | XEROXCORP | XRX | 7.87 |
| 17 | ETRADE FINANCIALCORP | ETFC | 8.04 |
| 21 | BANKOF AMERICACORP | BAC | 8.18 |
| 29 | FIRST HORIZON NATIONALCORP | FHN | 8.65 |
| 4 | ALPHANATURALRESOURCES INC | ANR | 8.71 |
| 15 | ALCOA INC | AA | 8.75 |
| 20 | SOUTHWEST AIRLINES | LUV | 9.22 |
| 18 | FORDMOTOR CO | F | 9.59 |
| 39 | WINDSTREAM CORP | WIN | 9.66 |
| 34 | PULTEGROUP INC | PHM | 10.70 |
| 98 | INTERPUBLIC GROUP OF COS | IPG | 10.85 |
| 13 | JDS UNIPHASE CORP | JDSU | 11.00 |

Mo.
In
Price
Scrn. Company

| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $4.87 \%$ |
| Last 3 M onths | $-8.40 \%$ |
| Last 6 Months | $5.89 \%$ |
| Last 12 Months | $-13.80 \%$ |
| 2012 YTD | $5.89 \%$ |


| 7 | TITANIUM METALS CORP | TIE | 11.31 |
| :--- | :--- | :--- | :--- |
| 30 | APPLIED MATERIALS INC | AMAT | 11.45 |
| 21 | PEOPLE'S UNITED FINL INC | PBCT | 11.61 |
| 8 | DONNELLEY (R R) \& SONS CO | RRD | 11.77 |
| 11 | GOODYEAR TIRE \&RUBBER CO | GT | 11.81 |
| 10 | SAIC INC | SAI | 12.12 |
| 5 | ELECTRONIC ARTS INC | EA | 12.35 |
| 4 | DELLINC | DELL | 12.51 |
| 31 | AES CORP | AES | 12.83 |
| 10 | CORNING INC | GLW | 12.93 |
| 13 | SCHWAB (CHARLES) CORP | SCHW | 12.93 |
| 9 | STAPLES INC | SPLS | 13.05 |
| 9 | CABLEVISION SYS CORP | -CLA | CVC |
| 24 | FIFTH THIRDBANCORP | FITB | 13.29 |
| 7 | NVIDIACORP | NVDA | 13.40 |
| 26 | MASCOCORP | MAS | 13.82 |
| 2 | TERADYNE INC | TER | 14.06 |
| 2 | NABORS INDUSTRIES LTD | NBR | 14.40 |
| 2 | MORGAN STANLEY | MS | 14.59 |
| New | SYMANTECCORP | SYMC | 14.61 |
| 16 | GANNETT CO | GCI | 14.73 |
| 2 | PITNEY BOWES INC | PBI | 14.97 |
| 2 | FIRST SOLAR INC | FSLR | 15.06 |
| New | DENBURY RESOURCES INC | DNR | 15.11 |
| New | SEALED AIR CORP | SEE | 15.44 |

## Neglect-Institutional Ownership

## Top 50 S\&P 500 Companies by Low Institutional holdings

Neglect: Those companies with the lowest proportions of float-adjusted shares held by institutional owners are considered more neglected.



| Absolute Returns |  |
| :--- | ---: |
| Last 1 M onth | $4.35 \%$ |
| Last 3 M onths | $-0.76 \%$ |
| Last 6 M onths | $6.13 \%$ |
| Last 12 M onths | $2.27 \%$ |
| 2012 YTD | $6.13 \%$ |

[^24]Screen for July

| Mo |  |  |  |  | Mo. |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| In |  |  | \% Held | Price | In |  |  | \% Held | Price |
| Scrn. | Company | Ticker | By Inst | 06/29/2012 | Scrn. | Company | Ticker | By Inst | 06/29/2012 |
| 2 | AMERICAN INTERNATIONAL GROUIAIG |  | 21.5\% | 32.09 | New | GAP INC | GPS | 58.5\% | 27.36 |
| 17 | TITANIUM METALS CORP | TIE | 27.3\% | 11.31 | 129 | TECO ENERGY INC | TE | 58.8\% | 18.06 |
| 27 | WAL-MART STORES INC | WMT | 31.7\% | 69.72 | 11 | ALCOA INC | AA | 59.0\% | 8.75 |
| 40 | HORMEL FOODS CORP | HRL | 33.5\% | 30.42 | 56 | PEPCO HOLDINGS INC | POM | 59.0\% | 19.57 |
| 136 | CONSOLIDATED EDISON INC | ED | 43.3\% | 62.19 | New | FIRST SOLAR INC | FSLR | 59.4\% | 15.06 |
| 191 | SOUTHERN CO | SO | 44.3\% | 46.30 | New | LOEWS CORP | L | 59.5\% | 40.91 |
| New | CAMPBELL SOUP CO | CPB | 45.6\% | 33.38 | 69 | PROGRESS ENERGY INC | PGN | 59.9\% | 60.17 |
| New | REYNOLDS AMERICAN INC | RAI | 47.5\% | 44.87 | 59 | DTE ENERGY CO | DTE | 60.1\% | 59.33 |
| 88 | EXXON MOBIL CORP | XOM | 50.0\% | 85.57 | 35 | INTL BUSINESS MACHINES CORP | IBM | 60.4\% | 195.58 |
| 42 | SCANA CORP | SCG | 51.2\% | 47.84 | 25 | ALTRIA GROUP INC | MO | 60.9\% | 34.55 |
| New | FRANKLIN RESOURCES INC | BEN | 51.3\% | 110.99 | New | LEUCADIA NATIONAL CORP | LUK | 61.2\% | 21.27 |
| 31 | SAIC INC | SAI | 51.6\% | 12.12 | 29 | BERKSHIRE HATHAWAY | BRK.B | 61.5\% | 83.33 |
| 30 | WINDSTREAM CORP | WIN | 53.3\% | 9.66 | 48 | FRONTIER COMMUNICATIONS COF | FTR | 61.5\% | 3.83 |
| 20 | BANK OF AMERICA CORP | BAC | 54.3\% | 8.18 | 2 | EXELON CORP | EXC | 62.2\% | 37.62 |
| 56 | VERIZON COMMUNICATIONS INC | VZ | 54.8\% | 44.44 | 7 | AGL RESOURCES INC | GAS | 62.2\% | 38.75 |
| 88 | GENERAL ELECTRIC CO | GE | 54.9\% | 20.84 | New | NORDSTROM INC | JWN | 62.4\% | 49.69 |
| 19 | FORD MOTOR CO | F | 55.7\% | 9.59 | 51 | AMEREN CORP | AEE | 62.5\% | 33.54 |
| 65 | INTEGRYS ENERGY GROUP INC | TEG | 56.1\% | 56.87 | New | MARRIOTT INTL INC | M AR | 62.8\% | 39.20 |
| 175 | BB\&T CORP | BBT | 56.2\% | 30.85 | 8 | CINCINNATI FINANCIAL CORP | CINF | 63.0\% | 38.07 |
| 14 | BROWN-FORMAN -CL B | BF.B | 56.3\% | 96.85 | 20 | INTEL CORP | INTC | 63.0\% | 26.65 |
| 65 | AT\&T INC | T | 56.8\% | 35.66 | 5 | AMERICAN ELECTRIC POWER CO | AEP | 63.2\% | 39.90 |
| 35 | PACCAR INC | PCAR | 57.7\% | 39.19 | New | ORACLE CORP | ORCL | 63.5\% | 29.70 |
| 56 | DOMINION RESOURCES INC | D | 57.9\% | 54.00 | 35 | PUBLIC SERVICE ENTRP GRP INC | PEG | 63.7\% | 32.50 |
| New | KINDER MORGAN INC | KMI | 58.2\% | 32.22 | 16 | XCEL ENERGY INC | XEL | 63.9\% | 28.41 |
| 72 | PROCTER \& GAMBLE CO | PG | 58.2\% | 61.25 | 53 | CITIGROUP INC | C | 64.1\% | 27.41 |

## Neglect-Analyst Coverage

Top 50 S\&P 500 Companies By Low Analyst Coverage
Neglect: Those companies with the lowest number of analysts submitting ratings to FirstCall.



Source: BofA Merill Lynch US Quantitative Strategy
The performance chart represents actual returns since July 1989. There is no back tested performance.
Screen for July

| Mo. In |  | No. of Analyst <br> Price |  |  | Mo. <br> In |  |  | No. of Analyst | Price |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scrn. | Company |  |  |  | Scrn. | Company | Ticker | Coverage | 06/29/2012 |
| 4 | LEUCADIA NATIONAL CORP | LUK | 1 | 21.27 | 19 | DUN \& BRADSTREET CORP | DNB | 9 | 71.17 |
| 55 | WASHINGTON POST -CL B | WPO | 1 | 373.82 | 35 | FMC CORP | FMC | 9 | 53.48 |
| 54 | HARMAN INTERNATIONAL INDS | HAR | 4 | 39.60 | 10 | MOLSON COORS BREWING CO | TAP | 9 | 41.61 |
| 117 | LOEWS CORP | L | 4 | 40.91 | 3 | SUNOCO INC | SUN | 9 | 47.50 |
| 100 | PITNEY BOWES INC | PBI | 5 | 14.97 | 17 | BROWN-FORMAN -CLB | BF.B | 10 | 96.85 |
| 117 | SNAP-ON INC | SNA | 5 | 62.25 | New | CONSTELLATION BRANDS | STZ | 10 | 27.06 |
| 57 | TITANIUM METALS CORP | TIE | 5 | 11.31 | 6 | EASTMAN CHEMICAL CO | EMN | 10 | 50.37 |
| 89 | WHIRLPOOL CORP | WHR | 5 | 61.16 | 19 | GOODYEAR TIRE \& RUBBER CO | GT | 10 | 11.81 |
| 36 | AVERY DENNISON CORP | AVY | 6 | 27.34 | New | ALLEGHENY TECHNOLOGIES INC | ATI | 11 | 31.89 |
| 9 | CBRE GROUP INC | CBG | 6 | 16.36 | 14 | ASSURANT INC | AIZ | 11 | 34.84 |
| 117 | DONNELLEY (R R ) \& SONS CO | RRD | 6 | 11.77 | 7 | FASTENAL CO | FAST | 11 | 40.31 |
| 79 | LEGGETT \& PLATT INC | LEG | 6 | 21.13 | 9 | GENUINE PARTS CO | GPC | 11 | 60.25 |
| 53 | MOODY'S CORP | MCO | 6 | 36.55 | 3 | HORMEL FOODS CORP | HRL | 11 | 30.42 |
| 88 | SEARS HOLDINGS CORP | SHLD | 7 | 59.70 | New | IRON MOUNTAIN INC | IRM | 11 | 32.96 |
| 41 | SLM CORP | SLM | 7 | 15.71 | New | MONSTER BEVERAGE CORP | MNST | 11 | 71.20 |
| 86 | AES CORP | AES | 8 | 12.83 | 11 | NISOURCEINC | NI | 11 | 24.75 |
| 33 | BLOCKH\&RINC | HRB | 8 | 15.98 | 26 | ONEOK INC | OKE | 11 | 42.31 |
| 58 | CINCINNATIFINANCIAL CORP | CINF | 8 | 38.07 | 16 | PALL CORP | PLL | 11 | 54.81 |
| 65 | INTEGRYS ENERGY GROUP INC | TEG | 8 | 56.87 | New | REPUBLIC SERVICES INC | RSG | 11 | 26.46 |
| 19 | MCGRAW-HILL COMPANIES | M HP | 8 | 45.00 | 3 | SCANA CORP | SCG | 11 | 47.84 |
| 6 | WPX ENERGY INC | WPX | 8 | 16.18 | 2 | SEMPRA ENERGY | SRE | 11 | 68.88 |
| 7 | AGL RESOURCES INC | GAS | 9 | 38.75 | New | WASTE MANAGEMENT INC | WM | 11 | 33.40 |
|  |  |  |  |  | 2 | XEROX CORP | XRX | 11 | 7.87 |

## Size

## Top 50 S\&P 500 Companies By SMALL SIZE

Firm Size: Month-end market value.


868788899091929394959697989900010203040506070809101112


Source: BofA Merriil Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance
Screen for July

| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  |  | Market | Price |
| Scrn. Company | Ticker | Value | 06/29/2012 |  |
|  |  |  |  |  |
| 9 | FIRST SOLAR INC | FSLR | 1307 | 15.06 |
| 41 | RYDER SYSTEM INC | R | 1846 | 36.01 |
| 21 | LEXMARK INTL INC -CL A | LXK | 1891 | 26.58 |
| 4 | ALPHA NATURAL RESOURCES INC | ANR | 1915 | 8.71 |
| 22 | TITANIUM METALS CORP | TIE | 1981 | 11.31 |
| 23 | DEVRY INC | DV | 2028 | 30.97 |
| 13 | DONNELLEY (R R) \& SONS CO | RRD | 2122 | 11.77 |
| 73 | TENET HEALTHCARE CORP | THC | 2168 | 5.24 |
| 31 | FIRST HORIZON NATIONAL CORP | FHN | 2186 | 8.65 |
| 11 | METROPCS COMMUNICATIONS INCPCS | 2197 | 6.05 |  |
| 37 | FEDERATED INVESTORS INC | FII | 2276 | 21.85 |
| 2 | MOLEX INC | MOLX | 2288 | 23.94 |
| 11 | E TRADE FINANCIAL CORP | ETFC | 2297 | 8.04 |
| 25 | WASHINGTON POST -CL B | WPO | 2388 | 373.82 |
| 8 | GAMESTOP CORP | GME | 2392 | 18.36 |
| 13 | JDS UNIPHASE CORP | JDSU | 2547 | 11.00 |
| 38 | BIG LOTS INC | BIG | 2598 | 40.79 |
| 91 | TERADYNE INC | TER | 2625 | 14.06 |
| 3 | GENWORTH FINANCIAL INC | GNW | 2782 | 5.66 |
| 54 | HARMAN INTERNATIONAL INDS | HAR | 2791 | 39.60 |
| 2 | ABERCROMBIE \& FITCH -CL A | ANF | 2818 | 34.14 |
| 12 | AVERY DENNISON CORP | AVY | 2833 | 27.34 |
| 7 | CABLEVISION SYS CORP -CL A | CVC | 2883 | 13.29 |
| 6 | GOODYEAR TIRE \& RUBBER CO | GT | 2890 | 11.81 |
| 40 | PERKINELMER INC | PKI | 2938 | 25.80 |


| Mo. |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: |
| In |  |  | Market | Price |
| Scrn. | Company | Ticker | Value | 06/29/2012 |
|  |  |  |  |  |
| 21 | LEGGETT \& PLATT INC | LEG | 2962 | 21.13 |
| 2 | UNITED STATES STEEL CORP | X | 2967 | 20.60 |
| 4 | ASSURANT INC | AIZ | 2988 | 34.84 |
| 15 | SEALED AIR CORP | SEE | 2997 | 15.44 |
| 6 | PITNEY BOWES INC | PBI | 2997 | 14.97 |
| 3 | FLIR SYSTEMS INC | FLIR | 3007 | 19.50 |
| 29 | DEAN FOODS CO | DF | 3142 | 17.03 |
| 2 | OWENS-ILLINOIS INC | OI | 3162 | 19.17 |
| 6 | WPX ENERGY INC | WPX | 3215 | 16.18 |
| 9 | BEMIS CO INC | BMS | 3231 | 31.34 |
| 3 | HUDSON CITY BANCORP INC | HCBK | 3364 | 6.37 |
| 3 | DUN \& BRADSTREET CORP | DNB | 3406 | 71.17 |
| 2 | ALLEGHENY TECHNOLOGIES INC | ATI | 3416 | 31.89 |
| 23 | GANNETT CO | GCI | 3461 | 14.73 |
| 7 | TESORO CORP | TSO | 3503 | 24.96 |
| New | ZIONS BANCORPORATION | ZION | 3577 | 19.42 |
| New | APARTMENT INVST \& MGMT CO | AIV | 3599 | 27.03 |
| New | SNAP-ON INC | SNA | 3617 | 62.25 |
| New | LSICORP | LSI | 3624 | 6.37 |
| 8 | LEGG MASON INC | LM | 3694 | 26.37 |
| 22 | PATTERSON COMPANIES INC | PDCO | 3800 | 34.47 |
| New | NETFLIX INC | NFLX | 3802 | 68.49 |
| New | FRONTIER COMMUNICATIONS COF FTR | 3824 | 3.83 |  |
| 5 | NASDAQ OMX GROUP INC | NDAQ | 3855 | 22.67 |
| New | COMPUTER SCIENCES CORP | CSC | 3855 | 24.82 |

## Foreign Exposure

## Top 50 S\&P 500 Companies By FOREIGN EXPOSURE

Foreign Exposure: The ratio of foreign sales to total sales.


Source: BofA Merrill Lynch US Quantitative Strategy
The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

## Screen for July

Mo.

| In | Foreign Price |  |
| :--- | ---: | ---: |
| Scrn. Company | Ticker | Exposure |
| $06 / 29 / 2012$ |  |  |

Ticker Exposure 06/29/2012

| 2 | ROWAN COMPANIES PLC | RDC | $100.0 \%$ | 32.33 |
| :--- | :--- | :--- | ---: | ---: |
| 14 | COCA-COLA ENTERPRISES INC | CCE | $100.0 \%$ | 28.04 |
| New | PHILIP MORRIS INTERNATIONAL | PM | $100.0 \%$ | 87.26 |
| 17 | BROADCOM CORP | BRCM | $98.1 \%$ | 33.76 |
| 40 | MOLSON COORS BREWING CO | TAP | $97.7 \%$ | 41.61 |
| 128 | QUALCOMM INC | QCOM | $92.8 \%$ | 55.68 |
| 172 | ADVANCED MICRO DEVICES | AMD | $91.7 \%$ | 5.73 |
| 15 | DIAMOND OFFSHRE DRILLING INC | DO | $90.3 \%$ | 59.13 |
| 160 | TEXAS INSTRUMENTS INC | TXN | $89.3 \%$ | 28.69 |
| New | PRINCIPAL FINANCIAL GRP INC | PFG | $88.7 \%$ | 26.23 |
| 80 | MICRON TECHNOLOGY INC | MU | $84.5 \%$ | 6.31 |
| New | LAM RESEARCH CORP | LRCX | $84.1 \%$ | 37.74 |
| 36 | WESTERN DIGITAL CORP | WDC | $83.3 \%$ | 30.48 |
| 44 | JABILCIRCUIT INC | JBL | $83.1 \%$ | 20.33 |
| 124 | ALTERA CORP | ALTR | $82.3 \%$ | 33.84 |
| New | COLGATE-PALMOLIVE CO | CL | $82.1 \%$ | 104.10 |
| 128 | NVIDIA CORP | NVDA | $81.8 \%$ | 13.82 |
| 77 | HARMAN INTERNATIONAL INDS | HAR | $81.3 \%$ | 39.60 |
| 141 | AVON PRODUCTS | AVP | $81.3 \%$ | 16.21 |
| 125 | ANALOG DEVICES | ADI | $81.2 \%$ | 37.67 |
| 184 | INTEL CORP | INTC | $79.4 \%$ | 26.65 |
| 58 | MICROCHIP TECHNOLOGY INC | MCHP | $79.0 \%$ | 33.08 |
| 28 | SANDISK CORP | SNDK | $77.9 \%$ | 36.48 |
| 176 | KLA-TENCOR CORP | KLAC | $77.3 \%$ | 49.25 |
| 37 | FMC TECHNOLOGIES INC | FTI | $77.3 \%$ | 39.23 |

Mo.
In Foreign Price
Scrn. Company
Ticker Exposure 06/29/2012

| 165 | AES CORP | AES | $77.0 \%$ | 12.83 |
| :--- | :--- | :--- | :--- | ---: |
| 146 | INTL FLAVORS \& FRAGRANCES | IFF | $75.6 \%$ | 54.80 |
| 89 | AFLAC INC | AFL | $75.6 \%$ | 42.59 |
| 40 | CORNING INC | GLW | $75.5 \%$ | 12.93 |
| 52 | LSICORP | LSI | $74.6 \%$ | 6.37 |
| 42 | OWENS-ILLINOIS INC | OI | $73.8 \%$ | 19.17 |
| 146 | APPLIED MATERIALS INC | AMAT | $73.3 \%$ | 11.45 |
| New | EXXON MOBIL CORP | XOM | $73.0 \%$ | 85.57 |
| 4 | AVERY DENNISON CORP | AVY | $72.9 \%$ | 27.34 |
| New | WYNN RESORTS LTD | WYNN | $72.8 \%$ | 103.72 |
| 22 | LINEAR TECHNOLOGY CORP | LLTC | $72.7 \%$ | 31.33 |
| 158 | AUTODESK INC | ADSK | $71.5 \%$ | 34.99 |
| 7 | BORGWARNER INC | BWA | $71.5 \%$ | 65.59 |
| 31 | WESTERN UNION CO | WU | $71.4 \%$ | 16.84 |
| 88 | WATERS CORP | WAT | $71.3 \%$ | 79.47 |
| 57 | NEWMONT M INING CORP | NEM | $70.5 \%$ | 48.51 |
| 31 | CATERPILLAR INC | CAT | $70.1 \%$ | 84.91 |
| 5 | YUM BRANDS INC | YUM | $70.0 \%$ | 64.42 |
| 54 | AGILENT TECHNOLOGIES INC | A | $69.5 \%$ | 39.24 |
| 9 | TE CONNECTIVITY LTD | TEL | $69.1 \%$ | 31.91 |
| 5 | MCDONALD'S CORP | MCD | $68.4 \%$ | 88.53 |
| 18 | NOBLE CORP | NE | $68.0 \%$ | 32.53 |
| 5 | AMPHENOL CORP | APH | $67.8 \%$ | 54.92 |
| 2 | DOW CHEMICAL | DOW | $67.7 \%$ | 31.50 |
| 11 | XILINX INC | XLNX | $67.3 \%$ | 33.57 |

## Valuation Backdrop

S\&P 500 Risk Premium (DDM Expected Return less AAA Corporate Bond Rate)


Source: BofA Merrill Lynch US Quantitative Strategy

Inflation vs. P/E Model (1965 to present)
Note: We exclude deflationary points from trend line calculation. Historically, the relationship between inflation and valuation breaks down during deflationary periods. For example, from 1949 to1950 S\&P 500 valuation was below average, and from 1954 to 1955, valuation was well above average.



S\&P 500 PE-to-Growth Ratio (Trailing PIE Divided by Proj. 5-Yr EPS Growth)


BofAML Universe Sector/Industry Factor Evaluation

|  | \# of <br> Comp | \% Univ <br> BofAML | Valuation Analysis |  |  |  |  |  |  |  | Expectation Analysis |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Impl. <br> Return | Reqd <br> Return | DDM <br> Alpha | Eqty. <br> Duration | BofAML <br> Adj ßeta | P/E <br> Ratio | Pricel Book | Yield | Earnings (Decile) |  |  |  |  | PR 5yr Growth | EPS Growth |  |
|  |  |  |  |  |  |  |  |  |  |  | Surprise | Risk | Torp | Disp | Est. Rev. |  | 2012E | 2013E |
| Economic Sectors |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Energy | 111.00 | 11.54 | 11.90 | 11.60 | 0.3 | 24.80 | 0.94 | 10.9 | 1.86 | 2.80 | 6.00 | 6.00 | 4.00 | 8.00 | 7.00 | 7.50 | -6 | 16 |
| Materials | 63.00 | 3.70 | 10.90 | 14.70 | -3.8 | 29.20 | 1.22 | 11.8 | 2.33 | 2.40 | 5.00 | 7.00 | 6.00 | 5.00 | 6.00 | 7.90 | 0 | 16 |
| Industrials | 122.00 | 9.62 | 11.50 | 13.90 | -2.4 | 26.70 | 1.15 | 11.9 | 2.54 | 2.30 | 5.00 | 5.00 | 6.00 | 4.00 | 5.00 | 12.90 | 16 | 15 |
| Consumer Discretionary | 192.00 | 12.19 | 12.50 | 13.80 | -1.3 | 27.70 | 1.13 | 11.1 | 2.87 | 1.40 | 6.00 | 5.00 | 6.00 | 4.00 | 5.00 | 16.70 | 7 | 28 |
| Consumer Staples | 55.00 | 10.96 | 11.20 | 8.80 | 2.4 | 29.00 | 0.70 | 15.3 | 3.22 | 2.90 | 7.00 | 2.00 | 4.00 | 2.00 | 6.00 | 7.80 | 5 | 9 |
| Health Care | 144.00 | 11.94 | 12.20 | 10.20 | 2 | 28.00 | 0.82 | 13 | 2.71 | 2.00 | 6.00 | 4.00 | 4.00 | 3.00 | 5.00 | 9.10 | 3 | 9 |
| Financials | 241.00 | 14.16 | 11.90 | 15.80 | -3.9 | 26.40 | 1.31 | 10.4 | 1.09 | 2.60 | 4.00 | 7.00 | 6.00 | 5.00 | 5.00 | 10.40 | 18 | 11 |
| Information Technology | 150.00 | 19.31 | 14.20 | 13.10 | 1.1 | 23.80 | 1.07 | 11.4 | 3.22 | 1.10 | 4.00 | 4.00 | 6.00 | 4.00 | 4.00 | 14.00 | 17 | 13 |
| Telecommunication Services | 18.00 | 3.01 | 9.90 | 9.40 | 0.5 | 21.70 | 0.76 | 19.6 | 2.19 | 4.50 | 4.00 | 7.00 | 4.00 | 4.00 | 5.00 | 6.30 | 13 | 34 |
| Utilities | 48.00 | 3.55 | 9.50 | 8.20 | 1.3 | 29.00 | 0.65 | 16.2 | 1.67 | 4.00 | 6.00 | 4.00 | 3.00 | 3.00 | 6.00 | 3.70 | -7 | 4 |
| Capitalization Sectors (\$ Million) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0 To 981 | 229.00 | 0.92 | 12.10 | 14.70 | -2.6 | 28.20 | 1.21 | 19.4 | 1.38 | 1.90 | 6.00 | 7.00 | 6.00 | 7.00 | 6.00 | 14.30 | 375 | 79 |
| 982 To 2302 | 229.00 | 2.77 | 12.10 | 14.00 | -1.9 | 26.80 | 1.15 | 13.9 | 1.57 | 2.10 | 5.00 | 6.00 | 5.00 | 6.00 | 6.00 | 13.20 | 11 | 19 |
| 2305 To 4798 | 229.00 | 5.87 | 11.50 | 13.90 | -2.4 | 28.40 | 1.15 | 13.1 | 1.76 | 1.70 | 6.00 | 6.00 | 6.00 | 5.00 | 5.00 | 12.00 | 19 | 17 |
| 4821 To 12527 | 229.00 | 13.85 | 11.90 | 13.40 | -1.5 | 28.30 | 1.10 | 10.9 | 2.07 | 1.80 | 6.00 | 5.00 | 5.00 | 5.00 | 6.00 | 12.20 | 4 | 26 |
| 12552 To 538444 | 229.00 | 76.59 | 12.30 | 12.00 | 0.3 | 26.10 | 0.98 | 12 | 2.25 | 2.30 | 5.00 | 5.00 | 5.00 | 4.00 | 5.00 | 10.50 | 8 | 12 |
| Risk Sectors |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0.29 To 0.73 | 210.00 | 25.56 | 11.40 | 8.00 | 3.4 | 27.10 | 0.63 | 13.9 | 2.73 | 3.20 | 6.00 | 4.00 | 4.00 | 4.00 | 6.00 | 7.90 | 3 | 11 |
| 0.74 To 0.96 | 211.00 | 22.23 | 11.30 | 10.60 | 0.7 | 29.10 | 0.86 | 13.5 | 2.58 | 2.30 | 6.00 | 4.00 | 5.00 | 4.00 | 5.00 | 9.50 | 6 | 10 |
| 0.97 To 1.18 | 220.00 | 25.81 | 13.60 | 13.20 | 0.4 | 24.00 | 1.08 | 12 | 2.48 | 1.60 | 5.00 | 4.00 | 6.00 | 4.00 | 5.00 | 12.60 | 11 | 15 |
| 1.19 To 1.43 | 213.00 | 15.98 | 12.20 | 15.60 | -3.4 | 26.70 | 1.30 | 9.7 | 1.62 | 1.90 | 5.00 | 7.00 | 6.00 | 5.00 | 5.00 | 12.00 | 9 | 22 |
| 1.44 To 3.26 | 211.00 | 8.98 | 12.40 | 21.50 | -9.1 | 25.80 | 1.81 | 9.5 | 1.19 | 1.60 | 5.00 | 8.00 | 7.00 | 6.00 | 5.00 | 15.00 | 14 | 16 |
| Uncoded | 80.00 | 1.45 | 12.70 |  |  | 27.20 |  | 12.4 | 2.73 | 1.80 | 5.00 | 3.00 | 6.00 | 7.00 | 5.00 | 18.10 | 36 | 21 |
| DDM Alpha |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Most Undervalued | 148.00 | 24.55 | 13.90 | 10.00 | 3.9 | 23.20 | 0.80 | 11.3 | 3.10 | 2.10 | 4.00 | 3.00 | 5.00 | 4.00 | 5.00 | 12.10 | 13 | 12 |
| Undervalued | 148.00 | 17.91 | 11.80 | 10.50 | 1.3 | 26.00 | 0.85 | 13.8 | 2.27 | 2.60 | 6.00 | 4.00 | 5.00 | 3.00 | 5.00 | 11.20 | 9 | 11 |
| Fair Value | 149.00 | 16.19 | 11.70 | 12.60 | -0.9 | 28.90 | 1.03 | 12.5 | 2.24 | 2.10 | 5.00 | 5.00 | 5.00 | 4.00 | 6.00 | 10.70 | 6 | 13 |
| Overvalued | 148.00 | 11.18 | 11.00 | 14.70 | -3.7 | 28.10 | 1.22 | 12.7 | 2.25 | 1.80 | 5.00 | 6.00 | 5.00 | 5.00 | 5.00 | 12.20 | 4 | 15 |
| Most Overvalued | 148.00 | 7.68 | 10.70 | 19.20 | -8.5 | 30.60 | 1.60 | 11.4 | 1.48 | 1.50 | 5.00 | 7.00 | 6.00 | 5.00 | 4.00 | 10.20 | 19 | 13 |
| Uncoded | 404.00 | 22.49 | 12.70 | 13.10 | -0.4 | 27.20 | 1.08 | 11.1 | 1.70 | 2.60 | 6.00 | 6.00 | 5.00 | 6.00 | 6.00 | 8.90 | 3 | 21 |

BofAML Universe SectorlIndustry Factor Evaluation (cont'd)

|  | \# of <br> Comp | \% Univ BOFAML | Valuation Analysis |  |  |  |  |  |  |  | Expectation Analysis |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Impl. <br> Return | Reqd <br> Return | DDM <br> Alpha | Eqty. <br> Duration | BofAML <br> Adj ßeta | P/E <br> Ratio | Pricel Book | Yield | Earnings (Decile) |  |  |  |  | PR 5yr <br> Growth | EPS Growth |  |
|  |  |  |  |  |  |  |  |  |  |  | Surprise | Risk | Torp | Disp | Est. Rev. |  | 2012E | 2013E |
| Duration |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10.06 To 21.52 | 146.00 | 17.06 | 15.00 | 13.70 | 1.3 | 17.60 | 1.13 | 10 | 2.02 | 2.20 | 3.00 | 5.00 | 6.00 | 4.00 | 5.00 | 13.10 | 12 | 14 |
| 21.52 To 25.19 | 147.00 | 18.21 | 12.10 | 11.40 | 0.7 | 23.80 | 0.93 | 11.4 | 2.28 | 2.40 | 5.00 | 5.00 | 5.00 | 4.00 | 5.00 | 10.60 | 5 | 14 |
| 25.23 To 28.10 | 147.00 | 16.64 | 12.00 | 11.20 | 0.8 | 27.20 | 0.91 | 13.5 | 2.55 | 2.20 | 6.00 | 4.00 | 5.00 | 3.00 | 5.00 | 10.80 | 10 | 12 |
| 28.12 To 32.16 | 147.00 | 13.33 | 11.00 | 11.70 | -0.7 | 30.50 | 0.96 | 13.5 | 2.53 | 2.00 | 6.00 | 4.00 | 5.00 | 3.00 | 5.00 | 9.00 | 8 | 11 |
| 32.20 To 71.94 | 146.00 | 11.61 | 10.10 | 12.80 | -2.7 | 38.20 | 1.05 | 17.1 | 2.59 | 1.40 | 5.00 | 5.00 | 5.00 | 4.00 | 5.00 | 10.60 | 16 | 14 |
| Uncoded | 412.00 | 23.15 |  | 13.40 |  |  | 1.10 | 10.8 | 1.68 | 2.60 | 6.00 | 6.00 | 5.00 | 6.00 | 6.00 | 10.80 | 5 | nm |
| Growth Sectors |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0.00 To 0.00 | 12.00 | 0.07 |  |  |  |  |  | nm | 0.88 | 7.00 |  |  |  |  |  |  | nm | nm |
| Growth | 349.00 | 27.32 | 12.20 | 12.80 | -0.6 | 27.20 | 1.05 | 13.4 | 2.39 | 1.60 | 5.00 | 4.00 | 5.00 | 4.00 | 5.00 | 13.30 | 10 | 15 |
| Growth Cyclical | 330.00 | 24.33 | 13.50 | 15.00 | -1.5 | 25.30 | 1.24 | 11.5 | 1.89 | 1.50 | 4.00 | 5.00 | 6.00 | 5.00 | 5.00 | 13.20 | 17 | 14 |
| Growth Defensive | 143.00 | 14.72 | 12.00 | 9.60 | 2.4 | 27.60 | 0.77 | 11.5 | 2.52 | 2.90 | 6.00 | 4.00 | 4.00 | 3.00 | 5.00 | 9.10 | 4 | 17 |
| Cyclical | 221.00 | 14.91 | 11.70 | 14.10 | -2.4 | 26.00 | 1.16 | 10.8 | 1.76 | 2.30 | 6.00 | 6.00 | 6.00 | 5.00 | 6.00 | 10.80 | 6 | 18 |
| EPS Surprise |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Most Optimistic | 186.00 | 19.61 | 14.10 | 13.70 | 0.4 | 22.80 | 1.13 | 11.3 | 2.37 | 1.60 | 1.00 | 4.00 | 6.00 | 5.00 | 4.00 | 13.30 | 21 | 13 |
| Optimistic | 186.00 | 19.82 | 11.60 | 11.40 | 0.2 | 26.00 | 0.93 | 12.1 | 2.32 | 2.50 | 4.00 | 5.00 | 5.00 | 4.00 | 5.00 | 9.40 | 9 | 13 |
| Neutral | 186.00 | 15.03 | 11.90 | 13.40 | -1.5 | 28.00 | 1.10 | 12 | 2.05 | 2.10 | 6.00 | 6.00 | 5.00 | 4.00 | 5.00 | 12.20 | 7 | 15 |
| Less Optimistic | 186.00 | 17.09 | 11.80 | 11.00 | 0.8 | 28.10 | 0.90 | 13.5 | 2.33 | 2.30 | 7.00 | 3.00 | 4.00 | 4.00 | 6.00 | 10.20 | 3 | 14 |
| Not Optimistic | 186.00 | 16.22 | 11.20 | 11.40 | -0.2 | 28.70 | 0.92 | 13.3 | 2.39 | 2.50 | 9.00 | 5.00 | 4.00 | 4.00 | 6.00 | 8.20 | -1 | 11 |
| Uncoded | 215.00 | 12.22 | 11.40 | 14.20 | -2.8 | 30.30 | 1.17 | 9.9 | 1.51 | 2.30 |  | 5.00 | 6.00 | 5.00 | 6.00 | 12.40 | 8 | 25 |
| Quality Rank |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| A+ | 40.00 | 18.81 | 11.90 | 9.70 | 2.2 | 27.90 | 0.78 | 12.4 | 3.04 | 2.60 | 6.00 | 3.00 | 4.00 | 3.00 | 5.00 | 7.70 | 4 | 11 |
| A | 46.00 | 6.42 | 11.80 | 10.50 | 1.3 | 27.20 | 0.85 | 13 | 3.06 | 2.70 | 7.00 | 4.00 | 5.00 | 2.00 | 5.00 | 10.30 | 9 | 11 |
| A- | 73.00 | 14.79 | 12.40 | 13.10 | -0.7 | 25.10 | 1.08 | 11.5 | 2.25 | 2.50 | 5.00 | 4.00 | 5.00 | 4.00 | 5.00 | 11.20 | 8 | 11 |
| B+ | 197.00 | 21.88 | 11.50 | 12.60 | -1.1 | 27.80 | 1.03 | 12 | 1.85 | 2.40 | 6.00 | 6.00 | 5.00 | 4.00 | 6.00 | 9.90 | 4 | 12 |
| B | 199.00 | 17.11 | 14.00 | 13.40 | 0.6 | 22.20 | 1.10 | 12.1 | 1.98 | 1.70 | 4.00 | 5.00 | 6.00 | 5.00 | 5.00 | 10.90 | 13 | 15 |
| B- | 150.00 | 5.15 | 11.50 | 15.40 | -3.9 | 29.80 | 1.27 | 13.4 | 1.56 | 1.50 | 5.00 | 7.00 | 5.00 | 7.00 | 6.00 | 13.50 | 2 | 27 |
| C \& D | 71.00 | 1.62 | 10.50 | 20.10 | -9.6 | 35.10 | 1.69 | 15.7 | 1.16 | 0.00 | 4.00 | 8.00 | 8.00 | 8.00 | 4.00 | 15.00 | nm | 21 |
| Not Rated | 369.00 | 14.23 | 12.10 | 12.70 | -0.6 | 26.90 | 1.04 | 10.7 | 2.19 | 2.10 | 6.00 | 5.00 | 6.00 | 5.00 | 5.00 | 15.40 | 12 | 24 |
| B+ or Better | 356.00 | 61.90 | 11.80 | 11.60 | 0.2 | 27.20 | 0.95 | 12.1 | 2.32 | 2.50 | 6.00 | 4.00 | 5.00 | 4.00 | 5.00 | 9.60 | 5 | 11 |
| B or Worse | 789.00 | 38.10 | 12.90 | 13.70 | -0.8 | 25.20 | 1.13 | 11.8 | 1.92 | 1.70 | 5.00 | 5.00 | 6.00 | 5.00 | 5.00 | 13.00 | 14 | 20 |
| BofAML Universe | 1145 | 100.00 | 12.20 | 12.40 | -0.2 | 26.50 | 1.02 | 12.9 | 2.15 | 2.20 |  |  |  |  |  | 10.70 | 8 | 15 |
| S\&P 500 | 500 | 90.68 | 12.20 | 12.20 | 0 | 26.40 | 1.01 | 13 | 2.11 | 2.20 |  |  |  |  |  | 10.00 | 7 | 13 |

Source: BofA Merrill Lynch US Equity and US Quant Strategy

BofAML Universe SectorlIndustry Factor Evaluation (cont'd)

|  | \# of Comp | \% Univ <br> BofAML | Valuation Analysis |  |  |  |  |  |  |  | Expectation Analysis |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  | Earnings (Decile) |  |  |  |  | PR 5yr <br> Growth | EPS Growth |  |
|  |  |  | Return | Return | Alpha | Duration | Adj ßeta | Ratio | Book | Yield | Surprise | Risk | Torp | Disp | Est. Rev. |  | 2012E | 2013E |
| ENERGY | 111 | 11.5 | 11.90 | 11.60 | 0.3 | 24.80 | 0.94 | 10.9 | 1.86 | 2.80 | 6.00 | 6.00 | 4.00 | 8.00 | 7.00 | 7.20 | -6 | 16 |
| ENERGY EQUIP \& SVS | 14 | 1.57 | 12.90 | 15.60 | -2.7 | 25.70 | 1.29 | 11.8 | 1.89 | 1.20 | 7.00 | 5.00 | 7.00 | 7.00 | 8.00 | 15.60 | 11 | 19 |
| OIL \& GAS | 97 | 9.97 | 11.60 | 10.90 | 0.7 | 24.50 | 0.89 | 10.7 | 1.86 | 3.00 | 6.00 | 7.00 | 3.00 | 8.00 | 7.00 | 5.90 | -8 | 16 |
| MATERIALS | 63 | 3.7 | 10.90 | 14.70 | -3.8 | 29.20 | 1.22 | 11.8 | 2.33 | 2.40 | 5.00 | 7.00 | 6.00 | 5.00 | 6.00 | 7.90 | 0 | 16 |
| CHEMICALS | 24 | 2.43 | 10.90 | 14.20 | -3.3 | 28.90 | 1.17 | 12.6 | 3.17 | 2.30 | 4.00 | 7.00 | 6.00 | 4.00 | 5.00 | 8.50 | 10 | 11 |
| CONTAINERS \& PCKG | 11 | 0.28 | 10.60 | 12.60 | -2 | 31.80 | 1.04 | 11.2 | 2.10 | 1.60 | 7.00 | 5.00 | 6.00 | 4.00 | 6.00 | 7.10 | 8 | 19 |
| METALS \& MINING | 23 | 0.83 | 11.10 | 15.70 | -4.6 | 29.50 | 1.30 | 10.1 | 1.42 | 2.90 | 6.00 | 7.00 | 6.00 | 8.00 | 9.00 | 6.40 | -16 | 26 |
| PAPER \& FOREST PROD | 5 | 0.16 | 11.50 | 21.00 | -9.5 | 25.30 | 1.77 | 12 | 1.55 | 3.10 | 7.00 | 10.00 | 4.00 | 7.00 | 8.00 | 6.50 | -21 | 33 |
| INDUSTRIALS | 122 | 9.62 | 11.50 | 13.90 | -2.4 | 26.70 | 1.15 | 11.9 | 2.54 | 2.30 | 5.00 | 5.00 | 6.00 | 4.00 | 5.00 | 12.70 | 16 | 15 |
| AEROSPACE \& DEF | 21 | 2.45 | 11.90 | 13.40 | -1.5 | 27.10 | 1.10 | 12.1 | 3.19 | 2.40 | 4.00 | 3.00 | 5.00 | 3.00 | 5.00 | 11.00 | 6 | 11 |
| BLDGS PRODUCTS | 2 | 0.03 |  | 20.10 |  |  | 1.69 | 11.6 | 0.99 | 0.00 |  | 10.00 | 8.00 | 7.00 | 9.00 | 15.50 | -4 | 45 |
| CONSTR. \& ENGR | 8 | 0.15 | 13.10 | 14.70 | -1.6 | 28.90 | 1.21 | 10.1 | 1.41 | 0.80 | 3.00 | 5.00 | 7.00 | 5.00 | 6.00 | 14.20 | 24 | 17 |
| ELECTRICAL EQUIP | 8 | 0.43 | 14.30 | 13.60 | 0.7 | 21.80 | 1.12 | 13.2 | 3.15 | 2.60 | 7.00 | 4.00 | 5.00 | 3.00 | 7.00 | 12.60 | 12 | 20 |
| IND CONGLOMERATES | 4 | 2.47 |  | 15.00 |  |  | 1.24 | 13.1 | 2.04 | 2.70 |  | 4.00 | 6.00 | 5.00 | 5.00 | 12.40 | 12 | 10 |
| MACHINERY | 22 | 1.41 | 12.50 | 16.90 | -4.4 | 22.30 | 1.40 | 9.3 | 2.51 | 2.20 | 3.00 | 7.00 | 8.00 | 5.00 | 4.00 | 13.20 | 23 | 14 |
| TRADING COMPANIES | 6 | 0.16 | 14.90 | 12.70 | 2.2 | 15.80 | 1.04 | 14.3 | 2.88 | 1.60 | 5.00 | 3.00 | 7.00 | 3.00 | 4.00 | 16.60 | 25 | 17 |
| COMMERCIAL SVS | 23 | 0.67 | 11.20 | 9.50 | 1.7 | 30.30 | 0.76 | 16.1 | 2.21 | 1.70 | 6.00 | 4.00 | 5.00 | 4.00 | 5.00 | 9.60 | 7 | 14 |
| AIR FREIGHT \& LOGIS | 4 | 0.69 | 11.50 | 11.90 | -0.4 | 27.50 | 0.97 | 14.7 | 4.40 | 2.10 | 7.00 | 9.00 | 6.00 | 4.00 | 7.00 | 11.40 | 16 | 13 |
| AIRLINES | 11 | 0.24 | 14.60 | 11.20 | 3.4 | 31.10 | 0.91 | 4.9 | 1.66 | 0.10 | 6.00 | 9.00 | 10.00 | 9.00 | 2.00 | 38.40 | 155 | 50 |
| MARINE | 1 | 0.02 | 13.00 | 13.20 | -0.2 | 24.30 | 1.08 | 12.4 | 1.76 | 0.00 | 4.00 | 4.00 | 6.00 | 3.00 | 9.00 | 15.00 | 7 | 12 |
| ROAD \& RAIL | 11 | 0.9 | 8.60 | 13.50 | -4.9 | 28.60 | 1.11 | 13.4 | 2.89 | 2.00 | 8.00 | 3.00 | 7.00 | 2.00 | 5.00 | 13.20 | 14 | 14 |
| TRANSPORT INFRA | 1 | 0.01 | 11.50 |  |  | 29.00 |  | 11.2 | 1.63 | 0.00 | 9.00 |  | 6.00 | 5.00 | 9.00 | 12.00 | 19 | 25 |
| CONSUMER DISCR | 192 | 12.2 | 12.50 | 13.80 | -1.3 | 27.70 | 1.13 | 11.1 | 2.87 | 1.40 | 6.00 | 5.00 | 6.00 | 4.00 | 5.00 | 16.40 | 7 | 28 |
| AUTO COMP | 15 | 0.47 | 15.60 | 19.60 | -4 | 19.50 | 1.64 | 7.4 | 2.03 | 1.40 | 4.00 | 9.00 | 7.00 | 6.00 | 6.00 | 18.10 | 15 | 20 |
| AUTOMOBILES | 3 | 0.5 | 15.40 | 15.00 | 0.4 | 17.10 | 1.24 | 6 | 1.55 | 1.10 | 9.00 |  | 7.00 | 8.00 | 9.00 | 11.00 | -18 | 48 |
| HOUSEHOLD DURABLES | 13 | 0.29 | 12.20 | 15.40 | -3.2 | 22.10 | 1.28 | 19.5 | 2.24 | 1.70 | 6.00 | 4.00 | 7.00 | 7.00 | 3.00 | 12.00 | 253 | 39 |
| TEXTILES, APPAREL | 15 | 0.74 | 11.80 | 14.60 | -2.8 | 29.40 | 1.21 | 15.6 | 3.68 | 1.30 | 7.00 | 4.00 | 6.00 | 3.00 | 6.00 | 14.20 | 15 | 15 |
| HOTELS, RESTAURANTS \& LEISURE | 35 | 2.31 | 11.40 | 15.30 | -3.9 | 28.00 | 1.27 | 18.4 | 3.54 | 2.00 | 7.00 | 5.00 | 5.00 | 4.00 | 5.00 | 23.40 | 7 | 18 |
| DIV CONSUMER SVS | 16 | 0.15 | 11.10 | 11.60 | -0.5 | 29.70 | 0.94 | 12.2 | 1.86 | 1.00 | 6.00 | 5.00 | 3.00 | 6.00 | 4.00 | 3.80 | -21 | 1 |
| MEDIA | 26 | 3.18 | 13.90 | 13.90 | 0 | 25.10 | 1.15 | 6.5 | 2.19 | 1.50 | 5.00 | 4.00 | 7.00 | 4.00 | 5.00 | 14.70 | 7 | 37 |
| DISTRIBUTORS | 2 | 0.1 | 11.90 | 10.80 | 1.1 | 25.60 | 0.87 | 14.8 | 3.09 | 2.20 | 5.00 | 3.00 | 6.00 | 2.00 | 4.00 | 12.50 | 18 | 12 |
| INTERNET \& CATALOG RETAIL | 11 | 1.22 | 9.90 | 12.90 | -3 | 38.20 | 1.05 | 37.7 | 8.51 | 0.00 | 3.00 | 6.00 | 5.00 | 9.00 | 6.00 | 19.30 | 7 | 47 |
| MULTILINE RETAIL | 9 | 0.86 | 12.20 | 11.30 | 0.9 | 29.10 | 0.92 | 13.5 | 2.79 | 1.70 | 6.00 | 4.00 | 6.00 | 3.00 | 4.00 | 12.30 | 8 | 17 |
| SPECIALTY RETAIL | 47 | 2.38 | 12.20 | 12.10 | 0.1 | 28.10 | 0.99 | 14.3 | 3.36 | 1.50 | 5.00 | 4.00 | 6.00 | 3.00 | 4.00 | 14.70 | 16 | 15 |


|  | \# of Comp | \% Univ BofAML | Valuation Analysis |  |  |  |  |  |  |  | Expectation Analysis |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  | Earnings (Decile) |  |  |  |  | PR 5yr Growth | EPS Growth |  |
|  |  |  | Return | Return | Alpha | Duration | Adj ßeta | Ratio | Book | Yield | Surprise | Risk | Torp | Disp | Est. Rev. |  | 2012E | 2013E |
| CONSUMER STAPLES | 55 | 11 | 11.20 | 8.80 | 2.4 | 29.00 | 0.70 | 15.3 | 3.22 | 2.90 | 7.00 | 2.00 | 4.00 | 2.00 | 6.00 | 7.80 | 5 | 9 |
| FOOD \& STAPLES RETAILING | 12 | 2.92 | 11.90 | 8.40 | 3.5 | 31.40 | 0.67 | 14.2 | 2.78 | 2.00 | 7.00 | 2.00 | 5.00 | 3.00 | 4.00 | 10.60 | 11 | 10 |
| BEVERAGES | 8 | 2.34 | 10.60 | 9.00 | 1.6 | 32.30 | 0.71 | 17.4 | 4.40 | 2.70 | 9.00 | 3.00 | 3.00 | 1.00 | 6.00 | 5.80 | -1 | 9 |
| FOOD PRODUCTS | 20 | 1.65 | 10.70 | 8.60 | 2.1 | 27.80 | 0.69 | 13.4 | 2.09 | 2.70 | 6.00 | 3.00 | 4.00 | 3.00 | 6.00 | 8.60 | 7 | 10 |
| TOBACCO | 4 | 1.88 | 11.30 | 9.80 | 1.5 | 23.20 | 0.79 | 15.6 | 9.86 | 4.10 | 7.00 | 2.00 | 4.00 | 1.00 | 7.00 | 8.00 | 6 | 9 |
| HOUSEHOLD PRODUCTS | 6 | 1.96 | 11.30 | 7.80 | 3.5 | 28.40 | 0.62 | 16.3 | 3.41 | 3.30 | 7.00 | 1.00 | 3.00 | 2.00 | 7.00 | 4.70 | 2 | 7 |
| PERSONAL PRODUCTS | 5 | 0.21 | 11.70 | 15.20 | -3.5 | 26.10 | 1.26 | 16.5 | 5.84 | 2.40 | 8.00 | 5.00 | 5.00 | 3.00 | 5.00 | 10.80 | -12 | 25 |
| HEALTH CARE | 144 | 11.9 | 12.20 | 10.20 | 2 | 28.00 | 0.82 | 13 | 2.71 | 2.00 | 6.00 | 4.00 | 4.00 | 3.00 | 5.00 | 8.90 | 3 | 9 |
| HEALTH CARE EQUIP | 24 | 1.67 | 12.30 | 11.20 | 1.1 | 30.80 | 0.91 | 13.3 | 2.64 | 1.30 | 6.00 | 4.00 | 4.00 | 3.00 | 5.00 | 11.70 | 7 | 9 |
| HEALTH CARE PROV | 50 | 2.35 | 12.50 | 11.80 | 0.7 | 26.70 | 0.96 | 11.8 | 2.10 | 0.80 | 6.00 | 4.00 | 6.00 | 3.00 | 5.00 | 13.70 | 6 | 10 |
| HEALTH CARE TECH | 1 | 0.01 | 10.50 | 10.70 | -0.2 | 34.90 | 0.87 | 53.8 | 1.86 | 0.00 |  |  | 6.00 | 4.00 | 5.00 | 26.30 | nm | 133 |
| BIOTECH | 29 | 1.71 | 12.00 | 9.90 | 2.1 | 27.20 | 0.80 | 19.9 | 4.89 | 0.50 | 4.00 | 3.00 | 6.00 | 7.00 | 5.00 | 12.40 | 28 | 30 |
| PHARMACEUTICALS | 28 | 5.71 | 12.20 | 9.10 | 3.1 | 28.00 | 0.73 | 12.3 | 2.77 | 3.30 | 6.00 | 5.00 | 3.00 | 3.00 | 5.00 | 4.70 | -3 | 6 |
| LIFE SCIENCES | 12 | 0.5 | 11.50 | 12.40 | -0.9 | 29.20 | 1.02 | 12.3 | 2.08 | 0.50 | 5.00 | 5.00 | 6.00 | 2.00 | 5.00 | 11.80 | 12 | 11 |
| FINANCIALS | 241 | 14.2 | 11.90 | 15.80 | -3.9 | 26.40 | 1.31 | 10.4 | 1.09 | 2.60 | 4.00 | 7.00 | 6.00 | 5.00 | 5.00 | 10.30 | 18 | 11 |
| BANKS | 31 | 2.9 | 14.30 | 13.90 | 0.4 | 20.90 | 1.14 | 10.4 | 1.18 | 2.40 | 3.00 | 8.00 | 7.00 | 5.00 | 4.00 | 14.40 | 13 | 12 |
| THRIFTS \& MORTGAGE FINANCE | 8 | 0.16 | 11.00 | 9.40 | 1.6 | 22.50 | 0.75 | 12.2 | 1.02 | 4.20 | 6.00 | 8.00 | 6.00 | 6.00 | 7.00 | 10.50 | 324 | 7 |
| DIV FINANCIALS | 10 | 1.88 |  | 17.40 |  |  | 1.45 | 7.7 | 0.66 | 2.20 |  | 9.00 | 8.00 | 6.00 | 8.00 | 8.60 | 1 | 19 |
| CONSUMER FINANCE | 6 | 0.85 | 11.70 | 17.80 | -6.1 | 28.90 | 1.48 | 10.2 | 1.79 | 1.10 | 3.00 | 8.00 | 4.00 | 5.00 | 3.00 | 9.50 | 1 | 9 |
| CAPITAL MARKETS | 47 | 2.14 | 12.00 | 15.80 | -3.8 | 25.70 | 1.31 | 10.4 | 1.02 | 2.30 | 4.00 | 7.00 | 7.00 | 6.00 | 6.00 | 12.40 | 26 | 20 |
| INSURANCE | 40 | 2.71 | 11.30 | 17.80 | -6.5 | 29.20 | 1.48 | 8.4 | 0.80 | 2.00 | 3.00 | 7.00 | 7.00 | 5.00 | 4.00 | 9.10 | 52 | 4 |
| REITS | 96 | 3.46 | 10.20 | 14.60 | -4.4 | 28.50 | 1.20 | 16.2 | 2.21 | 4.00 | 6.00 | 7.00 | 4.00 | 2.00 | 5.00 | 7.20 | 5 | 8 |
| REAL ESTATE MGMT \& DEV | 3 | 0.07 | 14.60 | 20.80 | -6.2 | 21.20 | 1.75 | 13.7 | 2.71 | 0.30 |  | 9.00 |  |  |  | 22.80 | 16 | 17 |
| INFO TECH | 150 | 19.3 | 14.20 | 13.10 | 1.1 | 23.80 | 1.07 | 11.4 | 3.22 | 1.10 | 4.00 | 4.00 | 6.00 | 4.00 | 4.00 | 13.90 | 17 | 13 |
| INTERNET SOFTWARE | 18 | 2.03 | 12.60 | 13.40 | -0.8 | 26.90 | 1.10 | 15.6 | 3.06 | 0.00 | 5.00 | 5.00 | 7.00 | 4.00 | 3.00 | 19.40 | 19 | 16 |
| IT SERVICES | 25 | 3.75 | 12.30 | 10.70 | 1.6 | 29.70 | 0.86 | 14.1 | 5.58 | 1.40 | 5.00 | 2.00 | 6.00 | 2.00 | 4.00 | 12.20 | 15 | 12 |
| SOFTWARE | 26 | 4.06 | 12.40 | 13.00 | -0.6 | 25.70 | 1.06 | 11.7 | 3.59 | 1.50 | 4.00 | 3.00 | 5.00 | 3.00 | 5.00 | 13.50 | 12 | 11 |
| COMMUNICA. EQUIP | 16 | 1.59 | 12.00 | 13.50 | -1.5 | 26.30 | 1.11 | 11.9 | 2.16 | 1.60 | 6.00 | 5.00 | 6.00 | 4.00 | 6.00 | 12.50 | 11 | 10 |
| COMPUTERS \& PERIPH | 10 | 5.06 | 19.20 | 14.00 | 5.2 | 11.60 | 1.15 | 9.1 | 3.56 | 0.20 | 2.00 | 3.00 | 8.00 | 5.00 | 3.00 | 15.60 | 35 | 12 |
| ELECTR EQUIP \& INSTR | 20 | 0.55 | 13.80 | 17.00 | -3.2 | 23.40 | 1.41 | 8.9 | 1.33 | 1.40 | 5.00 | 6.00 | 4.00 | 4.00 | 6.00 | 12.40 | -6 | 17 |
| SEMICONDUCTORS | 35 | 2.27 | 12.30 | 13.70 | -1.4 | 34.50 | 1.13 | 11.4 | 2.37 | 2.30 | 6.00 | 8.00 | 3.00 | 7.00 | 4.00 | 10.40 | -4 | 15 |
| TELECOMMUNICATION SERVICES | 18 | 3.01 | 9.90 | 9.40 | 0.5 | 21.70 | 0.76 | 19.6 | 2.19 | 4.50 | 4.00 | 7.00 | 4.00 | 4.00 | 5.00 | 6.30 | 13 | 34 |
| DIVERSIFIED TELECOM SVS | 11 | 2.73 | 9.90 | 9.10 | 0.8 | 21.70 | 0.73 | 15.4 | 2.23 | 4.90 | 4.00 | 7.00 | 4.00 | 3.00 | 5.00 | 7.50 | 16 | 12 |
| WIRELESS TELECOM SVS | 7 | 0.28 | 18.90 | 13.10 | 5.8 | 15.50 | 1.07 | nm | 1.87 | 0.00 | 6.00 | 5.00 | 3.00 | 10.00 | 7.00 | -5.50 | nm | nm |
| UTILITIES | 48 | 3.55 | 9.50 | 8.20 | 1.3 | 29.00 | 0.65 | 16.2 | 1.67 | 4.00 | 6.00 | 4.00 | 3.00 | 3.00 | 6.00 | 3.60 | -7 | 4 |
| ELECTRIC UTILITIES | 18 | 2 | 9.30 | 7.90 | 1.4 | 28.90 | 0.63 | 16.2 | 1.74 | 4.30 | 5.00 | 3.00 | 2.00 | 3.00 | 7.00 | 3.00 | -11 | 4 |
| GAS UTILITIES | 10 | 0.17 | 9.70 | 7.70 | 2 | 27.50 | 0.60 | 16.8 | 1.81 | 5.20 | 6.00 | 4.00 | 3.00 | 5.00 | 7.00 | 4.20 | -10 | 28 |
| MULTI-UTILITIES | 14 | 1.16 | 10.10 | 8.00 | 2.1 | 27.20 | 0.64 | 15.6 | 1.73 | 4.00 | 7.00 | 5.00 | 2.00 | 3.00 | 6.00 | 4.40 | -3 | 3 |
| WATER UTILITIES | 1 | 0.04 | 10.30 | 6.90 | 3.4 | 28.50 | 0.54 | 17 | 1.42 | 2.90 | 10.00 |  | 5.00 | 1.00 | 5.00 | 8.10 | 8 | 9 |
| INDEP POWER PROD \& ENERGY TRAD | 5 | 0.17 | 5.70 | 14.00 | -8.3 | 56.90 | 1.15 | 21.8 | 1.00 | 0.00 | 6.00 | 10.00 | 7.00 | 7.00 | 5.00 | 3.50 | 22 | -3 |
| BofAML UNIVERSE | 1145 | 100 | 12.20 | 12.40 | -0.2 | 26.50 | 1.02 | 12.9 | 2.15 | 2.20 |  |  |  |  |  | 10.70 | 8 | 15 |
| S\&P 500 | 500 | 90.7 | 12.20 | 12.20 | 0 | 26.40 | 1.01 | 13 | 2.11 | 2.20 |  |  |  |  |  | 10.00 | 7 | 13 |

[^25]
## Performance Calculation Methodology

For each of the strategies represented in this report, rebalancing and performance calculations are conducted each month, using data and closing prices corresponding to the market's close on the last business day of each month. The performance of each index is computed on the basis of price return. The performance is presented relative to the benchmark which consists of the equal weighted price performance of stocks in the S\&P 500 as of the last business day of each month. For Alpha Surprise model, the performance is also represented as relative to the market capitalization-weighted S\&P 500 benchmark.

The results of quantitative strategies presented here may differ from the S\&P 500 in that they are significantly less diversified, and, as such, their performance is more exposed to specific stock or sector results. Therefore investors following these strategies may experience greater volatility in their returns.

The performance results do not reflect transaction costs, tax withholdings or any investment advisory fees. Had these costs been reflected, the performance would have been lower. The performance results of individuals following the strategies presented here will differ from the performance contained in this report for a variety of reasons, including differences related to incurring transaction costs and/or investment advisory fees, as well as differences in the time and price that securities were acquired and disposed of, and differences in the weighting of such securities. The performance results of individuals following these strategies will also differ based on differences in treatment of dividends received, including the amount received and whether and when such dividends were reinvested.

## Dividend Yield and Dividend Growth Strategies

We also provide total returns for dividend oriented strategies (high dividend yield strategy and high dividend growth strategy). The total return performance calculation assumes that dividends paid on securities in a portfolio are deposited in a cash account on the ex-dividend date, and are not reinvested. The performance is presented relative to the equal weighted total returns index of stocks in the S\&P 500 as of the last business day of each month.

This report includes strategies for informational or descriptive purposes, and inclusion here is not equivalent to a recommendation of the strategy or portfolio.

Past performance should not and cannot be viewed as an indicator of future performance. A complete performance record is available upon request.

## Advances \& Declines

Advances and declines are based on the price returns of each stock for each relevant period. The portfolio rebalancing done each month constitutes the start of a new period for each stock in the portfolio. The performance period for the stock being removed will end when the stock is removed from the portfolio. For the stock being added, the performance period will begin when it is added to the portfolio.

## Definitions

Absolute return: Absolute return is calculated based on monthly returns and reflects simple price appreciation (depreciation) over the stated period. Stocks in each screen are equally weighted. Returns do not reflect dividend or transaction costs.

Dividend Discount Model Alpha: The implied return from the BofAML Quantitative Strategy three-stage dividend discount model less the required return from a Capital Asset Pricing Model. Presented as a decile rank.

Dividend Yield: Indicated dividend divided by month-end price.
Price/Book Value: Month-end price divided by the most recently reported book value per share.

Price/Cash Flow: Month-end price divided by the most recently reported cash flow. Cash flow is defined as earnings post extraordinary items plus depreciation.

Price/Free Cash Flow: Month-end price divided by most recently reported free cash flow. Free Cash flow is defined as earnings post extraordinary items plus depreciation minus capital expenditures.

Price/Sales: Month-end market value divided by most recently reported sales.
EVIEBITDA: Enterprise Value (Equity Market Capitalization + Long Term Debt + Short Term Debt + Preferred Stock + Minority Interest - Cash \& Cash Equivalents) divided by EBITDA (Reported Net Income + Special Items - Minority Interest + Interest Expense + Income Tax Expense + Depreciation and Amortization) - most recently reported.

Relative Strength: The ratio of the 30 -week moving average of price to the 75 week moving average.

Most Active: Stocks have the highest monthly share trading volume.
Low Price: Absolute price level of the stock at month-end.
5Wk/30Wk Moving Average: The ratio between the average daily closing price of a stock over five weeks versus that over thirty weeks.

10Wk/40Wk Moving Average: The ratio between the average daily closing price of a stock over ten weeks versus that over forty weeks.

Price/200-Day Moving Average: A ratio between month-end closing price and average closing price over the last 200 days.

Price Return - 12-Month Performance: Absolute price return over the last twelve months.

Price Return - 11-Month Performance: Absolute price return from one year ago, ignoring the most recent month.

Price Return - 9-Month Performance: Absolute price return over the last nine months.

Price Return - 3-Month Performance: Absolute price return over the last three months.

Price Return - 12-Month and 1-Month Performance: Equal weighted rank of stocks by (1) highest price return over the last twelve months and (2) highest price return over the most recently ended month.

Price Return - 12-Month and 1-Month Reversal: Equal weighted rank of stocks by (1) highest price return over the last twelve months and (2) lowest price return over the last one month.

Earnings Momentum: The difference between 12-month trailing EPS and yearago 12-month trailing EPS divided by year-ago 12-month trailing EPS.

Projected 5-Year EPS Growth: The five-year EPS growth rate estimated by BofAML Fundamental Equity Research. If no BofAML estimate exists, then I/B/E/S Mean Long Term Growth Estimate is used.

Earnings Torpedo: I/B/E/S FY2 estimate less latest actual annual EPS divided by month-end price.

Earnings Surprise: A forecast earnings surprise variable which compares BofAML estimates to those of the consensus after adjusting for the range of estimates. Stocks are ranked from 1 to 10, with 1 being among the most optimistic, relative to the consensus, 10 being among the most pessimistic. Consensus estimated earnings data are courtesy of I/B/E/S.

EPS Estimate Revision: The difference between the I/B/E/S FY1 estimate and that of three months ago divided by the absolute value of $\mathrm{I} / \mathrm{B} / \mathrm{E} / \mathrm{S}$ FY1 estimate of three months ago.

Beta: A measure of non-diversifiable risk. It is calculated using regression Strategy incorporating 60 months of price performance versus that of the S\&P 500.

Variability of EPS: The degree of variability in quarterly EPS over the past 5 years. Stocks are ranked from 10 to 1 with 10 being the most variable.

EPS Estimate Dispersion: The coefficient of variation among I/B/E/S FY2 estimates. Presented as a decile rank.

Dividend Growth: The growth between trailing 4-quarter total common dividends and year-ago trailing 4-quarter total common dividends.

Neglect-Institutional Ownership: Those companies with the lowest proportions of float-adjusted shares held by institutional owners are considered more neglected.

Neglect-Analyst Coverage: Those companies with the lowest number of analysts submitting ratings to FirstCall.

Firm Size: Month-end market value.
Foreign Exposure: The ratio of foreign sales to total sales.
Equity Duration: An adaptation of our Dividend Discount Model which measures the interest-rate sensitivity of a stock. Longer durations (higher numbers) suggest more interest-rate sensitivity.

P/E-to-Growth: Trailing twelve months P/E divided by the five-year EPS growth rate estimated by BofAML Fundamental Equity Research. If no BofAML estimate exist, then the IBES Mean Long Term Growth Estimate is used.

Return on Equity One-Year Average: Net income divided by average equity provided.

Return on Equity Five-Year Average: Five-year average return on equity.
Return on Assets: Net income plus interest and taxes as a percent of average total assets.

Return on Capital: The sum of net income, interest expense and minority interest, as a percent of average total invested capital which is inclusive of longterm debt, preferred stock, common equity, and minority interest.

Return on Equity One-Year Average (Adjusted for Debt): The ROE of companies with higher debt levels are considered lower than those of companies with lower debt levels based on their debt-to-equity ratios.

Return on Equity Five-Year Average (Adjusted for Debt): The average five year ROE of companies with higher debt levels are considered lower than those of companies with lower debt levels based on their debt-to-equity ratios.

## Link to Definitions

## Macro

Click here for definitions of commonly used terms.

## Important Disclosures

FUNDAMENTAL EQUITY OPINION KEY: Opinions include a Volatility Risk Rating, an Investment Rating and an Income Rating. VOLATILITY RISK RATINGS, indicators of potential price fluctuation, are: A - Low, B - Medium and C - High. INVESTMENT RATINGS reflect the analyst's assessment of a stock's: (i) absolute total return potential and (ii) attractiveness for investment relative to other stocks within its Coverage Cluster (defined below). There are three investment ratings: 1-Buy stocks are expected to have a total return of at least $10 \%$ and are the most attractive stocks in the coverage cluster; 2 - Neutral stocks are expected to remain flat or increase in value and are less attractive than Buy rated stocks and 3 - Underperform stocks are the least attractive stocks in a coverage cluster. Analysts assign investment ratings considering, among other things, the 0-12 month total return expectation for a stock and the firm's guidelines for ratings dispersions (shown in the table below). The current price objective for a stock should be referenced to better understand the total return expectation at any given time. The price objective reflects the analyst's view of the potential price appreciation (depreciation).

| Investment rating | Total return expectation (within 12-month period of date of initial rating) | Ratings dispersion guidelines for coverage cluster* |
| :---: | :---: | :---: |
| Buy | $\geq 10 \%$ | $\leq 70 \%$ |
| Neutral | $\geq 0 \%$ | $\leq 30 \%$ |
| Underperform | N/A | $\geq 20 \%$ |

* Ratings dispersions may vary from time to time where BofA Merrill Lynch Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

INCOME RATINGS, indicators of potential cash dividends, are: 7 - same/higher (dividend considered to be secure), 8-samellower (dividend not considered to be secure) and 9 - pays no cash dividend. Coverage Cluster is comprised of stocks covered by a single analyst or two or more analysts sharing a common industry, sector, region or other classification(s). A stock's coverage cluster is included in the most recent BofA Merrill Lynch Comment referencing the stock.

Due to the nature of strategic analysis, the issuers or securities recommended or discussed in this report are not continuously followed. Accordingly, investors must regard this report as providing stand-alone analysis and should not expect continuing analysis or additional reports relating to such issuers and/or securities.

Due to the nature of quantitative analysis, the issuers or securities recommended or discussed in this report are not continuously followed. Accordingly, investors must regard this report as providing stand-alone analysis and should not expect continuing analysis or additional reports relating to such issuers and/or securities.

BofA Merrill Lynch Research personnel (including the analyst(s) responsible for this report) receive compensation based upon, among other factors, the overall profitability of Bank of America Corporation, including profits derived from investment banking revenues.

## Other Important Disclosures

Officers of MLPF\&S or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments.

BofA Merrill Lynch Global Research policies relating to conflicts of interest are described at http://www.ml.com/media/43347.pdf.
"BofA Merrill Lynch" includes Merrill Lynch, Pierce, Fenner \& Smith Incorporated ("MLPF\&S") and its affiliates. Investors should contact their BofA Merrill Lynch representative or Merrill Lynch Global Wealth Management financial advisor if they have questions concerning this report.

Information relating to Non-US affiliates of BofA Merrill Lynch and Distribution of Affiliate Research Reports:
MLPF\&S distributes, or may in the future distribute, research reports of the following non-US affiliates in the US (short name: legal name): Merrill Lynch (France): Merrill Lynch Capital Markets (France) SAS; Merrill Lynch (Frankfurt): Merrill Lynch International Bank Ltd., Frankfurt Branch; Merrill Lynch (South Africa): Merrill Lynch South Africa (Pty) Ltd.; Merrill Lynch (Milan): Merrill Lynch International Bank Limited; MLI (UK): Merrill Lynch International; Merrill Lynch (Australia): Merrill Lynch Equities (Australia) Limited; Merrill Lynch (Hong Kong): Merrill Lynch (Asia Pacific) Limited; Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd.; Merrill Lynch (Canada): Merrill Lynch Canada Inc; Merrill Lynch (Mexico): Merrill Lynch Mexico, SA de CV, Casa de Bolsa; Merrill Lynch (Argentina): Merrill Lynch Argentina SA; Merrill Lynch (Japan): Merrill Lynch Japan Securities Co., Ltd.; Merrill Lynch (Seoul): Merrill Lynch International Incorporated (Seoul Branch); Merrill Lynch (Taiwan): Merrill Lynch Securities (Taiwan) Ltd.; DSP Merrill Lynch (India): DSP Merrill Lynch Limited; PT Merrill Lynch (Indonesia): PT Merrill Lynch Indonesia; Merrill Lynch (Israel): Merrill Lynch Israel Limited; Merrill Lynch (Russia): Merrill Lynch CIS Limited, Moscow; Merrill Lynch (Turkey I.B.): Merrill Lynch Yatirim Bank A.S.; Merrill Lynch (Turkey Broker): Merrill Lynch Menkul Değerler A.Ş.; Merrill Lynch (Dubai): Merrill Lynch International, Dubai Branch; MLPF\&S (Zurich rep. office): MLPF\&S Incorporated Zurich representative office; Merrill Lynch (Spain): Merrill Lynch Capital Markets Espana, S.A.S.V.; Merrill Lynch (Brazil): Bank of America Merrill Lynch Banco Multiplo S.A.

This research report has been approved for publication and is distributed in the United Kingdom to professional clients and eligible counterparties (as each is defined in the rules of the Financial Services Authority) by Merrill Lynch International and Banc of America Securities Limited (BASL), which are authorized and regulated by the Financial Services Authority and has been approved for publication and is distributed in the United Kingdom to retail clients (as defined in the rules of the Financial Services Authority) by Merrill Lynch International Bank Limited, London Branch, which is authorized by the Central Bank of Ireland and is subject to limited regulation by the Financial Services Authority - details about the extent of its regulation by the Financial Services Authority are available from it on request; has been considered and distributed in Japan by Merrill Lynch Japan Securities Co., Ltd., a registered securities dealer under the Financial Instruments and Exchange Act in Japan; is distributed in Hong Kong by Merrill Lynch (Asia Pacific) Limited, which is regulated by the Hong Kong SFC and the Hong Kong Monetary Authority; is issued and distributed in Taiwan by Merrill Lynch Securities (Taiwan) Ltd.; is issued and distributed in India by DSP Merrill Lynch Limited; and is issued and distributed in Singapore by Merrill Lynch International Bank Limited (Merchant Bank) and Merrill Lynch (Singapore) Pte Ltd. (Company Registration No.'s F 06872 E and 198602883D respectively) and Bank of America Singapore Limited (Merchant Bank). Merrill Lynch International Bank Limited (Merchant Bank) and Merrill Lynch (Singapore) Pte Ltd. are regulated by the Monetary Authority of Singapore. Merrill Lynch Equities (Australia) Limited (ABN 65006276 795), AFS License 235132 provides this report in Australia in accordance with section 911B of the Corporations Act 2001 and neither it nor any of its affiliates involved in preparing this research report is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this report in Brazil. Merrill Lynch (Dubai) is authorized and regulated by the Dubai Financial Services Authority (DFSA). Research reports prepared and issued by Merrill Lynch (Dubai) are prepared and issued in accordance with the requirements of the DFSA conduct of business rules.

Merrill Lynch (Frankfurt) distributes this report in Germany. Merrill Lynch (Frankfurt) is regulated by BaFin.
This research report has been prepared and issued by MLPF\&S and/or one or more of its non-US affiliates. MLPF\&S is the distributor of this research report in the US and accepts full responsibility for research reports of its non-US affiliates distributed to MLPF\&S clients in the US. Any US person receiving this research report and wishing to effect any transaction in any security discussed in the report should do so through MLPF\&S and not such foreign affiliates.

## General Investment Related Disclosures:

This research report provides general information only. Neither the information nor any opinion expressed constitutes an offer or an invitation to make an offer, to buy or sell any securities or other financial instrument or any derivative related to such securities or instruments (e.g., options, futures, warrants, and contracts for differences). This report is not intended to provide personal investment advice and it does not take into account the specific investment objectives, financial situation and the particular needs of any specific person. Investors should seek financial advice regarding the appropriateness of investing in financial instruments and implementing investment strategies discussed or recommended in this report and should understand that statements regarding future prospects may not be realized. Any decision to purchase or subscribe for securities in any offering must be based solely on existing public information on such security or the information in the prospectus or other offering document issued in connection with such offering, and not on this report.

Securities and other financial instruments discussed in this report, or recommended, offered or sold by Merrill Lynch, are not insured by the Federal Deposit Insurance Corporation and are not deposits or other obligations of any insured depository institution (including, Bank of America, N.A.). Investments in general and, derivatives, in particular, involve numerous risks, including, among others, market risk, counterparty default risk and liquidity risk. No security, financial instrument or derivative is suitable for all investors. In some cases, securities and other financial instruments may be difficult to value or sell and reliable information about the value or risks related to the security or financial instrument may be difficult to obtain. Investors should note that income from such securities and other financial instruments, if any, may fluctuate and that price or value of such securities and instruments may rise or fall and, in some cases, investors may lose their entire principal investment. Past performance is not necessarily a guide to future performance. Levels and basis for taxation may change.

This report may contain a short-term trading idea or recommendation, which highlights a specific near-term catalyst or event impacting the company or the market that is anticipated to have a short-term price impact on the equity securities of the company. Short-term trading ideas and recommendations are different from and do not affect a stock's fundamental equity rating, which reflects both a longer term total return expectation and attractiveness for investment relative to other stocks within its Coverage Cluster. Short-term trading ideas and recommendations may be more or less positive than a stock's fundamental equity rating.

BofA Merrill Lynch is aware that the implementation of the ideas expressed in this report may depend upon an investor's ability to "short" securities or other financial instruments and that such action may be limited by regulations prohibiting or restricting "shortselling" in many jurisdictions. Investors are urged to seek advice regarding the applicability of such regulations prior to executing any short idea contained in this report.

Foreign currency rates of exchange may adversely affect the value, price or income of any security or financial instrument mentioned in this report. Investors in such securities and instruments, including ADRs, effectively assume currency risk.

UK Readers: The protections provided by the U.K. regulatory regime, including the Financial Services Scheme, do not apply in general to business coordinated by BofA Merrill Lynch entities located outside of the United Kingdom. BofA Merrill Lynch Global Research policies relating to conflicts of interest are described at http://www.ml.com/media/43347.pdf.

Officers of MLPF\&S or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments.

MLPF\&S or one of its affiliates is a regular issuer of traded financial instruments linked to securities that may have been recommended in this report. MLPF\&S or one of its affiliates may, at any time, hold a trading position (long or short) in the securities and financial instruments discussed in this report.

BofA Merrill Lynch, through business units other than BofA Merrill Lynch Global Research, may have issued and may in the future issue trading ideas or recommendations that are inconsistent with, and reach different conclusions from, the information presented in this report. Such ideas or recommendations reflect the different time frames, assumptions, views and analytical methods of the persons who prepared them, and BofA Merrill Lynch is under no obligation to ensure that such other trading ideas or recommendations are brought to the attention of any recipient of this report.

In the event that the recipient received this report pursuant to a contract between the recipient and MLPF\&S for the provision of research services for a separate fee, and in connection therewith MLPF\&S may be deemed to be acting as an investment adviser, such status relates, if at all, solely to the person with whom MLPF\&S has contracted directly and does not extend beyond the delivery of this report (unless otherwise agreed specifically in writing by MLPF\&S). MLPF\&S is and continues to act solely as a broker-dealer in connection with the execution of any transactions, including transactions in any securities mentioned in this report.

## Copyright and General Information regarding Research Reports:

Copyright 2012 Merrill Lynch, Pierce, Fenner \& Smith Incorporated. All rights reserved. iQmethod, iQmethod 2.0, iQprofile, iQtoolkit, iQworks are service marks of Merrill Lynch \& Co., Inc. iQanalytics®, iQcustom®, iQdatabase® are registered service marks of Merrill Lynch \& Co., Inc. This research report is prepared for the use of BofA Merrill Lynch clients and may not be redistributed, retransmitted or disclosed, in whole or in part, or in any form or manner, without the express written consent of BofA Merrill Lynch. BofA Merrill Lynch Global Research reports are distributed simultaneously to internal and client websites and other portals by BofA Merrill Lynch and are not publicly-available materials. Any unauthorized use or disclosure is prohibited. Receipt and review of this research report constitutes your agreement not to redistribute, retransmit, or disclose to others the contents, opinions, conclusion, or information contained in this report (including any investment recommendations, estimates or price targets) without first obtaining expressed permission from an authorized officer of BofA Merrill Lynch.

Materials prepared by BofA Merrill Lynch Global Research personnel are based on public information. Facts and views presented in this material have not been reviewed by, and may not reflect information known to, professionals in other business areas of BofA Merrill Lynch, including investment banking personnel. BofA Merrill Lynch has established information barriers between BofA Merrill Lynch Global Research and certain business groups. As a result, BofA Merrill Lynch does not disclose certain client relationships with, or compensation received from, such companies in research reports. To the extent this report discusses any legal proceeding or issues, it has not been prepared as nor is it intended to express any legal conclusion, opinion or advice. Investors should consult their own legal advisers as to issues of law relating to the subject matter of this report. BofA Merrill Lynch Global Research personnel's knowledge of legal proceedings in which any BofA Merrill Lynch entity and/or its directors, officers and employees may be plaintiffs, defendants, co-defendants or co-plaintiffs with or involving companies mentioned in this report is based on public information. Facts and views presented in this material that relate to any such proceedings have not been reviewed by, discussed with, and may not reflect information known to, professionals in other business areas of BofA Merrill Lynch in connection with the legal proceedings or matters relevant to such proceedings.

This report has been prepared independently of any issuer of securities mentioned herein and not in connection with any proposed offering of securities or as agent of any issuer of any securities. None of MLPF\&S, any of its affiliates or their research analysts has any authority whatsoever to make any representation or warranty on behalf of the issuer(s). BofA Merrill Lynch Global Research policy prohibits research personnel from disclosing a recommendation, investment rating, or investment thesis for review by an issuer prior to the publication of a research report containing such rating, recommendation or investment thesis.

Any information relating to the tax status of financial instruments discussed herein is not intended to provide tax advice or to be used by anyone to provide tax advice. Investors are urged to seek tax advice based on their particular circumstances from an independent tax professional.

The information herein (other than disclosure information relating to BofA Merrill Lynch and its affiliates) was obtained from various sources and we do not guarantee its accuracy. This report may contain links to third-party websites. BofA Merrill Lynch is not responsible for the content of any third-party website or any linked content contained in a third-party website. Content contained on such third-party websites is not part of this report and is not incorporated by reference into this report. The inclusion of a link in this report does not imply any endorsement by or any affiliation with BofA Merrill Lynch. Access to any third-party website is at

Cases 12-E-0201 \& 12-G-0202
DUAH
Exhibit (KXD-20)

Bank of America \#
Merrill Lynch
11 July 2012
your own risk, and you should always review the terms and privacy policies at third-party websites before submitting any personal information to them. BofA Merrill Lynch is not responsible for such terms and privacy policies and expressly disclaims any liability for them.

Certain outstanding reports may contain discussions and/or investment opinions relating to securities, financial instruments and/or issuers that are no longer current. Always refer to the most recent research report relating to a company or issuer prior to making an investment decision.

In some cases, a company or issuer may be classified as Restricted or may be Under Review or Extended Review. In each case, investors should consider any investment opinion relating to such company or issuer (or its security and/or financial instruments) to be suspended or withdrawn and should not rely on the analyses and investment opinion(s) pertaining to such issuer (or its securities and/or financial instruments) nor should the analyses or opinion(s) be considered a solicitation of any kind. Sales persons and financial advisors affiliated with MLPF\&S or any of its affiliates may not solicit purchases of securities or financial instruments that are Restricted or Under Review and may only solicit securities under Extended Review in accordance with firm policies.

Neither BofA Merrill Lynch nor any officer or employee of BofA Merrill Lynch accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this report or its contents.
JPUTS AND CALCULATIONS FOR STAFF CAPM

Merril Lynch Cost of Market
Apr-12
May-12
Jun-12

Implied Required
12.30\% 12.40\%
$12.50 \%$ 12.50\%
$12.20 \% \quad 12.20 \%$
Merril Lynch Cost of Market ${ }^{1}$ 12.35\%
Proxy Group Beta
0.70
Market Risk Premium (4/12-6/12)
9.97\%
Treasury Rates ${ }^{2}$

|  | $\frac{10 \text { year }}{}$ | $\underline{30 \text { year }}$ |
| ---: | :---: | :---: |
| Apr-12 | $3.05 \%$ | $3.18 \%$ |
| May-12 | $1.80 \%$ | $2.93 \%$ |
| Jun-12 | $1.62 \%$ | $2.70 \%$ |

Average
1.82\%
2.94\%
Risk Free Rate (4/12-6/12)
2.38\%

Traditional CAPM Calculation
Risk Free Rate + (Beta * (Market Return - Risk Free Rate)
Traditional CAPM ROE
9.36\%

## Zero Beta CAPM Calculation

Risk Free Rate + (0.75*Beta * (Market Return - Risk Free Rate)) $+\left(0.25^{*}\right.$ (Market Return - Risk Free Rate))
Zero Beta CAPM ROE
10.11\%

[^26]
## Rethinking ROE

## Business \& Money

## Rethinking ROE

## Rational estimates lead to reasonable valuations.

## By Steven Kihm

When setting returns on equity, regularors might be doing the right thing, but for the wrong reason.

The U.S. Supreme Court in 1923 established that regulators should set rates of return that sustain investor confidence in the integrity of the utility, and that enable the utility to maintain its credit standing so it can raise the funds necessary to provide service to its customers. ${ }^{1}$ Regulators seem to be meeting these pragmatic requirements. The problem arises from the manner in which regulators arrive at the authorized returns.

This isn't a problem in the rate case per se, as the Court has also said that the end result of the process is what's important, and not the method used to set rates of return. ${ }^{2}$ However, consequences of a faulty process manifest themselves elsewhere, and with critical impact. An incorrect cost of equity estimate makes it impossible to derive accurate financial valuation estimates.

Failure to understand the actual situation in this regard could cause execurives and regulators to make serious valuation errors when analyzing utility resources. Those errors could cost utility investors billions of dollars.

## Fallacy of Common Practice

Many rate-of-return witnesses suggest that in principle a utility's cost of equity (k) can be estimated by the following formula, or by a multi-stage variant of it:
$k=$ dividend yield + nominal GDP growth rate forecast.
The typical utility dividend yield today is about 4.5 percent; long-range annual GDP growth forecasts currently lie in the 5 to 6 percent range. Adding the two components produces a utility cost of equity estimate of about 10 percent, and regulatory decisions match that model result quite closely; the industry's median authorized return on

> The utility industry could become a less significant part of the economic pie.

equity in 2010 was 10.2 percent. ${ }^{3}$ Who could argue with such a straightforward process, especially since it's so widely used?

However, the fact that this is a popular procedure isn't compelling. Appeal to common practice is a logical fallacy, one that offers no support for the proposition at hand. As logic scholars teach: In a sound argument, the action must be justified on its own merits, and what others are doing, and the conclusions they may have reached, are of little or no consequence. ${ }^{4}$
If one understands the true relationship between GDP growth and utility growth potential, and if one embraces the essential nature of the cost of equity concept, a 10 percent uility cost of equiry estimate is too high to be reasonable. No rational investor would expect utility growth to come close to GDP growth over the long run, and therefore the commonly used model is flawed.

Furchermore, corporate finance officers suggest that the cost of equity for the rypical U.S. corporation today is only about 8 percent. The finance literature provides similar results. If that's the case, again utility costs of equiry can't be 10 percent.
A 10 percent figure nevertheless is likely in the range of reasonableness for the return-on-equity measure, which is the variable that matters in the rate case. Under proper regulation, one that replicates the results observed in competitive markets, the return on equity should lie above the cost of equity. The key is to note this distinction between the return on equity and the cost of equiry, rather than treating them as synonymous.

GDP and the Shrinking Utility
Of the arguments in support of the link between GDP growth and utility growth, the most-puzaling rests on an ill-defined consequence-i.e., if utilities don't keep pace with overall economic growth, they'll become a shrinking segment of the economy in a relative sense. As the U.S. continues to evolve from an energy-intensive manufacturing-based economy to one driven more by intellectual capital, there's no reason the urility industry couldn't become a less significant part of the economic pie. To suggest that this result couldn't occur represents wishful thinking, not economic analysis.

This argument also confuses aggregate growth with per-share growth. As an example, Southern Company's financial history demonstrates this effect. From 1995 to 2010, the utility's annual aggregate dividend payments grew ar 4.2 percent per year, while nominal GDP grew at 4.6 percent per year. Yet Southern Company didn't come close to matching GDP growth in the sense that matters. ")

Steve Kihm (skihm@ecw.org) is a chartered financial analyst and research director at the Energy Center of Wisconsin.

Per-share growth drives investor return expectations. While the numerator of the dividend-per-share metric was increasing at 4.2 percent per year, Southern Company was issuing millions of shares of new stock, causing the denominator of that measure to increase at 1.6 percent per year. This produced dividend-per-share growth of only 2.6 percent per year, noticeably below the annual GDP growth rate over that period.

To suggest that utilities can grow at the rate of GDP expansion fails to recognize the very nature of GDP growth. The economy sets a vicious pace, one that is quite difficult for most firms to match. The typical S\&P 500 company doesn't keep pace with GDP growth. If those companies can't match the GDP growth rate, the slow-growing urility industry has no chance of doing so.

The GDP growth rate isn't the longrun average growth rate of firms in the economy-instead it's the maximum growth rate for even the fastest-growing firm. Most firms won't keep up with GDP growth over the long run. This is especially true for utilities. As stated in the journal Applied Corporate Finance: In the long run, a firm cannot grow at a rate significantly greater than the growth rate of the economy in which it operates... There are no logical or mathematical limits on the downside... Because there is no economic basis for arguing that this cannot happen, there is no reason why we cannot use a stable growth rate much lower than the nominal growth rate in the economy. ${ }^{5}$
In the last half of the $20^{\text {th }}$ century, nominal GDP grew at about 8 percent per year. Dividends per share for the S\&P 500 Index grew at only 6 percent per year. Dividends per share for Moody's Electric Uxility stock index grew even more slowly at less than 4 percent per year. This suggests that utilities can be expected to grow not at the GDP
growth rate, but at about half that rate on an annual basis.

Much of the furure growth of the economy will come from small emerging firms-most of which aren't included in stock indices. As analysts Arnott and Bernstein write in the Financial Analysts Journal:

Can't shareholders expect to participate in the growth of the economy? No. Shareholders can expect to participate only in the growth of the enterprises chey are investing in. An important engine for economic growth is che creation of new enterprises. The investor in today's enterprises does not own tomorrow's new enterprises. ${ }^{6}$ Many of the firms that will drive GDP growth in five, 10 , or 20 years and beyond haven't yet been formed. They, not the existing firms, will be the real growth engines of the future.

> Using the typical authorized ROE as a proxy for a utility's cost of equity causes billion-dollar valuation errors.

## GDP Growth and

## Investor Returns

When one considers the true relationship between GDP growth and long-run stock returns, the results are sobering. The fundamentals are set forth in a Financial Analysts Journal article, "Economic Growth and Equity Investing": The long-run performance of equity investments is fundamentally linked to growth in earnings. Earnings growth, in turn, depends on growth in real GDP. This article demonstrates that both theoretical research and empirical research in development economics suggest
relatively strict limits on future growth. In particular, real GDP growth in excess of 3 percent in the long run is highly unlikely in the developed world. In light of ongoing dilution in earnings per share, this finding implies that investors should anticipate real returns on U.S. common stocks to average no more than about 4 to 5 percent in real terms. ${ }^{7}$
If inflation is expected to be about 3 percent going forward, then long-run nominal stock returns will be about 7 to 8 percent for stocks in general.

The evidence that long-run stock returns are expected to be in the single digits pervades not only the academic finance literature and corporate finance departments, but also the popular financial press. With the dividend yield on the S\&P 500 today just under 2 percent, and with GDP growth forecasted to be in the 5 to 6 percent annual range, an expected long-run total stock return as high as 10 percent per year is simply out of the question for the rypical firm, and especially for utilities. As cconomist Burton Malkiel predicts:

The returns for both stocks and bonds will undoubtedly be lower than the returns realized in the 1980s and 1990s. The most likely estimates we can make for the stock market when dividend yields are in the vicinity of 2 percent is that the total rate of return over the longer run will be in the upper single digits. ${ }^{8}$
Reflecting realistic prospects relative to GDP growth potential would put long-run utility growth at about 2.8 percent per year-half the projected GDP growth rate-and when combined with the typical 4.5 percent dividend yield would produce an expected utility stock return of only 7.3 percent. This estimate is in keeping with not only the finance literature, but more importantly for those with a practical bent, with over

10,000 survey responses collected over the past decade from corporate chief financial officers (CFOs).

Current estimates from the CFOs suggest that the cost of equiry for the typical firm today is about 8 percent. ${ }^{\text {. }}$ Using the CFOs' cost of equity estimate allows for accurate valuations of utility stocks. Using regulators' authorized returns on equity as proxies for the utility cost of equity does not. That goes to the heart of the matter discussed.

Some rate-of-return witnesses acknowledge that while forward-looking investor returns may be lower than they have been in the past, they argue that those returns understate the utility's cost of equiry. That suggestion reveals a fundamental lack of understanding of the cost-of-equiry concept. As Roger Morin writes in the New Regulatory Finance: The cost of capital to the utility is synonymous with the investors' return... Return and cost are two sides of the same coin. The return to the investor is the cost to the utility. ${ }^{10}$
If the investors' expected total return is 8 percent, then by definition the utility's cost of equity is also 8 percent. That doesn't mean, however, that the fair return on equity is 8 percent. That's where the proper distinction lies. Unfortunately, most regulators aren't making that critically important distinction.

## ROE and the Cost of Equity

In contrast to the prescription that the investors' expected return and the cost of equiry are one and the same, finance principles make it clear that a firm's return on equity and its cost of equity are fundamentally distinct variables. According to a 1970 article:

Altogether distinct units are employed for measuring rate of return: 1) book rate units (return on equity] and 2) discounted cash flow units [cost of equity]. Rarely will the two produce the same

result, and the use of one measure as a surrogate for the other may prove highly misleading. ${ }^{11}$
Financial researchers discovered long ago that in real markets returns on equity tend to settle in at industry averages noticeably above the cost of equiry. Therefore, to value firms accurately, one must assume that the long-run return on equity will exceed the cost of equiry indefinitely-ie., that the firm will earn excess returns over the long run. As economist Aswath Damodaran states in a 2001 text:

Some analysts believe that the only assumption sustainable in stable growth is a zero excess return assumption; the return on capital is set equal to the cost of capital. Although we agree with this view in principle, it is difficult to assume in practice that all investments, including existing assets, will suddenly lose capacity to earn excess rerurns. Since entire industries may earn excess returns over long periods, we believe that assuming a firm's return on capi-
tal will move toward its industry average yields a more reasonable estimate of value. ${ }^{12}$
The Value Line Investment Survey projects that over the next three to five years the companies that comprise the Dow Jones Industrial Average (DJIA) will produce a median return on equiry of 18.8 percent. There is no evidence to suggest that these returns will decline anytime soon. Nor is there any credible evidence to suggest that the cost of equiry for these firms lies anywhere near chat level.

Combining the DJIA companies' current dividend yields with Value Lines projected three-to-five-year dividend growth rates produces a cost of equity estimate for these firms of 8.7 percent, which is close the CFO' estimate. This is about 1,000 basis points below the return on equity those firms will likely earn over the next several years.

## Regulatory Policy

In a dynamic economy, the notion that regulators should set utility returns on equity at the cost of equity lacks a solid economic foundation. ${ }^{13}$ Regula-
$\qquad$

tors who set returns in this fashion would leave utility executives in the economic doldrums, with no way of making real progress. As Berkeley Prof. Kenneth Train wrote:

Suppose instead that the regulator sets the fair rate of return equal to the cost of capital... [T]he firm would earn the same profit whether it increased or decreased output, used an efficient or inefficient input mix, and wasted inputs or not. In fact, the firm would make the same profit if it closed down and sold off its capital. ${ }^{14}$
Neither utility executives nor regulators should find that outcome to be appropriate. A more reasonable standard, and one that regulators appear to have adopted implicitly, is to set the return on equiry (e.g., 10.2 percent) above the cost of equity (e.g., 7.3 percent). This parallels the qualitative relationship between rates of return and costs of equiry as observed in comperitive markets where the typical firm earns returns on equiry noticeably in excess of that cost rate.

According to Roger Morin:
If regulation is a substiture for comperition, and if the cost of capital is to play the same role in the utility industry as in unregulated industries, then the allowed rate of return should be set in excess of the cost of capital. ${ }^{15}$
This is much more chan just an intellectually challenging thought. Failure to recognize this result leads to problems not in the rate case, but outside it. Using authorized utility returns on equity as proxies for the cost of equity will lead to massive valuation errors.

> Selecting the fair return on equity is a judgment call, not a modeling exercise.

## Cost of Equity in Valuation

If a utility is in steady-state growth mode, one can use the following formula to estimate the per-share equiry value of the company. ${ }^{16}$

$$
P=\frac{B V \times R O E \times(1-\mathrm{b})}{k-b \times R O E}
$$

In this equation, $P$ is the stock price; $B V$ is the book value per share; ROE is the expected return on equiry; $b$ is the earnings retention ratio (i.e., the proportion of earnings retained for reinvestment); and $k$ is the cost of equity. Consolidated Edison serves as the example utility. This company is a good choice in this regard, as it is in a stablegrowth position and its regulator, the New York Public Service Commission, follows consistent ratemaking practices from year to year.

Substituting the data for this company for book value, return on equity, and earnings retention as provided in the Value Line Investment Surveg and using the CFO cost of equity estimate of 8 percent as a proxy for the utility's cost of equiry yields the following value estimate.
$\mathrm{P}=\frac{\$ 37.93 \times 0.095 \times(1-0.37)}{0.080-0.37 \times 0.095}=\$ 50.62$
This result is within 4 percent of Con Ed's actual stock price of $\$ \$ 2.56$ per share (June 2011). Con Ed has 293 million shares of common stock outstanding. This estimate then suggests that the utility's equity market capitalization is $\$ 14.7$ billion. This is close to its actual capitalization value of $\$ 15.2$ billion.

The CFOs' cost of equiry estimate leads to valuation estimates consistent with financial reality. That shouldn't be surprising, considering the CFOs' substantial knowledge of financial markets.

Rather than using the CFO cost of equity estimate of 8 percent, one could instead use the average authorized utility return on equity of 10.2 percent as the proxy for the utility's cost of equiry.
$\mathrm{P}=\frac{\$ 37.93 \times 0.095 \times(1-0.37)}{0.102-0.37 \times 0.095}=\$ 33.96$
This valuation estimate is about 35 percent below Con Ed's actual stock price. It suggests that rather than trading at a significant premium to book value
as Con Ed does today, the stock should be trading at a noticeable discount to that benchmark. It also suggests that on an aggregate basis Con Ed's equity market capitalization should be only $\$ 10.0$ billion, or about $\$ 5$ billion short of the actual market value.

This analysis demonstrates the magnitude of the errors one could make by using the regulators' authorized return on equity as a cost-of-equity estimate. The problem isn't that those returns are too high to be reasonable returns on equity, but that they don't reflect the utilities' costs of equiry, which is a different variable.

If regulators or utility executives make the mistake of using the typical authorized return on equity as a proxy for a utility's cost of equity, they will truly make billion-dollar valuation errors. This sort of error will carry over to valuations of individual resources as well. Those who don't have a solid grasp of the cost of equity concept will be at the economic mercy of those who understand its true nature and its likely numeric value.

## Setting ROE

The focus in this analysis has been on proper estimates of the cost of equity, and the implications of using improper estimates of that cost rate. It also stresses that the authorized return on equity should lie above the cost of equity.

But how does one estimate the return on equity? Economic theory provides little guidance here. The directive is more pragmatic. Regulators should look for guidance from the courts, not financial economics. They should set the return

on equity in such a way that it enables the utility to provide reliable service at reasonable rates. The adjectives "reliable" and "reasonable" are subjective terms. So is "fair." Regulators must set fair returns. The cost of equity estimate provides the lower bound. Selecting the fair return on equity is a judgment call, not a modeling exercise. $\mathbf{E}$

## Endnotes:

1. Bhucfield Water Works a Public Service Commission, 262 U.S. 679 (1923).
2. Fedenal Penuer Commistion a. Hope Nanural Gas Ca, 320 U.S. 591 (1944).
3. "ROE Survey Database," Public Utilitic Fornnightly, Nov. 1. 2010.
4. San Jose State University's Critioal Thinking Wed Page, htus//www.sjsuedu/depes/id
5. Damodaran, Aswath, Applied Corponzte Finance, 2011.
6. Arnotr, Robert and Peter Bernstein, "What Risk

Premium is Norma?" Financial Analoss journal, March/April 2002.
7. Comell, Bradford, "Economic Growth and Equity Invexting," Financial Analyst Joumal, January/February 2010.
8. Malkiel, Burron, A Random Walk Down Wall Sereet. 2007.
9. Graham, John and Campbell Harvey. "The Equiry Risk Premium amid a Global Financial Crisis," in Kolb, Robert, ed., Lesons From the Financial Crisus, 2010.
10. Morin, Roger, The New Regulatory Finance, Public Utilities Reports Inc., Vienna, Va, 2006.
11. Solomon, Erra, "Alternative Rate of Return Concepts and Their Implications for Utility Regulation," Bell Journal of Ecomomic and Management Science, Spring 1970.
12. Damodaran, Aswach, Corponate Finance: Theory and Practice, 2001.
13. Kahn, Alfred, The Economic of Ragulation, 1988.
14. Train, Kenneth, Optimal Regulation, 1991.
15. Morin, Roget, New Regulatory Finance, 2006.
16. Brealey, Richard, Stewart Myers and Franklin Allen, Principles of Corponate Finance, 2007.

## INUESTMENT CRPITRL



## $\$ 23.58$

## RIOK FRDE

 NHED STMTES OFAMERICA SE


A 95872190 A Wasiungton,d.c


INUESTMENT CAPITAL


VALUE $\$ 5.15$

## INUESTMENT CAPITAL



## vale $\$ 50.21$



$\qquad$
HBR.ORG


> Probably not, if your company is like most by Michael T. Jacobs and Anil Shivdasani


WITH TRILLIONS OF dollars in cash sitting on their balance sheets, corporations have never had so much money. How executives choose to invest that massive amount of capital will drive corporate strategies and determine their companies' competitiveness for the next decade and beyond. And in the short term, today's capital budgeting decisions will influence the developed world's chronic unemployment situation and tepid economic recovery.

Although investment opportunities vary dramatically across companies and industries, one would expect the process of evaluating financial returns on investments to be fairly uniform. After all, business schools teach more or less the same evaluation techniques. It's no surprise, then, that in a survey con-
$\qquad$
ducted by the Association for Financial Professionals (AFP), $80 \%$ of more than 300 respondents-and $90 \%$ of those with over $\$ 1$ billion in revenues-use discounted cash-flow analyses. Such analyses rely on free-cash-flow projections to estimate the value of an investment to a firm, discounted by the cost of capital (defined as the weighted average of the costs of debt and equity). To estimate their cost of equity, about $90 \%$ of the respondents use the capital asset pricing model (CAPM), which quantifies the return required by an investment on the basis of the associated risk.

But that is where the consensus ends. The AFP asked its global membership, comprising about 15,000 top financial officers, what assumptions they use in their financial models to quantify investment opportunities. Remarkably, no question received the same answer from a majority of the more than 300 respondents, $79 \%$ of whom are in the U.S. or Canada. (See the exhibit "Dangerous Assumptions.")

That's a big problem, because assumptions about the costs of equity and debt, overall and for indi-

## Dangerous Assumptions

The Association for Financial Professionals surveyed its members about the assumptions in the financial models they use to make investment decisions. The answers to six core questions reveal that many of the more than 300 respondents probably don't know as much about their cost of capital as they think they do.
vidual projects, profoundly affect both the type and the value of the investments a company makes. Expectations about returns determine not only what projects managers will and will not invest in, but also whether the company succeeds financially.

Say, for instance, an investment of \$20 million in a new project promises to produce positive annual cash flows of $\$ 3.25$ million for 10 years. If the cost of capital is $10 \%$, the net present value of the project (the value of the future cash flows discounted at that $10 \%$, minus the $\$ 20$ million investment) is essentially break-even-in effect, a coin-toss decision. If the company has underestimated its capital cost by 100 basis points ( $1 \%$ ) and assumes a capital cost of 9\%, the project shows a net present value of nearly \$1 million-a flashing green light. But if the company assumes that its capital cost is $1 \%$ higher than it actually is, the same project shows a loss of nearly $\$ 1$ million and is likely to be cast aside.

Nearly half the respondents to the AFP survey admitted that the discount rate they use is likely to be at least $1 \%$ above or below the company's true rate, suggesting that a lot of desirable investments are being passed up and that economically questionable projects are being funded. It's impossible to determine the precise effect of these miscalculations, but the magnitude starts to become clear if you look at how companies typically respond when their cost of capital drops by $1 \%$. Using certain inputs from the Federal Reserve Board and our own calculations, we

## What's Your Forecast Horizon? <br> What's Your Cost of Debt? <br> What's the Risk-Free Rate?


$\qquad$

## Idea in Brief

Companies differ widely in the assumptions built into the financial models they use to evaluate investment opportunities, as a recent survey by the Association for Financial Professionals found. Not a single question about such assumptions received the same answer from a majority of respondents.

These disagreements matter because time horizons, the costs of equity and debt, project risk adjustment, and other factors have profound effects-not just on what companies do with their investment capital, but on the ultimate health of those businesses and the broader economy.

With trillions of dollars in cash sitting on corporate balance sheets, it's time for senior managers to have an honest debate about precisely what affects the cost of capital.
estimate that a $1 \%$ drop in the cost of capital leads U.S. companies to increase their investments by about $\$ 150$ billion over three years. That's obviously consequential, particularly in the current economic environment.

Let's look at more of the AFP survey's findings, which reveal that most companies' assumed capital costs are off by a lot more than $1 \%$.

## The Investment Time Horizon

The miscalculations begin with the forecast periods.
Of the AFP survey respondents, $46 \%$ estimate an investment's cash flows over five years, $40 \%$ use either a 10- or a 15-year horizon, and the rest select a different trajectory.

Some differences are to be expected, of course. A pharmaceutical company evaluates an investment in a drug over the expected life of the patent,
whereas a software producer uses a much shorter time horizon for its products. In fact, the horizon used within a given company should vary according to the type of project, but we have found that companies tend to use a standard, not a project-specific, time period. In theory, the problem can be mitigated by using the appropriate terminal value: the number ascribed to cash flows beyond the forecast horizon. In practice, the inconsistencies with terminal values are much more egregious than the inconsistencies in investment time horizons, as we will discuss. (See the sidebar "How to Calculate Terminal Value.")

## The Cost of Debt

Having projected an investment's expected cash flows, a company's managers must next estimate a rate at which to discount them. This rate is based on the company's cost of capital, which is the weighted

online tool
Want to test out your own data and calculate your cost of capital? Go to hbr.org/ cost-of-capital.

## What's the Equity-Market

 Risk Premium?What's Your Beta Period?

What's Your Debt-to-Equity Ratio?


# A seemingly innocuous decision about what tax rate to use can have major implications for the calculated cost of capital. 

average of the company's cost of debt and its cost of equity.

Estimating the cost of debt should be a nobrainer. But when survey participants were asked what benchmark they used to determine the company's cost of debt, only $34 \%$ chose the forecasted rate on new debt issuance, regarded by most experts as the appropriate number. More respondents, $37 \%$, said they apply the current average rate on outstanding debt, and $29 \%$ look at the average historical rate of the company's borrowings. When the financial officers adjusted borrowing costs for taxes, the errors were compounded. Nearly two-thirds of all respondents (64\%) use the company's effective tax rate, whereas fewer than one-third (29\%) use the marginal tax rate (considered the best approach by most experts), and $7 \%$ use a targeted tax rate.

This seemingly innocuous decision about what tax rate to use can have major implications for the calculated cost of capital. The median effective tax rate for companies on the S\&P 500 is $22 \%$, a full 13 percentage points below most companies' marginal tax rate, typically near $35 \%$. At some companies this

## The Consequences of

Misidentifying the Cost of Capital
Overestimating the cost of capital can lead to lost profits; underestimating it can yield negative returns.

gap is more dramatic. GE, for example, had an effective tax rate of only $7.4 \%$ in 2010 . Hence, whether a company uses its marginal or effective tax rates in computing its cost of debt will greatly affect the outcome of its investment decisions. The vast majority of companies, therefore, are using the wrong cost of debt, tax rate, or both - and, thereby, the wrong debt rates for their cost-of-capital calculations. (See the exhibit "The Consequences of Misidentifying the Cost of Capital.")

## The Risk-Free Rate

Errors really begin to multiply as you calculate the cost of equity. Most managers start with the return that an equity investor would demand on a risk-free investment. What is the best proxy for such an investment? Most investors, managers, and analysts use U.S. Treasury rates as the benchmark. But that's apparently all they agree on. Some $46 \%$ of our survey participants use the 10 -year rate, $12 \%$ go for the five-year rate, $11 \%$ prefer the 30 -year bond, and $16 \%$ use the three-month rate. Clearly, the variation is dramatic. When this article was drafted, the 90day Treasury note yielded $0.05 \%$, the 10-year note yielded $2.25 \%$, and the 30 -year yield was more than 100 basis points higher than the 10-year rate.

In other words, two companies in similar businesses might well estimate very different costs of equity purely because they don't choose the same U.S. Treasury rates, not because of any essential difference in their businesses. And even those that use the same benchmark may not necessarily use the same number. Slightly fewer than half of our respondents rely on the current value as their benchmark, whereas $35 \%$ use the average rate over a specified time period, and $14 \%$ use a forecasted rate.

## The Equity Market Premium

The next component in a company's weighted-average cost of capital is the risk premium for equity market exposure, over and above the risk-free return. In theory, the market-risk premium should be the same at any given moment for all investors. That's because

## How to Calculate Terminal Value

it's an estimate of how much extra return, over the risk-free rate, investors expect will justify putting money in the stock market as a whole.

The estimates, however, are shockingly varied. About half the companies in the AFP survey use a risk premium between $5 \%$ and $6 \%$, some use one lower than $3 \%$, and others go with a premium greater than $7 \%$-a huge range of more than 4 percentage points. We were also surprised to find that despite the turmoil in financial markets during the recent economic crisis, which would in theory prompt investors to increase the market-risk premium, almost a quarter of companies admitted to updating it seldom or never.

## The Risk of the Company Stock

The final step in calculating a company's cost of equity is to quantify the beta, a number that reflects the volatility of the firm's stock relative to the market. A beta greater than 1.0 reflects a company with greater-than-average volatility; a beta less than 1.0 corresponds to below-average volatility. Most financial executives understand the concept of beta, but they can't agree on the time period over which it should be measured: $41 \%$ look at it over a five-year period, $29 \%$ at one year, $15 \%$ go for three years, and $13 \%$ for two.

Reflecting on the impact of the market meltdown in late 2008 and the corresponding spike in volatility, you see that the measurement period significantly influences the beta calculation and, thereby, the final estimate of the cost of equity. For the typical S\&P 500 company, these approaches to calculating beta show a variance of 0.25 , implying that the cost of capital could be misestimated by about $1.5 \%$, on average, owing to beta alone. For sectors, such as financials, that were most affected by the 2008 meltdown, the discrepancies in beta are much larger and often approach 1.0, implying beta-induced errors in the cost of capital that could be as high as $6 \%$.

## The Debt-to-Equity Ratio

The next step is to estimate the relative proportions of debt and equity that are appropriate to finance a project. One would expect a consensus about how to measure the percentage of debt and equity a company should have in its capital structure; most textbooks recommend a weighting that reflects the overall market capitalization of the company. But the AFP survey showed that managers are pretty evenly divided among four different ratios: current

For an investment with a defined time horizon, such as a new-product launch, managers project annual cash flows for the life of the project, discounted at the cost of capital. However, capital investments without defined time horizons, such as corporate acquisitions, may generate returns indefinitely.

When cash flows cannot be projected in perpetuity, managers typically estimate a terminal value: the value of all cash flows beyond the period for which predictions are feasible. A terminal value can be quantified in several ways; the most common (used by $46 \%$ of respondents to the Association for Financial Professionals survey) is with a perpetuity formula. Here's how it works:

First, estimate the cash flow that you can reasonably expect-stripping out extraordinary items such as one-off purchases or sales of fixed assetsin the final year for which forecasts are possible. Assume a growth rate for those cash flows in subsequent years. Then simply divide the final-year cash flow by the weighted-average cost of capital minus the assumed growth rate, as follows:

## TERMINAL VALUE $=\frac{\text { NORMALIZED FINAL-YEAR CASH FLOW }}{}$ (WACC - GROWTH RATE)

It's critical to use a growth rate that you can expect will increase for-ever-typically $1 \%$ to $4 \%$, roughly the long-term growth rate of the overall economy. A higher rate would be likely to cause the terminal value to overwhelm the valuation for the whole project. For example, over 50 years a $\$ 10$ million cash flow growing at $10 \%$ becomes a $\$ 1$ billion annual cash flow. In some cases, particularly industries in sustained secular decline, a zero or negative rate may be appropriate.

HBR.ORG To see how terminal-value growth assumptions affect a project's overall value, try inputting different rates in the online tool at hbr.org/cost-of-capital.
book debt to equity ( $30 \%$ of respondents); targeted book debt to equity (28\%); current market debt to equity (23\%); and current book debt to current market equity (19\%).

Because book values of equity are far removed from their market values, 10 -fold differences between debt-to-equity ratios calculated from book and market values are actually typical. For example, in 2011 the ratio of book debt to book equity for Delta Airlines was 16.6, but its ratio of book debt to market equity was 1.86 . Similarly, IBM's ratio of book debt to book equity in 2011 stood at 0.94, compared with less than 0.1 for book debt to market equity. For
those two companies, the use of book equity values would lead to underestimating the cost of capital by 2\% to 3\%.

## Project Risk Adjustment

Finally, after determining the weighted-average cost of capital, which apparently no two companies do the same way, corporate executives need to adjust it to account for the specific risk profile of a given investment or acquisition opportunity. Nearly 70\% do, and half of those correctly look at companies with a business risk that is comparable to the project or acquisition target. If Microsoft were contemplating investing in a semiconductor lab, for example, it should look at how much its cost of capital differs from that of a pure-play semiconductor company's cost of capital.

But many companies don't undertake any such analysis; instead they simply add a percentage point or more to the rate. An arbitrary adjustment of this kind leaves these companies open to the peril of overinvesting in risky projects (if the adjustment is

"Just swivel."


> Most U.S. businesses are not adjusting their investment policies to reflect the decline in their cost of capital.

not high enough) or of passing up good projects (if the adjustment is too high). Worse, $37 \%$ of companies surveyed by the AFP made no adjustment at all: They used their company's own cost of capital to quantify the potential returns on an acquisition or a project with a risk profile different from that of their core business.
these tremendous disparities in assumptions profoundly influence how efficiently capital is deployed in our economy. Despite record-low borrowing costs and record-high cash balances, capital expenditures by U.S. companies are projected to be flat or to decline slightly in 2012, indicating that most businesses are not adjusting their investment policies to reflect the decline in their cost of capital.

With $\$ 2$ trillion at stake, the hour has come for an honest debate among business leaders and financial advisers about how best to determine investment time horizons, cost of capital, and project risk adjustment. And it is past time for nonfinancial corporate directors to get up to speed on how the companies they oversee evaluate investments. $\sigma$

HBR Reprint R1207L

Michael T. Jacobs is a professor of the practice of finance at the University of North Carolina's KenanFlagler Business School, a former director of corporate finance policy at the U.S. Treasury Department, and the author of Short-Term America (Harvard Business School Press, 1991). Anil Shivdasani is the Wachovia Distinguished Professor of Finance at Kenan-Flagler and a former managing director at Citigroup Global Markets.

Harvard Business Review and Harvard Business Publishing Newsletter content on EBSCOhost is licensed for the private individual use of authorized EBSCOhost users. It is not intended for use as assigned course material in academic institutions nor as corporate learning or training materials in businesses. Academic licensees may not use this content in electronic reserves, electronic course packs, persistent linking from syllabi or by any other means of incorporating the content into course resources. Business licensees may not host this content on learning management systems or use persistent linking or other means to incorporate the content into learning management systems. Harvard Business Publishing will be pleased to grant permission to make this content available through such means. For rates and permission, contact permissions@harvardbusiness.org.

## CFA Institute

Earnings Growth: The Two Percent Dilution<br>Author(s): William J. Bernstein and Robert D. Arnott<br>Reviewed work(s):<br>Source: Financial Analysts Journal, Vol. 59, No. 5 (Sep. - Oct., 2003), pp. 47-55<br>Published by: CFA Institute<br>Stable URL: http://www.jstor.org/stable/4480511<br>Accessed: 05/03/2012 16:37

Your use of the JSTOR archive indicates your acceptance of the Terms \& Conditions of Use, available at http://www.jstor.org/page/info/about/policies/terms.jsp

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.


CFA Institute is collaborating with JSTOR to digitize, preserve and extend access to Financial Analysts Journal.

# Earnings Growth: The Two Percent Dilution 

William J. Bernstein and Robert D. Arnott


#### Abstract

Two important concepts played a key role in the bull market of the 1990 s. Both represent fundamental flaws in logic. Both are demonstrably untrue. First, many investors believed that earnings could grow faster than the macroeconomy. In fact, earnings must grow slower than GDP because the growth of existing enterprises contributes only part of GDP growth; the role of entrepreneurial capitalism, the creation of new enterprises, is a key driver of GDP growth, and it does not contribute to the growth in earnings and dividends of existing enterprises. During the 20th century, growth in stock prices and dividends was 2 percent less than underlying macroeconomic growth. Second, many investors believed that stock buybacks would permit earnings to grow faster than GDP. The important metric is not the volume of buybacks, however, but net buybacks-stock buybacks less new share issuance, whether in existing enterprises or through IPOs. We demonstrate, using two methodologies, that during the 20th century, new share issuance in many nations almost always exceeded stock buybacks by an average of 2 percent or more a year.


The bull market of the 1990s was largely built on a foundation of two immense misconceptions. Whether their originators were knaves or fools is immaterial; the errors themselves were, and still are, important. Investors were told the following:

1. With a technology revolution and a "new paradigm" of low payout ratios and internal reinvestment, earnings will grow faster than ever before. Real growth of 5 percent will be easy to achieve.
Like the myth of Santa Claus, this story is highly agreeable but is supported by neither observable current evidence nor history.
2. When earnings are not distributed as dividends and not reinvested into stellar growth opportunities, they are distributed back to shareholders in the form of stock buybacks, which are a vastly preferable way of distributing company resources to the shareholders from a tax perspective.
[^27]True, except that over the long term, net buybacks (that is, buybacks minus new issuance and options) have been reliably negative.

The vast majority of the institutional investing community has believed these untruths and has acted accordingly. Whether these tales are lies or merely errors, our implied indictment of these misconceptions is a serious one-demanding data. This article examines some of the data.

## Big Lie \#1: Rapid Earnings Growth

In the past two centuries, common stocks have provided a sizable risk premium to U.S. investors: For the 200 years from 1802 through 2001 (inclusive), the returns for stocks, bonds, and bills were, respectively, 8.42 percent, 4.88 percent, and 4.21 percent. In the most simplistic terms, the reason is obvious: A bill or a bond is a promise to pay interest and principal, and as such, its upside is sharply limited. Shares of common stock, however, are a claim on the future dividend stream of the nation's businesses. While the investor in fixed-income securities is receiving a modest fixed trickle from low-risk securities, the shareholder is the beneficiary of the ever-increasing fruits of innovationdriven economic growth.

Viewed over the decades, the powerful U.S. economic engine has produced remarkably steady growth. Figure 1 plots the real GDP of the United States since 1800 as reported by the U.S. Department

Figure 1. Real U.S. GDP Growth, 1800-2000

of Commerce. From that year to 2000, the economy as measured by real GDP, averaging about 3.7 percent growth a year, has grown a thousandfold. The long-term uniformity of economic growth demonstrated in Figure 1 is both a blessing and a curse. To know that real U.S. GDP doubles every 20 years is reassuring. But it is also a dire warning to those predicting a rapid acceleration of economic growth from the computer and Internet revolutions. Such extrapolations of technology-driven increased growth are painfully oblivious to the broad sweep of scientific and financial history, in which innovation and change are constant and are neither new to the current generation nor unique.

The impact of recent advances in computer science pales in comparison with the technological explosion that occurred between 1820 and 1855. This earlier era saw the deepest and most far reaching technology-driven changes in everyday existence ever seen in human history. The changes profoundly affected the lives of those from the top to the bottom of the social fabric in ways that can scarcely be imagined today. At a stroke, the speed of transportation increased tenfold. Before 1820, people, goods, and information could not move faster than the speed of the horse. Within a generation, journeys that had previously taken weeks and months involved an order of magnitude less time, expense, danger, and discomfort. Moreover, important information that previously required the same long journeys could now be transmitted instantaneously.

The average inhabitant of 1820 would have found the world 35 years later incomprehensible, whereas a person transported from 1967 to 2002 would have little trouble understanding the inter-
vening changes in everyday life. From 1820 to 1855, the U.S. economy grew sixfold, four times the growth seen in the "tech revolution" of the past 35 years. More importantly, a close look at the right edge of Figure 1-the last decade of the 20th century-shows that the acceleration in growth during the "new paradigm" of the tech revolution of the 1990s was negligible when measured against the broad sweep of history.

The relatively uniform increase in GDP shown in Figure 1 suggests that corporate profits experienced a similar uniformity in growth. And, indeed, Figure 2 demonstrates that, except for the Great Depression, during which overall corporate profits briefly disappeared, nominal aggregate corporate earnings growth has tracked nominal GDP growth, with corporate earnings remaining constant at 8-10 percent of GDP since 1929. The trend growth in corporate profits shown in Figure 2 is nearly identical, within a remarkable 20 bps , to the trend growth in GDP. ${ }^{1}$

Cannot stock prices also, then, be assumed to grow at the same rate as GDP? After all, a direct relationship between aggregate corporate profits and GDP has existed since at least 1929. The problem with this assumption is that per share earnings and dividends keep up with GDP only if no new shares are created. Entrepreneurial capitalism, however, creates a "dilution effect" through new enterprises and new stock in existing enterprises. So, per share earnings and dividends grow considerably slower than the economy.

In fact, since 1871, real stock prices have grown at 2.48 percent a year-versus 3.45 percent a year for GDP. Despite rising price-earnings ratios, we observe a "slippage" of 97 bps a year between stock

Figure 2. Nominal U.S. Corporate Profits and GDP, 1929-2000

prices and GDP. The true degree of slippage is much higher because almost half of the 2.48 percent rise in real stock prices after 1871 came from a substantial upward revaluation. The highly illiquid industrial stocks of the post-Civil War period rarely sold at more than 10 times earnings; often, they sold for multiples as low as 3 or 4 times earnings. These closely held industrial stocks gave way to instantly and cheaply tradable common shares, which today are priced nearly an order of magnitude more dearly.

Until the bull market of 1982-1999, the average stock was valued at $12-16$ times earnings and $20-25$ years' worth of dividends. By the peak of the bull market, both figures had tripled. Although the bull market was compressed into 18 years of the total period under discussion, this tripling of valuation levels was worth almost 100 bps a year-even when amortized over the full 130 -year span. Thus, per share earnings and dividends grew 2 percent a year slower than the macroeconomy. If aggregate earnings and dividends grew as quickly as the economy while per share earnings and dividends were growing at an average of 2 percent a year slower, then shareholders have seen a slippage or dilution of 2 percent a year in the per share growth of earnings and dividends.

The dilution is the result of the net creation of shares as existing and new companies capitalize their businesses with equity. An often overlooked, but unsurprising, fact is that more than half of aggregate economic growth comes from new ideas and the creation of new enterprises, not from the growth of established enterprises. Stock investments can participate only in the growth of estab-
lished businesses; venture capital participates only in the new businesses. The same investment capital cannot be simultaneously invested in both.
"Intrapreneurial capitalism," or the creation of new enterprises within existing companies, is a sound engine for economic growth, but it does not supplant the creation of new enterprises. Nor does it reduce the 2 percent gap between economic growth and earnings and dividend growth.

Note also that earnings and dividends grow at a pace very similar to that of per capita GDP (with some slippage associated with the "entrepreneurial" stock rewards to management). Consider that per capita GDP is a measure of productivity (with slight differences for changes in the work force) and aggregate economic wealth per capita can grow only in close alignment with productivity growth. Productivity growth is also the key driver of per capita income and of per share earnings and dividends. Accordingly, no one should be surprised that per capita GDP, per capita income, per share earnings, and per share dividends-all grow in reasonably close proportion to productivity growth.

If earnings and dividends grow faster than productivity, the result is a migration from return on labor to return on capital; if earnings and dividends grow more slowly, by a margin larger than the stock awards to management, then the economy migrates from rewarding capital to rewarding labor. Either way, such a change in the orientation of the economy cannot continue indefinitely. Figure 3 demonstrates the close link between the growth of real corporate earnings and dividends and the growth of real per capita GDP; note that all of these measures exhibit growth far below the growth of real GDP.

Figure 3. Link of U.S. Earnings and Dividends to Economic Growth, 1802-2001


Note: Real GDP, real per capita GDP, and real stock prices were all constructed so that the series are on a common basis of January $1802=100$.

## A Global Laboratory

Is the United States unique? For an answer, we compared dividend growth, price growth, and total return with data on GDP growth and per capita GDP growth for the 16 countries covered by Dimson, Marsh, and Staunton (2002) spanning the 20th century. ${ }^{2}$ The GDP data came from Maddison's $(1995,2001)$ world GDP survey for 1900-1998 and International Finance Corporation data for 1998-2000. The interrelationships of the data shown in Table 1 are complex:

- The first column contains the real return (in U.S. dollars) of each national stock market.
- The second is real per share dividend growth.
- The third is real aggregate GDP growth for each nation (measured in U.S. dollars).
- The fifth is growth of real per capita GDP (measured in U.S. dollars).
- Thus, the fourth column measures the gap between growth in per share dividends and aggregate GDP-an excellent measure of the leakage that occurs between macroeconomic growth and the growth of stock prices.
- The last column represents the gap between the growth in per share dividends and per capita GDP.
For the full 16-nation sample in Table 1, the average gap between dividend growth and the growth in aggregate GDP is a startling 3.3 percent. The annual shortfall between dividend growth and per capita GDP growth is still 2.4 percent.

The 20th century was not without turmoil. Therefore, we divided the 16 nations into two groups according to the degree of devastation visited upon them by the era's calamities. The first group suffered substantial destruction of the countries' productive physical capital at least once during the century; the second group did not.

The nine nations in Group 1-Belgium, Denmark, France, Germany, Italy, Japan, the Netherlands, Spain, and the United Kingdom-were devastated by one or both of the two world wars or by civil war. The remaining seven-Australia, Canada, Ireland, South Africa, Sweden, Switzerland, and the United States-suffered relatively little direct damage. Even in this fortunate group, Table 1 shows dividend growth that is 2.3 percent less than GDP growth and 1.1 percent less than per capita GDP growth, on average. These gaps are close to the 2.7 percent and 1.4 percent figures observed in the United States during the 20th century.

The data for nations that were devastated during World Wars I and II and the Spanish Civil War are even more striking: The good news is that the economies in Group 1 repaired the devastations wrought by the 20th century; they enjoyed overall GDP growth and per capita GDP growth that rivaled the growth of the less-scarred Group 2 nations. The bad news is that the same cannot be said for per share equity performance; a 4.1 percent slippage occurred between the growth of their economies and per share corporate payouts. The

Table 1. Dilution of GDP Growth as It Flows Through to Dividend Growth: 16 Countries, 1900-2000

| Country | Constituents of Real Stock Returns |  | Real GDP Growth | Dilution in Dividend Growth (vis-à-vis GDP growth) | Real per Capita GDP Growth | Dilution in Dividend Growth (vis-à-vis per capita GDP growth) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Real Return | Dividend Growth |  |  |  |  |
| Australia | 7.5\% | 0.9\% | 3.3\% | -2.4\% | 1.6\% | -0.7\% |
| Belgium | 2.5 | -1.7 | 2.2 | -3.9 | 1.8 | -3.5 |
| Canada | 6.4 | 0.3 | 4.0 | -3.7 | 2.2 | -1.9 |
| Denmark | 4.6 | -1.9 | 2.7 | -4.6 | 2.0 | -3.9 |
| France | 3.6 | -1.1 | 2.2 | -3.3 | 1.8 | -2.9 |
| Germany | 3.6 | -1.3 | 2.6 | -3.9 | 1.6 | -2.9 |
| Ireland | 4.8 | -0.8 | 2.3 | -3.1 | 2.1 | -2.9 |
| Italy | 2.7 | -2.2 | 2.8 | -5.0 | 2.2 | -4.4 |
| Japan | 4.2 | -3.3 | 4.2 | -7.5 | 3.1 | -6.4 |
| Netherlands | 5.8 | -0.5 | 2.8 | -3.3 | 1.7 | -2.2 |
| South Africa | 6.8 | 1.5 | 3.4 | -1.9 | 1.2 | 0.3 |
| Spain | 3.6 | -0.8 | 2.7 | -3.5 | 1.9 | -2.7 |
| Sweden | 7.6 | 2.3 | 2.5 | -0.2 | 2.0 | 0.3 |
| Switzerland | 5.0 | 0.1 | 2.5 | -2.4 | 1.7 | -1.6 |
| United Kingdom | 5.8 | 0.4 | 1.9 | -1.5 | 1.4 | -1.0 |
| United States | 6.7 | 0.6 | 3.3 | -2.7 | 2.0 | -1.4 |
| Full-sample average | 5.1 | -0.5 | 2.8 | -3.3 | 1.9 | -2.4 |
| War-torn Group 1 average | 4.0 | -1.4 | 2.7 | -4.1 | 1.9 | -3.3 |
| Non-war-torn Group 2 average | 6.4 | 0.7 | 3.0 | -2.3 | 1.8 | -1.1 |

creation of new enterprises in the wake of war was an even more important engine for economic recovery than in the Group 2 nations.

Thus, in Group 2 "normal nations" (i.e., those untroubled by war, political instability, and government confiscation of wealth), the natural ongoing capitalization of new technologies apparently produces a net dilution of outstanding shares of slightly more than 2 percent a year. The Group 1 nations scarred badly by war represent a more fascinating phenomenon; they can be thought of as experiments of nature in which physical capital is devastated and must be rebuilt. Fortunately, destroying a nation's intellectual, cultural, and human capital is much harder than destroying its economy; within little more than a generation, the GDP and per capita GDP of war-torn nations catch up with, and in some cases surpass, those of the undamaged nations. Unfortunately, the effort requires a high rate of equity recapitalization, which is reflected in the substantial dilution seen in Table 1 for the war-torn countries. This recapitalization savages existing shareholders.

In short, the U.S. experience was not unique. Around the world, every one of these countries except Sweden experienced dividend growth sharply slower than GDP growth, and only two countries experienced dividend growth even slightly faster than per capita GDP growth. The U.S. experience was better than most and was
similar to that of the other nations that were not devastated by war.

The data for the individual countries in Table 1 show that the average real growth in dividends was negative for most countries. It also shows that dilution of GDP growth (the fourth column) was substantial for all the countries studied and that dilution of per capita GDP growth (the last column) was substantial for most countries but fit dividend growth with much less "noise" than did the dilution of overall GDP growth.

This analysis has disturbing implications for "paradigmistas" convinced of the revolutionary nature of biotechnology, Internet, and telecommunications/broadband companies. A rapid rate of technological change may, in effect, turn "normal" Group 2 nations into strife-torn Group 1 nations: An increased rate of obsolescence effectively destroys the economic value of plant and equipment as surely as bombs and bullets, with the resultant dilution of per share payouts happening much faster than the technology-driven acceleration of economic growth-if such acceleration exists. How many of the paradigmistas truly believe that the tech revolution will benefit the shareholders of existing enterprises remotely as much as it can benefit the entrepreneurs creating the new enterprises that make up the vanguard of this revolution?

Whatever the true nature of the interaction of technological progress and per share earnings, dividends, and prices, it will come as an unpleasant surprise to many that even in the Group 2 nations, average real per share dividend growth was only 0.66 percent a year (rounded in Table 1 to 0.7 percent); for the war-torn Group 1 nations, it was disturbingly negative.

In short, the equity investor in a nation blessed by prolonged peace cannot expect a real return greatly in excess of the much-maligned dividend yield; the investor cannot expect to be rescued by more rapid economic growth. Not only is outsized economic growth unlikely to occur, but even if it does, its benefits will be more than offset by the dilution of the existing investor's ownership interest by technology-driven increased capital needs.

## Big Lie \#2: Stock Buybacks

Stock buybacks are attractive to companies and beneficial to investors. They are a tax-advantaged means of providing a return on shareholder capital and preferable to dividends, which are taxed twice. Buybacks have enormous appeal. But contrary to popular belief, they did not occur in any meaningful way in the 1990s.

To support this contention, we begin with a remarkably simple measure of slippage in per share earnings and dividend growth: the ratio of the proportionate increase in market capitalization to the proportionate increase in stock price. For example, if over a given period, the market cap increases by a factor of 10 and the cap-weighted price index increases by a factor of 5 , a 100 percent net share issuance has taken place in the interim. Formally,

$$
\text { Net dilution }=\left(\frac{1+c}{1+r}\right)-1
$$

where $c$ is capitalization increase and $r$ is price return. This relationship has the advantage of factoring out valuation changes, which are embedded in both the numerator and denominator, and neutralizing the impact of stock splits. Furthermore, it holds only for universal market indexes, such as the CRSP $1-10$ or the Wilshire 5000 , because less inclusive indexes can vary the ratio simply by adding or dropping securities. Figure 4 contains plots of the total market cap and price indexes of the CRSP $1-10$ beginning at the end of 1925.

The CRSP data contained NYSE-listed stocks until 1962. Even the CRSP data, however, can involve adding securities: CRSP added the Amex stocks in July 1962 and the Nasdaq stocks in July 1972, which created artificial discontinuities on those dates. The adjustment for these shifts is evident in Figure 5, for which we held the dilution ratio constant during the two months in question. ${ }^{3}$ Note how market cap slowly and gradually pulls away from market price. The gap does not look large in Figure 4, but by the end of 2001, the cap index had grown 5.49 times larger than the price index, suggesting that for every share of stock extant in 1926, 5.49 shares existed in late 2001. The implication is that net new share issuance occurred at an annualized rate of 2.3 percent a year. Note that this rate is identical to the average dilution for non-war-torn countries during the 20th century given in Table 1. To give a better idea of how this dilution has proceeded over the past 75 years, Figure 5 provides a dilution index, defined as the ratio of capitalization growth to price index growth.

Figure 4. CRSP 1-10 Market Cap and Price Indexes, 31 December 1925June 2002


Figure 5. Cumulative Excess Growth of Market Cap Relative to Price Index, 31 December 1925 through June 2002


Figure 5 traces the growth in the ratio of the capitalization of the CRSP 1-10 Index as compared with the market-value-weighted price appreciation of these same stocks. The fact that this line rises nearly monotonically shows clearly that new-share issuance almost always sharply exceeds stock buybacks. The notable exception occurred in the late 1980s, when buybacks modestly outpaced new share issuance (evident from the fact that the line falls slightly during these "Milken years"). This
development probably played a key role in precipitating the popular illusion that buybacks were replacing dividends. For a time, they did. But that stock buybacks were an important force in the 1990s is simply a myth. And belief in the myth may have been an important force in the bull market of the 1990s.

Figure 6 shows the rolling 1-year, 5 -year, and 10 -year dilution effect on existing equity shareholders as a consequence of a growth in the aggregate

Figure 6. Annualized Rate of Shareholder Dilution, 31 December 1935 through June 2002

supply of equity shares. Keep in mind that every 1 percent rise in equity capital is a 1 percent rise in market cap in which existing shareholders did not (could not) participate. Aside from the 1980s, this dilution effect on shareholders was essentially never negative-not even on a one-year basis. One can see how the myth of stock buybacks gained traction after the 1980s; even the 10-year average rate of dilution briefly dipped negative in the late 1980s. But then, during the late 1990s, stock buybacks were outstripped by new share issuance at a pace that was only exceeded in the IPO binge of 1926-1930. These conclusions hold true whether one is looking at net new share issuance on a 1-year, 5 -year, or 10-year basis.

Those who argue that stock buybacks will allow future earnings growth to exceed GDP growth can draw scant support from history. Investors did see enormous earnings growth, far faster than real economic growth, from 1990 to 2000. But Figure 3 shows how tiny that surge of growth was in the context of 130 years of earnings history. Much of the earnings surge of the 1990s was dubious, at best.

## The Eye of the Storm?

The big question today is whether the markets are likely to rebound into a new bull market or have merely been in the eye of the storm. We think the markets are in the eye.

The rapid earnings growth of the 1990s, which many pointed to as "proof" of a new paradigm, had several interesting characteristics:

1. A trough in earnings in the 1990 recession transformed into a peak in earnings in the 2000 bubble. Measuring growth from trough to peak is an obvious error; extrapolating that growth is even worse. This decade covered a large chunk of the careers of most people on Wall Street, many of whom have come to believe that earnings can grow very fast for a very long time. Part of conventional wisdom now is that earnings growth can outstrip macroeconomic growth.
2. Influenced by the new paradigm, analysts frequently ignored write-offs to focus increasingly on operating earnings. This practice is acceptable if write-offs are truly "extraordinary items," but it is not acceptable if write-offs become a recurring annual or biannual event, as was commonplace in the 1990s. Furthermore, what are extraordinary items for a single company are entirely ordinary for the economy as a whole. In some companies and some sectors, write-offs are commonplace. The focus on oper-
ating earnings for the broad market averages is misguided at best and deceptive at worst.
3. Those peak earnings of 1999-2000 consisted of three dubious components. The first is an underrecognition of the impact of stock options, which various Wall Street strategists estimated at 10-15 percent of earnings. The second is pension expense (or pension "earnings") based on assumptions of a 9.5 percent return, which were realistic then but are no longer; this factor pumped up earnings by approximately 15 percent at the peak and 20-30 percent from current depressed levels. The third component is Enron-style "earnings management," which various observers have estimated to be 5-10 percent of the peak earnings. (We suspect this percentage will turn out to be conservative.)
If these three sources of earnings overstatement (aggressive pension accounting, failure to expense management stock options, and outright fraud) are removed, the $\$ 54$ peak earnings per share for the S\&P 500 Index in 2000 turn out to be closer to $\$ 36$. This figure implies normalized earnings a notch lower still. If the normalized earnings for the S\&P 500 are in the $\$ 30-\$ 36$ range, as we suspect is the case, then the market at mid-year 2003 was still at a relatively rich 27-32 times normalized earnings. Using Shiller's (2000) valuation model (real S\&P 500 level divided by 10-year average of real reported earnings) confirms this analysis. Shiller's model pegs the current multiple at nearly 30 times normalized earnings in mid-2003.

In principle, several conditions could allow earnings growth to exceed GDP growth. Massive stock buybacks are one. But we have demonstrated that buybacks in the 20th century were far more smoke than fire. Buybacks have been much touted as the basis for sustained earnings growth at unprecedented rates, but they simply do not show up in the data on market capitalization relative to market index price levels. Cross-holdings could also offer an interesting complication. But again, their impact does not show up in the objective shareholder dilution data. We have demonstrated that buybacks and cross-holdings do not yet show any signs of offsetting the historical 2 percent dilution, but the exploration of the possible impact of buybacks and cross-holdings is beyond the scope of this study.

## Conclusion

Expected stock returns would be agreeable if dividend growth, and thus price growth, proceeded at the same rate as, or a higher rate than, aggregate economic growth. Unfortunately, dividends do not
grow at such a rate: When we compared the Dimson et al. 20th century dividend growth series with aggregate GDP growth, we found that even in nations that were not savaged by the century's tragedies, dividends grew 2.3 percent more slowly, on average, than GDP. Similarly, by measuring the gap between the growth of market cap and share prices in the CRSP database, we found that between 1926 and the present, a 2.3 percent net annual dilution has occurred in the outstanding number of shares in the United States.

Two independent analytical methods point to the same conclusion: In stable nations, a roughly 2 percent net annual creation of new shares-the Two Percent Dilution-leads to a separation between long-term economic growth and longterm growth in dividends per share, earnings per share, and share price.

The markets are probably in the eye of a storm and can expect further turmoil as the rest of the storm passes over. If normalized S\&P 500 earnings are $\$ 30-\$ 36$ per share, if payout ratios on those normalized earnings are at the low end of the historical range (implying lower-than-normal future earnings growth), if normal earnings growth is really only about 1 percent a year above inflation, if stock buybacks have been little more than an appealing fairy tale, if the credibility of earnings is at an all-time low, and if demographics suggest Baby Boomer dis-saving in the next 20 years, then we have a problem.

The authors would like to acknowledge the help, suggestions, and encouragement of Cliff Asness, Peter Bernstein, and Max Darnell.

## Notes

1. In calculating "trend growth," we used a loglinear line of best fit to minimize the impact of distortions from an unusually high or low starting or ending date. The loss years of 1932 and 1933 were excluded because of loglinear calculation.
2. The Dimson et al. book is a masterwork. If you do not have a copy, you should.
3. We assumed the dilution factor to be zero in those two months. If a massive stock buyback or a massive new IPO occurred during one of these two months, we may have missed it. But net buybacks or net new share issuance during months in which the "index" saw a major reconstitution would be difficult to measure.

## References

Dimson, Elroy, Paul Marsh, and Mike Staunton. 2002. The Triumph of the Optimists. Princeton, NJ: Princeton University Press.
Maddison, Angus. 1995. Monitoring the World Economy, 1820 1992. Washington, DC: OECD.
—_. 2001. The World Economy: A Millennial Perspective. Washington, DC: OECD.
Shiller, Robert J. 2000. Irrational Exuberance. Princeton, NJ: Princeton University Press.

# Economic Growth and Equity Investing 

Bradford Cornell


#### Abstract

The performance of equity investments is inextricably linked to economic growth. Nonetheless, few studies on investing have explicitly taken research on economic growth into account. This study bridges that gap by examining the implications for equity investing of both theoretical models and empirical results from growth theory. The study concludes that over the long run, investors should anticipate real returns on common stock to average no more than about 4 percent.


The performance of equity investments is inextricably linked to economic growth. Earnings, the source of value for equity investments, are themselves driven by economic activity. Unless corporate profits rise as a percentage of GDP, which cannot continue indefinitely, earnings growth is constrained by GDP growth. This dynamic means that the same factors that determine the rate of economic growth also place bounds on earnings growth and, thereby, the performance of equity investments. Despite these well-known facts, few studies on equity investing have explicitly taken the literature on economic growth into account. This observation is not meant to imply that research connecting economic growth with equity returns is sparse. Numerous contributions in that area include several provocative pieces by Arnott and Bernstein (2002), Arnott and Asness (2003), and Bernstein and Arnott (2003). Nonetheless, rarely has this research been expressly tied to the literature on the theory of economic growth. By bridging that gap, further insight can be gained into the relationship between economic growth and equity returns and forecasts regarding future returns can be placed on a more solid foundation.

## Economic Growth: Theory and Data

The focus of economic growth theory is explaining expansion in the standard of living as measured by real per capita GDP. In the neoclassical model of economic growth, originally developed by Solow (1956), per capita GDP growth over the long run is entirely attributable to exogenous technological innovation. ${ }^{1}$ This conclusion may surprise those not steeped in growth theory, given the intuitive

[^28]thinking that output per capita can always be increased by simply adding more capital. Although adding capital does increase output per capita, it does so at a declining rate. Consequently, rational producers stop adding capital when the marginal product of capital drops to its marginal cost. When the economy reaches that point, it is said to be in a steady state. Once the economy reaches the steady state growth path, the ratio of capital to labor ( $\mathrm{C} / \mathrm{L}$ ) remains constant and per capita GDP growth ceases unless the production function changes so as to increase the marginal product of capital.

The source of change in the production function is technological innovation. By increasing the marginal product of capital, technological progress breaks the deadlock imposed by diminishing returns and makes further growth in per capita output profitable. So long as the technological innovation continues, so too does the growth in per capita GDP.

This conclusion is not limited to such early models as Solow's, in which the rate of technological change is exogenous. Following Romer (1990), a variety of growth models have been developed in which the amount of investment in R\&D-and thus the rate of technological progress-is endogenous. Even in these more sophisticated models, however, the declining marginal product of capital ensures that long-run per capita growth is bounded by the rate of technological progress. The word "bounded" is important because the ability of a society to exploit modern technology effectively is not a foregone conclusion. For example, from 1960 to 2005, all the countries of sub-Saharan Africa, with the exception of South Africa, experienced little or no growth. This failure of certain poor countries to grow is one of the fundamental mysteries of economics, but it is not a relevant consideration here. ${ }^{2}$ Virtually the entire global stock
market capitalization is concentrated in a relatively few highly developed countries. For those countries, the impediments to effective adoption of technology have proved to be minor, at least to date.

Before turning to the data on economic growth, I need to address one remaining issue. The conclusion that growth is attributable exclusively to technological innovation is based on the assumption that the economy has reached the steady state. If the capital stock is below the steady state-and thus the marginal product of capital exceeds its marginal cost-room still exists for the deepening of capital. In that situation, a country's growth rate can exceed the steady state growth rate because it is spurred by capital deepening, as well as by technological innovation. As C/L rises toward its steady state value, the growth rate converges to the steady state level that is attributable to technological change.

The capital stock of a country may be below its steady state level for a variety of reasons. An obvious example is warfare. Another is the opening of a previously closed society. Whatever the reason, growth theory predicts that a country with a C/L below the steady state level will grow more rapidly during a period of capital deepening. Growth theorists refer to this "catch-up" as convergence.

Convergence is important to bear in mind when analyzing historical growth rates with the goal of forecasting future growth. If the historical sample
includes growth rates of countries that are in the process of converging to a steady state, the historical growth rates will exceed the future rates that will apply once the steady state has been achieved.

Convergence also helps explain why long-run growth rates for a particular country are remarkably constant. To illustrate, Figure 1 plots the log of real per capita GDP in the United States from 1802 through 2008. The long-run average growth rate of 1.8 percent is also shown. Over this period, even the largest downturns (associated with the U.S. Civil War and the Great Depression) appear only as temporary dips in a remarkably smooth progression. That smooth progression is attributable in part to the fact that accelerations in economic growth, associated with capital accumulation, followed the dips, which were tied to a drop in the capital stock below its steady state level.

With that background, Table 1 presents Barro and Ursúa's (2008) update of Maddison's (2003) compilation of information on world economic growth from 1923 to 2006. The starting point in Table 1 is 1923, the first year for which Barro and Ursúa had data for all the countries in their sample. Extending the sample backward for those countries with longer time series available does not affect the essential nature of the findings. Table 1 also reports growth rates for a shorter sample period (beginning in 1960) to take into account the possibility of nonstationarity in the data.

Figure 1. Logarithm of Real per Capita GDP, 1802-2008


Table 1. Real Growth Rates in per Capita GDP, 1923-2006

| Country | $1923-2006$ | $1960-2006$ |
| :--- | :--- | :--- |
| A. Mature Economies |  |  |
| Australia | $1.85 \%$ | $2.16 \%$ |
| Austria | 2.53 | 2.76 |
| Belgium | 2.11 | 2.62 |
| Canada | 2.22 | 2.27 |
| Denmark | 1.97 | 2.11 |
| France | 2.28 | 2.51 |
| Germany | 2.41 | 2.23 |
| Italy | 2.57 | 2.98 |
| Japan | 3.11 | 3.86 |
| Netherlands | 2.01 | 2.35 |
| Spain | 2.30 | 3.42 |
| Sweden | 2.50 | 2.25 |
| Switzerland | 1.63 | 1.51 |
| United Kingdom | 1.95 | 2.15 |
| United States | 1.42 | 1.14 |
| $\quad$ Average | $2.19 \%$ | $2.42 \%$ |

B. Developing and More Recently Developed Economies

| Argentina | $1.10 \%$ | $1.16 \%$ |
| :--- | :--- | :--- |
| Brazil | 2.68 | 2.34 |
| Chile | 1.95 | 2.47 |
| Colombia | 2.18 | 2.24 |
| Egypt | 1.45 | 3.09 |
| Finland | 2.91 | 2.92 |
| Greece | 2.77 | 3.23 |
| Iceland | 3.24 | 2.87 |
| India | 1.74 | 2.88 |
| Indonesia | 1.81 | 3.08 |
| S. Korea | 3.55 | 5.72 |
| Malaysia | 1.91 | 2.14 |
| Mexico | 2.70 | 4.16 |
| New Zealand | 1.51 | 1.36 |
| Norway | 2.86 | 3.01 |
| Peru | 1.44 | 0.97 |
| Philippines | 1.32 | 1.46 |
| Portugal | 2.75 | 3.43 |
| S. Africa | 1.53 | 1.01 |
| Singapore | 3.33 | 5.72 |
| Sri Lanka | 1.93 | 3.06 |
| Taiwan | 3.78 | 6.24 |
| Turkey | 2.75 | 2.40 |
| Uruguay | 2.19 | 2.24 |
| Venezuela | 2.54 | 0.45 |
| Average | $2.79 \%$ |  |
| Source: Bar |  |  |

Source: Barro and Ursúa (2008).

The results are reported in terms of compound growth rates. The following example illustrates why using compound growth rates is preferable to using averages of annual growth rates. Suppose that the ratio of corporate profits to GDP is station-
ary but not constant. In particular, assume (as the data will later show) that corporate profits are more variable than GDP. In that case, even though the compound growth rates of the two variables must converge in the long run, the arithmetic mean of annual growth rates for corporate profits will exceed that for GDP because of the variance effect. ${ }^{3}$ The higher mean growth rate in earnings is illusory, however, because it fails to take into account the mean reversion in earnings growth that must occur for the ratio to be stationary.

The results reported in Table 1 are divided into two groups. The first group comprises mature economies that were already developed before World War II. These countries, which account for virtually the entire global stock market capitalization, are the focus of this study. The second group consists of economies that were developed more recently or are still considered developing. Results for the second group are presented for completeness and to provide perspective on the impact of convergence.

Consistent with the hypothesis that a common rate of technological advance is driving growth in all the developed countries, the results for the first group are remarkably homogeneous. Virtually all the growth rates for the full sample are close to the average of 2.19 percent. The exceptions are the United States, on the low end, and Japan, on the high end. The former's rate of 1.42 percent reflects the fact that the United States was the closest to steady state growth in 1923, after emerging from World War I relatively unscathed. The higher growth rate for Japan reflects convergence. At the start of the sample period, Japan was a relatively undeveloped country whose capital stock was below the steady state level. Convergence is also evident in the shorter sample period, beginning in 1960. The European countries and Japan, whose capital stocks were damaged in World War II, grew more rapidly than the United States, Switzerland, and Australia, all of which avoided war-related domestic destruction.

The results for the second group are more heterogeneous, reflecting the fact that growth in some countries (e.g., Peru and Venezuela) has stalled for reasons not fully understood whereas others (e.g., South Korea and Taiwan) have experienced rapid convergence. Despite the heterogeneity, however, the average growth rates of 2.32 percent for the sample period beginning in 1923 and 2.79 percent for the sample period beginning in 1960 are close to the averages for the first group of countries.

The averages reported in Table 1 are simple averages. If the growth rates for the first group of countries are weighted by market capitalization,
the average falls to about 2 percent in both periods because of the predominant role of the United States. Giving the United States a higher weight is reasonable not only because of its large market capitalization but also because its economy is closest to steady state growth. Given the long period of time since World War II, to assume that all the countries in the first group will eventually converge to steady state growth is reasonable. Therefore, they are more likely to grow at rates comparable to the U.S. historical rate than at their own historical rates. This likelihood suggests that 2 percent real per capita growth, which exceeds the recent U.S. growth rate by 0.5 percent, is the most that investors can reasonably expect in the long run. Furthermore, although growth could be stalled by a catastrophe, such as another world war, the speed of technological innovation has proved almost impossible to accelerate meaningfully. In the remainder of this article, therefore, I will use 2 percent as the estimate of future per capita GDP growth. This number should be thought of as an achievable, but not necessarily expected, outcome.

In addition to the possibility of a catastrophe are two other reasons why 2 percent may prove to be an optimistic growth forecast. First, national income accounting does not deduct costs associated with pollution and environmental degradation in the calculation of GDP. Although these costs have been a tiny fraction of GDP in the past, concern that they are growing rapidly is widespread. If that concern is justified, properly accounting for these costs will reduce the future growth rate of per capita GDP. Second, whether the historical rate of technological innovation is sustainable is far from clear. Weil (2009, p. 260) noted that the rate of growth of real per capita GDP attributable to technological progress remained largely constant from 1950 to 2005, but over the same period, the number of researchers in the G-20 countries grew from 251,000 to 2.6 million. This finding suggests a declining marginal product of research as making and applying new discoveries become more difficult. If this trend continues, it could lead to falling rates of growth in per capita GDP.

## Population Growth

Business opportunities depend on total economic activity, not per capita output. To see why, consider a hypothetical example of an economy for which technological innovation-and thus productivity growth-is zero but which is experiencing 5 percent population growth. Companies that provide goods and services in this economy will, on average, experience 5 percent growth in real revenues.

Assuming that their margins remain constant, this rate translates into 5 percent growth in real earnings. Of course, in a dynamic economy, existing companies could lose business to start-ups, which could result in dilution for existing investors (which is a separate issue addressed later in the article). For companies in the aggregate, real earnings should be tied to real GDP, as data presented later in the article reveal to be the case.

Converting per capita growth to aggregate growth requires an estimate of population growth. Fortunately, population growth rates change even more slowly and are more predictable than growth rates of real per capita GDP.

Data on population growth for the sample countries are reported in Table 2. The first column presents historical growth rates from 2000 to 2007 taken from the U.S. Central Intelligence Agency's 2008 World Fact Book. The second column presents United Nations (2007) forecasts of population growth rates from 2005 to 2010. That the two columns are very similar reflects the slowly changing nature of population growth.

The data in Table 2 are consistent with the widely documented fact that population growth is negatively correlated with per capita GDP. ${ }^{4}$ The average population growth rate for the first group of countries is less than half that for the second group. Even for the second group, however, both the average historical growth rate and the average projected growth rate are less than 1 percent. Presumably, as per capita GDP continues to rise, these growth rates will continue to decline.

On the basis of the data presented in Table 2, population growth can be expected to add no more than 1 percent to the growth rate in per capita GDP. In fact, an assumption of a zero long-run future growth rate for the developed countries would not be unreasonable. Given real per capita growth of 2 percent, this assumption implies that investors cannot reasonably expect long-run future growth in real GDP to exceed 3 percent.

## Earnings and GDP

The fundamental source of value for equity investors is earnings, not GDP. That long-run real GDP growth is reasonably bounded at 3 percent does not necessarily mean that the same is true of earnings, which depends on whether the ratio of earnings to GDP (E/GDP) is stationary. To test that hypothesis requires data on aggregate earnings.

Two primary measures of aggregate earnings are used in the United States. The first measure is derived from the national income and product accounts (NIPAs), produced by the U.S. Department

Table 2. Historical and Projected Population Growth Rates, 2000-2010

|  | Historical |  | Projected |
| :--- | :---: | :---: | :---: |
| Country | $2000-2007$ |  | $2005-2010$ |
| A. Mature Economies |  |  |  |
| Australia | $1.22 \%$ |  |  |
| Austria | 0.06 |  | $1.01 \%$ |
| Belgium | 0.11 | 0.36 |  |
| Canada | 0.83 | 0.24 |  |
| Denmark | 0.30 | 0.90 |  |
| France | 0.57 | 0.90 |  |
| Germany | -0.04 | 0.49 |  |
| Italy | 0.00 | -0.07 |  |
| Japan | -0.14 | 0.13 |  |
| Netherlands | 0.44 | -0.02 |  |
| Spain | 0.10 | 0.21 |  |
| Sweden | 0.16 | 0.77 |  |
| Switzerland | 0.33 | 0.45 |  |
| United Kingdom | 0.28 | 0.38 |  |
| United States | 0.88 | 0.42 |  |
| Average | $0.34 \%$ | 0.97 |  |
|  |  | $0.48 \%$ |  |

B. Developing and More Recently Developed Economies

| Argentina | 1.07\% | 1.00\% |
| :---: | :---: | :---: |
| Brazil | 1.23 | 1.26 |
| Chile | 0.91 | 1.00 |
| Colombia | 1.41 | 1.27 |
| Egypt | 1.68 | 1.76 |
| Finland | 0.11 | 0.29 |
| Greece | 0.15 | 0.21 |
| Iceland | 0.78 | 0.84 |
| India | 1.58 | 1.46 |
| Indonesia | 0.18 | 1.16 |
| S. Korea | 0.27 | 0.33 |
| Malaysia | 1.74 | 1.69 |
| Mexico | 1.14 | 1.12 |
| New Zealand | 0.97 | 0.90 |
| Norway | 0.35 | 0.62 |
| Peru | 1.26 | 1.15 |
| Philippines | 1.99 | 1.72 |
| Portugal | 0.31 | 0.37 |
| S. Africa | 0.83 | 0.55 |
| Singapore | 1.14 | 1.19 |
| Sri Lanka | 0.94 | 0.47 |
| Taiwan | 0.24 | 0.36 |
| Turkey | 1.01 | 1.26 |
| Uruguay | 0.49 | 0.29 |
| Venezuela | 1.50 | 1.67 |
| Average | 0.94\% | 0.96\% |

Sources: Central Intelligence Agency (2008) and the United Nations (2007).
of Commerce's Bureau of Economic Analysis. The NIPAs contain an estimate of aggregate corporate profits that is based on data collected from corporate income tax returns. The second measure of aggregate earnings is derived by Standard \& Poor's from data collected from corporate financial reports. Because the two measures are not identical, distinguishing what is included in each measure before using the data is important.

The NIPA profit measure is designed to provide a time series of the income earned from the current production of all U.S. corporations. The sample is not limited to publicly traded companies. The tax rules on which the NIPAs are based are designed to expedite the timely and uniform completion of corporate tax returns. For that reason, all corporations use a highly uniform set of rules for tax accounting.

Because the NIPAs are designed to measure economic activity connected with current production, the NIPA definition of corporate profits includes only receipts arising from current production less associated expenses. The NIPA definition, therefore, excludes transactions that reflect the acquisition or sale of assets or liabilities. Dividend receipts from domestic corporations are excluded to avoid a double counting of profits. For the same reason, bad-debt expenses and capital losses are also excluded.

The Standard \& Poor's estimate of aggregate earnings is derived from reported financial statements. Rather than being based on a unified set of tax rules, financial accounting is based on GAAP, which is designed to allow management to tailor financial statements so as to reveal information that is useful to a particular company. Furthermore, financial accounting provides for depreciation and amortization schedules that allow companies to attempt to match expenses with the associated stream of income.

The aggregate earnings data available from Standard \& Poor's are for the companies in the S\&P 500 Index. Each year's data consist of the aggregate GAAP after-tax earnings for the 500 companies in the S\&P 500 for that year. Thus, the sample of companies in the aggregate is constantly changing as the index is updated. Because the S\&P 500 earnings reflect a shifting sample of corporations, the series of reported earnings can be discontinuous over time. Fortunately, given the size of the index, these discontinuities are small and have little impact on estimated earnings growth.

The differences between financial and tax accounting create two dissimilarities between the measures of earnings for the same company. ${ }^{5}$ First,
intertemporal differences arise because of the timing of revenue, and expense recognition often differs between the two systems. The best example is depreciation because tax rules generally allow for more rapid depreciation than companies choose to report under GAAP. Second, permanent differences exist because the revenues and expenses recognized under the two systems are not the same. Although important in the short run, these differences tend to cancel out over long horizons, and thus, the long-run growth rates in the two measures are similar. For example, the average growth rate in NIPA real corporate profits from 1947 to 2008 was 3.23 percent, as compared with a growth rate of 3.17 percent in S\&P 500 real aggregate earnings.

As an aid in examining the behavior of E/GDP, Figure 2 plots after-tax corporate profits from the NIPAs as a fraction of GDP for 1947-2008. The figure reveals no overall trend. The fraction is approximately the same at the end as at the beginning, and thus, the growth rate of corporate profits is almost identical to that of GDP. The same is largely true of S\&P 500 aggregate earnings as a fraction of GDP, which is plotted in Figure 3 (normalized to start at 8.23 percent to facilitate comparison with Figure 2). The fraction for the S\&P 500 earnings is smaller because the S\&P 500 measure is less comprehensive than the NIPA measure. Unlike the NIPA data, the S\&P 500 ratio exhibits a slight downward trend, reflecting the fact that as the economy has grown, the S\&P 500 companies have
become a progressively smaller fraction of total earnings. Therefore, the data are generally consistent with the hypothesis that over the long run, aggregate earnings are a stationary fraction of GDP. Certainly, no evidence exists of a persistent increase in the ratio, no matter which measure of earnings is chosen. This observation implies that the long-run growth rates of GDP place a limit on the long-run growth rates of earnings.

Although the data largely support the hypothesis that E/GDP is stationary, it is far from constant. Figure 2 shows that corporate profits vary between 3 percent and 11 percent of GDP. The variability of the ratio for S\&P 500 earnings is even greater. This variability suggests that when earnings are low relative to GDP, they grow more quickly; the reverse is true when earnings are relatively high. This mean reversion in the growth rate of earnings maintains the stationarity of E/GDP.

Note that in an efficient market, the mean reversion in earnings growth would have no impact on stock returns because it would be impounded into current prices. Campbell and Shiller (1998), however, provided evidence that long-run average earnings are, in fact, predictive of future stock returns. Specifically, when the ratio of price to average earnings over the previous 10 years is high, future stock returns tend to be low; the reverse is true when the ratio is low. This finding suggests that the market does not fully account for the meanreverting nature of long-run earnings growth.

Figure 2. Corporate Profits as a Percentage of GDP, 1947-2008


Figure 3. S\&P 500 Earnings as a Percentage of GDP, 1947-2008


That the ratio of aggregate earnings to GDP is stationary implies that investors can expect aggregate real earnings growth to match, but not exceed, real GDP growth in the long run. Unfortunately, the same is not true of the earnings to which current investors have a claim. Two reasons explain this discrepancy. First, an investor's pro rata portion of a company's earnings will be affected by the company's share issuances and repurchases. If this dilution (or accretion) is ongoing, growth in aggregate earnings and earnings per share will diverge. Second and more important, current investors do not participate in the earnings of new businesses unless they dilute their current holdings to purchase shares in start-ups. Therefore, start-ups drive a wedge between the growth in aggregate earnings and the growth in the earnings to which current investors have a claim.

To illustrate the second effect, consider a simple example in which all companies in the economy are identical and earn $\$ 10$ a share per period. Furthermore, assume that each company has a market value of $\$ 100$ a share and has 1,000 shares outstanding. All earnings are paid out, so the values of the companies remain constant. Finally, assume that at the outset only two companies are in the economy, so aggregate earnings are $\$ 20,000$. A current investor who holds 1 percent of each company has a pro rata share of aggregate earnings of $\$ 200$. Now assume that the economy grows and a third company is started. As a result, aggregate earnings rise to $\$ 30,000$, but the current investor does not participate in that growth and thus still holds 1 percent of the first two companies with rights to earnings of $\$ 200$. If the current
investor wanted to add the third company to the portfolio without investing new cash, the investor would have to dilute the portfolio's holdings in the first two companies. After the dilution, the investor would hold 0.67 percent of each of the three companies and would thus still have rights to earnings of $\$ 200$. Therefore, the growth in earnings experienced by the current investor does not match the growth in aggregate earnings.

Bernstein and Arnott (2003) suggested an ingenious procedure for estimating the combined impact of both effects on the rate of growth of earnings to which current investors have a claim. They noted that total dilution on a marketwide basis can be measured by the ratio of the proportionate increase in market capitalization to the value-weighted proportionate increase in stock price. More precisely, net dilution for each period is given by the equation

$$
\begin{equation*}
\text { Net dilution }=\frac{1+c}{1+k}-1 \text {, } \tag{1}
\end{equation*}
$$

where $c$ is the percentage capitalization increase and $k$ is the percentage increase in the valueweighted price index. Note that this dilution measure holds exactly only for the aggregate market portfolio. For narrower indices, the measure can be artificially affected if securities are added to or deleted from the index.

To account for the impact of dilution, the Bernstein-Arnott measure was estimated by using monthly data for the entire universe of CRSP stocks from 1926 to 2008. Using CRSP data for this purpose presents one problem. The CRSP universe was expanded twice during the sample period: in

July 1962, when Amex stocks were added, and in July 1972, when NASDAQ stocks were added. Both these additions caused a significant increase in market capitalization unaccompanied by a corresponding increase in the value-weighted price. To eliminate the impact of these artificial discontinuities, I set the estimate of net dilution at zero for both July 1962 and July 1972.

Figure 4 plots the compounded estimate of net dilution from 1926 to 2008. It rises continuously except for downturns in the early 1990s and in 2006-2008. The average rate of dilution over the entire period is 2 percent. The primary source of dilution is the net creation of new shares as new companies capitalize their businesses with equity. The impact of start-ups is not surprising in light of the fact that more than half of U.S. economic growth comes from new enterprises, not from the growth of established businesses. Given the continuing importance of start-ups, the rate of dilution is highly unlikely to subside unless the rate of innovation slows. If the rate of innovation slows, however, GDP growth will also decline. Consequently, to conclude that the rate of growth of earnings, net of dilution, will remain largely constant is reasonable. Therefore, to estimate the growth rate of earnings to which current investors have a claim, approximately 2 percent must be deducted from the growth rate of aggregate earnings.

Putting the pieces together, we can see that growth theory predicts that current investors should count on long-run growth in real earnings of no more than 1 percent. This rate equals real growth of 3 percent in aggregate earnings, adjusted downward by 2 percent to account for dilution.

Arnott and Bernstein (2002) and Bernstein and Arnott (2003, p. 49) observed that "earnings and dividends grow at a pace very similar to that of per capita GDP." This observation correctly summarizes U.S. economic history, but it may not be true for other countries and it may not hold for the United States in the future. In terms of my analysis, the reason that earnings and dividends mirror per capita GDP is that population growth and dilution have both been about 2 percent between 1870 and 2008. Consequently, these two terms cancel each other out when we move from estimated growth in real per capita GDP to estimated growth in real earnings per share. But there is no theoretical reason why this cancellation should necessarily occur. For instance, population growth in Western Europe has fallen essentially to zero. If the United States were to follow suit but dilution were to continue at about 2 percent a year, growth in real earnings would be 2 percentage points less than growth in per capita GDP. In short, the Arnott-Bernstein observation is a shortcut that has historically held in the United States but is not a necessary condition. Therefore, a more complete analysis that takes into

Figure 4. The Impact of Dilution on Investor Earnings, 1926-2008

account both population growth and dilution is generally preferable. I do not present that analysis here because of limitations on dilution data for countries other than the United States.

## Implications of Economic Growth Theory for Expected Stock Returns

The story thus far is that economic growth places a limit on the long-run growth of real earnings per share available to investors. On the basis of the data I have analyzed here, that limit is what many investors might consider a relatively anemic 1 percent. The next step is to explore the implications of that limitation for future returns on common stocks.

By definition, the rate of return on stock in period $t$ is given by

$$
\begin{equation*}
R_{t}=\frac{D_{t}}{P_{t-1}}+G P_{t} \tag{2}
\end{equation*}
$$

where $D_{t}$ is the dividend for year $t, P_{t-1}$ is the price at the end of year $t-1$, and $G P_{t}=\left(P_{t}-P_{t-1}\right) / P_{t-1}$. Following Fama and French (2002), we can write Equation 2 in terms of long-run average values, denoted by A() , as

$$
\begin{equation*}
A\left(R_{t}\right)=A\left(\frac{D_{t}}{P_{t-1}}\right)+A\left(G P_{t}\right) . \tag{3}
\end{equation*}
$$

Equation 3 states that the long-run average return equals the average dividend yield plus the average capital gain.

Equation 3 holds ex ante as well as ex post. It implies that the long-run future average return equals the future average dividend yield plus the future average capital gain. Assuming that the earnings-to-price ratio is stationary, the long-run average earnings growth rate, $A\left(G E_{t}\right)$, can be substituted for the average capital gain rate, giving

$$
\begin{equation*}
A\left(R_{t}\right)=A\left(\frac{D_{t}}{P_{t-1}}\right)+A\left(G E_{t}\right) \tag{4}
\end{equation*}
$$

My preceding analysis implies that $A\left(G E_{t}\right)$ in Equation 4 should be no more than about 1 percent in the future. In addition, as of December 2008, the current dividend yield was 3.1 percent and the previous 50 -year average was 3.3 percent. Because the two are nearly equal, substituting either into Equation 4 as a proxy for the future average yield suggests that investors should not expect long-run real returns on common stocks to go much beyond 4 percent. Note that this calculation does not need to be adjusted for repurchases because the impact of repurchases is already accounted for in the dilution calculation. An adjustment is required only if future repurchases are expected to exceed their past average.

Equation 4 can also be used to approximate the equity risk premium. Because the real return on short-term government securities has averaged about 1 percent over the last 80 years, Equation 4 implies that the equity risk premium measured with respect to short-term government securities is approximately equal to the expected average dividend yield. Using either the current yield or the past average yield translates this number into a long-run average equity risk premium of just more than 3 percent. If the premium is measured with respect to longer-maturity government securities with greater expected real returns, the equity premium is commensurately less. This result is markedly less than the average historical risk premium measured over the 1926-2008 period that is commonly referenced. It is consistent, however, with a long-running body of empirical work that shows the ex ante risk premium to be significantly smaller than the historical average. ${ }^{6}$

Thus far, all the results have been stated in terms of compound growth rates. For many purposes, however, the object of interest is the annual expected return. For example, discounted-cashflow valuations typically require annual estimates of the discount rate. To convert compound growth rates, which are geometric averages, into arithmetic averages requires taking the variance effect into account. This step can be well approximated by adding one-half of the annual variance of returns to the compound growth rate.

Because earnings are volatile, the variance effect adds about 1 percent to the compound growth rates. This result means that growth theory predicts that future annual real returns on common stocks should average no more than about 5 percent and that the annual equity risk premium for shortterm government securities is about 4 percent.

Using annual data, we can tie the growth theory analysis to the long-run performance of company investments. If a company retains a fraction, $b$, of its earnings and invests those funds at a real rate of return, $k$, then basic finance theory teaches that the earnings per share will grow at the rate $(b)(k)$. Growth theory predicts that the annual longrun average growth in real earnings per share is about 2 percent, taking into account both dilution and the variance effect. From 1960 to 2008, companies in the S\&P 500 retained, on average, 54 percent of their earnings. Solving for $k$, this retention ratio implies a real return on corporate investments of about 4 percent.

One possible adjustment might be made to the foregoing results. Recall that the dilution calculation was based on the assumption of a stable repurchase rate throughout the sample period. In fact,
repurchases accelerated following the passage, in 1982, of U.S. SEC Rule 10b-18, which greatly reduced the legal risk associated with repurchases. More specifically, a pronounced trend toward repurchases as the preferred form of marginal payout to shareholders took place. Brav, Graham, Harvey, and Michaely (2005) reported that following the SEC ruling, managers began behaving as if a significant capital market penalty were associated with cutting dividends but not with reducing repurchases. Accordingly, dividends are set conservatively and repurchases are used to absorb variations in total payout. To the extent that this reliance on repurchases is expected to continue, the estimated 2 percent dilution effect might be too large and growth rates would have to be adjusted upward. Most of the 2 percent dilution, however, is associated not with the actions of existing companies but with start-ups that finance their businesses with new equity. Therefore, the adjustment in the overall rate of future dilution should not be large.

## International Considerations

Thus far, I have limited my analysis to the United States. This restriction is an obvious shortcoming because most major corporations are becoming increasingly global. Although a detailed examination of international data is beyond the scope of this article, several general conclusions can be drawn. First, the data presented in Table 2 suggest that real per capita GDP growth rates for the other developed countries should be comparable to the U.S. growth rate in the future. Second, for the other developed countries, population growth rates are forecasted to be lower. As a result, the implied limitations on earnings growth remain largely unchanged and are perhaps even lower when other developed countries are included in the sample. Third, with respect to the developing countries-particularly India and China, which are the most important by virtue of their size-convergence predicts that they will experience higher growth rates in real per capita GDP
than the United States. In addition, most developing countries are forecasted to have comparable or higher population growth rates than the United States. These forecasts suggest that companies doing business in the developing world will experience higher rates of earnings growth than they achieve in the developed world. Nonetheless, as those countries develop, both real GDP and population growth rates should decline. Furthermore, the fraction of total earnings attributable to business in the developing world is relatively small for most companies. Therefore, if a complete analysis were done on a global basis, the earnings bounds derived from U.S. data and the related predictions regarding stock returns would be unlikely to be markedly affected.

## Conclusion

The long-run performance of equity investments is fundamentally linked to growth in earnings. Earnings growth, in turn, depends on growth in real GDP. This article demonstrates that both theoretical research and empirical research in development economics suggest relatively strict limits on future growth. In particular, real GDP growth in excess of 3 percent in the long run is highly unlikely in the developed world. In light of ongoing dilution in earnings per share, this finding implies that investors should anticipate real returns on U.S. common stocks to average no more than about 4-5 percent in real terms. Although more work needs to be done before equally definitive predictions can be made with respect to international equities, the basic outlook appears to be quite similar.

I thank Rob Arnott, Eugene Fama, Kenneth French, John Haut, John Hirshleifer, Jason Hsu, and Brian Palmer for helpful comments on earlier versions of this article. Data were graciously provided by Robert Barro and by Research Associates, LLC.

This article qualifies for 1 CE credit.

## Notes

1. For details on the Solow model and more recent elaborations, see Barro and Sala-i-Martin (2004).
2. Hall and Jones (1999) described the problem in detail and offered an intriguing solution.
3. As a first-order approximation, the annual arithmetic mean equals the compound growth rate plus one-half the standard deviation of the annual growth rates.
4. See, for example, Weil (2009, ch. 4).
5. For further details on the relationship between reported earnings and NIPA profits, see Mead, Moulton, and Petrick (2004).
6. Contributions in this area include those of Rozeff (1984); Ross, Brown, and Goetzmann (1995); Claus and Thomas (2001); Fama and French (2002); and Cornell and Moroz (forthcoming).

## References

Arnott, Robert D., and Clifford S. Asness. 2003. "Surprise! Higher Dividends = Higher Earnings Growth." Financial Analysts Journal, vol. 59, no. 1 (January/February):70-87.
Arnott, Robert D., and Peter L. Bernstein. 2002. "What Risk Premium Is 'Normal'?" Financial Analysts Journal, vol. 58, no. 2 (March/April):64-85.
Barro, Robert J., and Xavier Sala-i-Martin. 2004. Economic Growth. Cambridge, MA: MIT Press.
Barro, Robert J., and José F. Ursúa. 2008. "Macroeconomic Crises since 1870." NBER Working Paper 13940 (April).
Bernstein, William J., and Robert D. Arnott. 2003. "Earnings Growth: The Two Percent Dilution." Financial Analysts Journal, vol. 59, no. 5 (September/October):47-55.
Brav, Alon, John R. Graham, Campbell R. Harvey, and Roni Michaely. 2005. "Payout Policy in the 21st Century." Journal of Financial Economics, vol. 77, no. 3 (September):483-527.
Campbell, John Y., and Robert J. Shiller. 1998. "Valuation Ratios and the Long-Run Stock Market Outlook." Journal of Portfolio Management, vol. 24, no. 2 (Winter):11-26.
Central Intelligence Agency. 2008. The 2008 World Fact Book. Washington, DC: Central Intelligence Agency.
Claus, James, and Jacob K. Thomas. 2001. "Equity Premia as Low as Three Percent? Evidence from Analysts' Earnings Forecasts for Domestic and International Stock Markets." Journal of Finance, vol. 56, no. 5 (October):1629-1666.
Cornell, Bradford, and Max Moroz. Forthcoming. "The Equity Premium Revisited." Journal of Portfolio Management.

Fama, Eugene F., and Kenneth R. French. 2002. "The Equity Premium." Journal of Finance, vol. 57, no. 2 (April):637-659.
Hall, Robert E., and Charles I. Jones. 1999. "Why Do Some Countries Produce So Much More Output per Worker Than Others?" Quarterly Journal of Economics, vol. 114, no. 1 (February):83-116.
Maddison, Angus. 2003. The World Economy: Historical Statistics. Paris: OECD.
Mead, Charles Ian, Brent R. Moulton, and Kenneth Petrick. 2004. "NIPA Corporate Profits and Reported Earnings: A Comparison and Measurement Issues." Washington, DC: Bureau of Economic Analysis.
Romer, Paul M. 1990. "Endogenous Technical Change." Journal of Political Economy, vol. 98, no. S5 (October):S71-S102.
Ross, Stephen A., Stephen J. Brown, and William N. Goetzmann. 1995. "Survival." Journal of Finance, vol. 50, no. 3 (July):853-873.

Rozeff, Michael S. 1984. "Dividend Yields Are Equity Risk
Premiums." Journal of Portfolio Management, vol. 11, no. 1 (Fall):68-75.
Solow, Robert M. 1956. "A Contribution to the Theory of Economic Growth." Quarterly Journal of Economics, vol. 70, no. 1 (February):65-94.
United Nations, Department of Economic and Social Affairs. 2007. "World Population Prospects: The 2006 Revision, Highlights." United Nations Working Paper No. ESA/P/WP. 202 (www.un.org/esa/population/publications/wpp2006/ WPP2006_Highlights_rev.pdf).
Weil, David N. 2009. Economic Growth. 2nd ed. Boston: Addison Wesley.

## [ADVERTISEMENT]

# ON THE LINKAGE BETWEEN CORPORATE SAVING AND EARNINGS GROWTH 

Stephen G. Buell*, Carl Beidleman**, and R. Charles Moyer***

Financial theory asserts that if the proportion of externally financed investment remains constant over time, there is a direct relationship between the fraction that a firm retains from its profits and the rate of earnings growth that it experiences in subsequent periods. If retained profits are invested at a rate in excess of their cost, they should produce higher future earnings and dividends and eventually higher equity prices (i.e., capital gains), and thereby work to the advantage of a common stock investor. This basic conclusion was challenged by I.M.D. Little in 1962 and later by Baumol, Heim, Malkiel, and Quandt (BHMQ) in 1970 and others [1, 2, 3, 4, 5]. Both the Little and the BHMQ studies presented evidence that suggested that the relationship between earnings retention and subsequent growth was very weak or non-existent.

A close examination of these studies shows them to suffer from a sufficient number of econometric and specification problems to cast doubt on the validity of their results. For example, Little has failed to consider debt and common stock financing, thereby implicity attributing all changes in earnings to the ploughing back of profits. He also implicitly assumed that the profitability of the stock of exisiting assets remained constant, an untenable assumption in light of the decline in corporate profits that occured during the 1950's, the period surveyed by Little. BHMQ also failed to account for changes in the profitability of existing assets. In addition, they employed a very heterogeneous sample.

The purpose of this paper is to evaluate the strength of the ploughback-growth linkage using a model that is free of some of the biases of the earlier studies.

## I. Theoretical Model

The basis for the theoretical model used in this paper is the model developed by $B H M Q$. The primary differences between this model and the BHMQ models are: (1) the inclusion of a variable to account for changes in the profitability of existing assets; (2) the use of more homogeneous samples and; (3) a redefinition of the risk variable.

The basic model tested suggests that the change in earnings, $\Delta E$, during any period is a function of: (1) the rate of return, $r_{P}$, earned on funds retained in the firm, $P$; the rate of return, $r_{S}$, earned on funds obtained from the sale of new common stock, $S$; the rate of return, $r_{N}$, earned on funds obtained from the sale of new debt, $N$; and the rate of return, $r_{A}$, earned on the firm's existing assets, $A$. In addition a risk variable, $R$, is also included in the model to control for the fact that firms that tend to invest in high risk projects are likely, on average, to generate higher returns than firms that concentrate on lower risk ventures. This relationship is symbolically illustrated in Equation (1):

$$
\begin{equation*}
\Delta E=f\left(r_{P} P, r_{S} S, r_{N} N, r_{A} A, R\right) \tag{1}
\end{equation*}
$$

The linkage between $\Delta E$ and $P$ is the issue of primary interest. However, the effect of new debt, external equity, changes in the profitability of the existing assets, and risk must be

[^29]included in order to avoid attributing all growth in earnings to the investment of retained earnings.

Using the basic relationship in Equation (1), the model which is tested was developed as follows. Consider a firm having total assets at the start of period $t$ of $A_{t}$, on which it earns a return of $r_{A}^{*}$. During period one the firm has earnings of $E_{1}=r_{A}^{*} A_{1}$, pays out dividends of $D_{1}$, retains ( $E_{1}-D_{1}$ ), and obtains funds from selling new common stock, $S_{1}$, and new debt, $N_{1}$.

If it is assumed that the rate of return on existing assets changes to $r_{A}^{\prime}$ and that the newly acquired funds are invested to earn respective returns of $r_{P}, r_{S}$, and $r_{N}$, then total earnings during period two, $E_{2}$, are:

$$
\begin{equation*}
E_{2}=r_{A}^{\prime} A_{1}+r_{P}\left(E_{1}-D_{1}\right)+r_{S} S_{1}+r_{N} N_{1} \tag{2}
\end{equation*}
$$

The change in earnings from period one to period two is:

$$
\begin{equation*}
E_{2}-E_{1}=\Delta E_{2}=\left(r_{A}^{\prime}-r_{A}^{*}\right) A_{1}+r_{P}\left(E_{1}-D_{1}\right)+r_{S} S_{1}+r_{N} N_{1} \tag{3}
\end{equation*}
$$

The firm's earnings in period three are:

$$
\begin{gather*}
E_{3}=r_{A}^{\prime \prime} A_{1}+r_{P}\left(E_{2}-D_{2}\right)+r_{P}\left(E_{1}-D_{1}\right)+r_{S} S_{2}+r_{S} S_{1}  \tag{4}\\
+ \\
+r_{N} N_{2}+r_{N} N_{1}
\end{gather*}
$$

where $r_{A}{ }^{\prime \prime}$ is the rate of return being earned during period three on the stock of assets that existed at time 1 . This derivation assumes that $r_{P}, r_{S}$, and $r_{N}$ remain constant. This assumption is made in order to simplify the conceptual development of the model but does not influence the empirical testing of the model. It is also assumed that the return on reinvested depreciation is reflected in the return on the existing asset base. The change in earnings from period one to period three is:

$$
\begin{align*}
\Delta E_{3}=r_{A}^{\prime \prime} A_{1}-r_{A}^{*} A_{1}+ & r_{P}\left(E_{2}-D_{2}\right)+r_{P}\left(E_{1}-D_{1}\right)+r_{S}\left(S_{2}+S_{1}\right) \\
& +r_{N}\left(N_{2}+N_{1}\right) \tag{5}
\end{align*}
$$

Similarly, the change in earnings from period one to period four is:

$$
\begin{align*}
\Delta E_{4}=r_{A}^{\prime \prime \prime} A_{1} & -r^{*} A_{1}+r_{P}\left(E_{3}-D_{3}\right)+r_{P}\left(E_{2}-D_{2}\right)+r_{P}\left(E_{1}-D_{1}\right) \\
& +r_{S}\left(S_{3}+S_{2}+S_{1}\right)+r_{N}\left(N_{3}+N_{2}+N_{1}\right) . \tag{6}
\end{align*}
$$

Adding three increments and letting $E_{t}-D_{t}=P_{t}$, ploughback during period $t$, we obtain:

$$
\Delta E=\Delta E_{4}+\Delta E_{3}+\Delta E_{2}
$$

$$
\begin{align*}
& =\left(r_{A}^{\prime \prime \prime}+r_{A}^{\prime \prime}+r_{A}^{\prime}-3 r_{A}^{*}\right) A_{1}+r_{P}\left(3 P_{1}+2 P_{2}+1 P_{3}\right)  \tag{7}\\
& +r_{S}\left(3 S_{1}+2 S_{2}+1 S_{3}\right)+r_{N}\left(3 N_{1}+2 N_{2}+1 N_{3}\right)
\end{align*}
$$

By substituting $P=3 P_{1}+2 P_{2}+1 P_{3}$,

$$
\begin{gathered}
S=3 S_{1}+2 S_{2}+1 S_{3}, N=3 N_{1}+2 N_{2}+1 N_{3}, \\
\text { and } r_{A}=r_{A}^{\prime \prime \prime}+r_{A}^{\prime \prime}+r_{A}^{\prime}-3 r_{A}^{*},
\end{gathered}
$$

and adding the risk variable, $R$, the general form of the cross sectional model which is tested is obtained:

$$
\begin{equation*}
\Delta E_{i}=a_{o}+a_{1} P_{i}+a_{2} N_{i}+a_{3} S_{i}+a_{4} A_{i}+a_{5} R_{i} \tag{8}
\end{equation*}
$$

where the variables are defined as above for the $i^{\text {th }}$ firm. The coefficients $a_{1}-a_{5}$ represent the influence of retained earnings, new debt, new stock, the existing asset base and risk on the growth in total earnings for the $i^{\text {th }}$ firm. Equation (8) produces estimates of $r_{P}, r_{S}$ and $r_{N}$. This equation can be interpreted as $\Delta E=r_{P}\left(E_{1}-D_{1}\right)$, given the amount of stock and debt financing and the profitability of the stock of existing assets. The partial derivative, $r_{P}$, can be interpreted as measuring the influence of retained earnings financing upon growth in EPS, all other sources of financing and, therefore, the number of shares held constant.

The basic model, as applied incorporates a lag structure similar to that used by $B H M Q$. For example, the explanatory variables $P_{i}, N_{i}$ and $S_{i}$ were measured over a base period of $n$ years and the dependent variable, $\Delta E_{i}$, was measured over a later period of equal length. The reason for this lag relationship is that a number of years may be required before an investment project "comes on stream" and begins contributing to earnings.

For example, assume $n=3$ and the base period is $1960-1962$. Funds invested during this period are assumed to generate earnings during the 1964-1966 earnings period, a lag of four years. The ploughback variable was measured as $P=3 P_{60}+2 P_{61}+P_{62}$ and the debt and new stock variables were measured in an analogous manner. The weighting system follows from the discussion preceding the derivation of equation (8). The dependent variable was measured by $\Delta E=\Delta E_{64}+\Delta E_{65}+\Delta E_{66}$, where $\Delta E_{64}=E_{64}-E_{63}$, $\Delta E_{65}=E_{65}-E_{63}$ and $\Delta E_{66}=E_{66}-E_{63}$. In addition to the four year lag illustrated here, the study incorporated lags between retention and growth of from two to seven years.

## II. Discussion of Variables

A sample of 368 firms, representing all firms on the Compustat industrial tape having complete data available for the sample period, was used to test equation (8). The sample period was 1948-1968. This period was chosen for two reasons. First, this is a time period that is not plagued by high and volatile rates of inflation. Consequently, the accounting data that are generally available and used in this analysis are not significantly distorted by the impact of inflation. Thus, the choice of this period avoids the necessity of having to adjust individual firm earnings and assets figures or of having to make a crude across-the-board adjustment for all firms, using one or more price indexes. The second reason this time period was chosen is that it is roughly coincident with the time period used by $B H M Q$ in their original paper. The coincidence of time periods is desirable because it permits a more direct comparison between our results and those of BHMQ. It is anticipated that the use of data from a more current time period would lead to conclusions similar to those in this paper, if the appropriate inflation adjustments were made. The use of this earlier time period eliminates the need to make these adjustments and still highlights the significance of the ploughback-earnings growth linkage.

A number of alternative definitions of and adjustments to the earnings variable were used in order to offset the impact of accounting smoothing techniques, non-recurring expenses and profits, and changes in depreciation allowance. To minimize the effect of non-recurring disturbances in the data, the earnings variables were smoothed for the initial year only; i.e. $E_{0}=\left(E_{-1}+E_{o}+E_{+1}\right) / 3$, a three-year average centered on the mid-year. Two alternative definitions of earnings were employed:
$E_{1}$ is income available to common stockholders after deducting interest charges, taxes, and preferred stock dividends.
$E_{2}$ is equal to $E_{1}$ plus depreciation allowances. It was hypothesized that this cash flow measure may be more representative of the amount of funds available for dividends or retention.
Two alternative definitions of ploughback were also tested:
$P_{1}$ is equal to $E_{1}$ plus nonrecurring gains (or less nonrecurring losses) minus common stock dividends.
$P_{2}$ is equal to $E_{2}$ minus common dividends. Employing these alternative definitions should insure that nonrecurring disturbances or alternative depreciation policies do not obscure the true relationships.
The alternative definitions of the remaining explanatory variables were:
$N_{1}$ is the increase in the book value of all liabilities (long-term and current) and preferred stock.
$N_{2}$ equals $N_{1}$ less spontaneous sources of liabilities, e.g., accounts payable and accruals.
$S_{1}$ is the increase in the number of common shares outstanding during the year, adjusted for stock dividends and splits, times the arithmetic average of the stock's high and low market prices for the year. (The mean market price was used as an estimate of the amount of capital received by the firm for each newly issued share. This approximation was necessary because of data limitations. This method possibly overstates the amount of capital received by the firm because of the underpricing and underwriting expenses associated with the issuance of new common stock. An overstatement of the amount of funds received by the firm would give a downward bias to the value of coefficient $a_{3}$.)
$S_{2}$ is the change in the book value of common equity during the year minus ploughback, $P_{1}$ which includes nonrecurring gains and losses.
$S_{3}$ is the number of shares actually sold during the year, as reported on the Compustat tape, valued at the arithmetic average of the stock's high and low market prices for the year.
"A" is the book value of total assets measured in the year prior to the base period, and therefore, is not affected by new financing.

Regression coefficient $a_{4}$ is a partial derivative representing the change in earnings divided by the firm's stock of total assets before new financing: $a_{4}=\Delta E_{i} / A_{i}$. A positive $a_{4}$ indicates that the firm's existing assets have increased in profitability, while a negative sign indicates that they have become less profitable.

If the firm undertook "defensive investment" designed to maintain their declining earnings at a stable level, equation (8) could show positive values for $a_{1}, a_{2}$, and $a_{3}$ but a negative value for $a_{4}$. If, on the other hand, the firm's assets were increasing in profitability, then the greater the value of $A_{i}$, ceteris paribus, the larger would be $\Delta E_{i}$.

Firms that investors perceive as being above average in risk should be expected to exhibit above average growth in earnings, so as to compensate investors for the increased risk. An average risk averse investor would be induced to purchase shares of a firm which he considered as being "risky" only if he anticipated a relatively higher rate of return from the investment. Nevertheless, because risk is a factor tending to increase the variability of the rate of return, it would weaken the correlation between ploughback and growth.
$R$ was computed for each firm by regressing cash flows per share against time for the 1949 to 1968 period to obtain a time series equation of the form $E_{2}=a_{0}+a_{1}$ (time). The
residual variance from this equation (the sum of the squared deviations from the trend line divided by the degrees of freedom) was then divided by the square of the value of cash flows ( $E_{2}$ ) for the final period, 1968, in order to put the variance on a relative basis.

$$
R=\frac{\left(E_{2}, \text { trend }-E_{2}, \text { actual }\right)^{2}}{\text { degrees of freedom }} /\left(E_{2}, 1968\right)^{2}
$$

This value of $R$, which measures the relative variability of cash flows about its trend line, was used for all base periods and earnings periods.

In order to lessen the degree of heteroscedasticity, equation (8) was modified by dividing all variables by total assets, $A_{i}$. Hence, all variables are expressed as ratios to total assets. Examination of the residuals and the table of simple correlation coefficients showed the adjusted data to be free of heteroscedasticity and multicollinearity problems. Equation (8), thus, becomes:

$$
\begin{equation*}
\frac{\Delta E_{i}}{A_{i}}=a_{4}+a_{1}\left(\frac{P_{i}}{A_{i}}\right)+a_{2}\left(\frac{N_{i}}{A_{i}}\right)+a_{3}\left(\frac{S_{i}}{A_{i}}\right)+a_{0}\left(\frac{1}{A_{i}}\right)+a_{5}\left(\frac{R_{i}}{A_{i}}\right) . \tag{9}
\end{equation*}
$$

In order to compensate for the possible problem of heterogeneity in the aggregate sample, eight industries within the composite sample were also analyzed individually. This grouping allowed us to control for "industry effects" and to study industries characterized by varying degrees of opportunity for growth. The sample industries were foods, chemicals, machinery, transportation, oil and petroleum products, primary metals, electrical equipment, and retail stores.

## III. Discussion of Results

The results of empirical testing of the models suggest that firms are able to increase their future earnings by retaining and investing a portion of their profits. This conclusion is evident in Table I which shows the results of a representative number of regressions from the composite sample. This table, which indicates the results for three-to-five-year lags, the two lag structures yielding the most significant relationships in the study, indicates that the coefficient of the ploughback variable, $a_{1}$, is highly significant in each case.

Of the two measures of earnings growth, the change in cash flows, $\Delta E_{2}$, generally provided the most significant positive relationships with the ploughback variable. There are two possible reasons for this. Either cash flows are more representative of the funds actually available for dividend distribution or for retention than are earnings alone, or depreciation funds were invested in attractive projects that contributed to growth. To reinforce the conclusion that $\Delta E_{2}$ was a superior index of earnings growth, the simple correlation coefficient between $\Delta E_{2}$ and ploughback was notably higher than the corresponding correlation coefficient between $\Delta E_{1}$ and ploughback.

Table I also indicates that the coefficient of the risk variable, $a_{5}$, tends to be positively and significantly related to earnings growth for the composite sample in eight of the nine cases shown, indicating that high-risk firms, on average, tend to earn higher rates of return than low-risk firms. The coefficients of both the new debt ( $a_{2}$ ) and new stock ( $a_{3}$ ) variables tend to have the correct positive relationship and are, in general, statistically significant. The new stock variable has a negative impact in several instances, however, suggesting a different lag structure between external equity investment and earnings growth than exists between debt and ploughback and earnings growth.

Table 1.-Results of the Composite Sample*

$$
\Delta E=a_{0}+a_{1} P+a_{2} N+a_{3} S+a_{4} A+a_{5} R
$$

| Variables Included | Base <br> Period | $\underset{\text { (years) }}{\mathrm{Lag}}$ | $\mathrm{a}_{0}$ | $\mathrm{a}_{1}$ | $\mathrm{a}_{2}$ | $\mathrm{a}_{3}$ | $a_{4}$ | $a_{5}$ | $\mathrm{R}^{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\Delta \mathrm{E}_{2}, \mathrm{P}_{2}, \mathrm{~N}_{1}, \mathrm{~S}_{1}, \mathrm{~A}, \mathrm{R}$ | 60-63 | 5 | $\begin{array}{r} -12.061 \\ (-5.84) \end{array}$ | $\begin{array}{r} .444 \\ (3.99) \end{array}$ | $\begin{array}{r} .256 \\ (3.05) \end{array}$ | $\begin{array}{r} .757 \\ (8.22) \end{array}$ | -. 124 | $\begin{gathered} 13.250 \\ (10.08) \end{gathered}$ | . 564 |
| $\Delta \mathrm{E}_{2}, \mathrm{P}_{2}, \mathrm{~N}_{1}, \mathrm{~S}_{1}, \mathrm{~A}, \mathrm{R}$ | 58-61 | 5 | $\begin{aligned} & -1.264 \\ & (-1.03) \end{aligned}$ | $\begin{array}{r} .292 \\ (8.99) \end{array}$ | $\begin{array}{r} .091 \\ (13.57) \end{array}$ | $\begin{gathered} -.04 \mathrm{r} \\ (-10.22 \end{gathered}$ | . 053 | $\begin{array}{r} 6.369 \\ (6.73) \end{array}$ | . 935 |
| $\triangle \mathrm{E}_{2}, \mathrm{P}_{2}, \mathrm{~N}_{1}, \mathrm{~S}_{1}, \mathrm{~A}, \mathrm{R}$ | 57-60 | 5 | $\begin{aligned} & .348 \\ & (.47) \end{aligned}$ | $\begin{array}{r} .363 \\ (8.01) \end{array}$ | $\begin{array}{r} .105 \\ (12.48) \end{array}$ | $\begin{array}{r} -.029 \\ (-7.18) \end{array}$ | -. 107 | $\begin{array}{r} 1.778 \\ (1.77) \end{array}$ | . 961 |
| $\Delta \mathrm{E}_{1}, \mathrm{P}_{2}, \mathrm{~N}_{1}, \mathrm{~S}_{3}, \mathrm{~A}, \mathrm{R}$ | 56-59 | 5 | $\begin{aligned} & -1.130 \\ & (-2.30) \end{aligned}$ | $\begin{array}{r} .374 \\ (7.08) \end{array}$ | $\begin{array}{r} .053 \\ (6.10) \end{array}$ | $\begin{array}{r} -.660 \\ (-4.36) \end{array}$ | -. 212 | $\begin{array}{r} 2.263 \\ (4.20) \end{array}$ | . 931 |
| $\Delta \mathrm{E}_{1}, \mathrm{P}_{2}, \mathrm{~N}_{1}, \mathrm{~S}_{3}, \mathrm{~A}, \mathrm{R}$ | 60-63 | 3 | $\begin{array}{r} -.771 \\ (-1.40) \end{array}$ | $\begin{array}{r} .150 \\ (5.67) \end{array}$ | $\begin{array}{r} .121 \\ (7.46) \end{array}$ | $\begin{array}{r} .001 \\ (7.60) \end{array}$ | -. 002 | $\begin{array}{r} 1.350 \\ (4.06) \end{array}$ | . 500 |
| $\Delta \mathrm{E}_{1}, \mathrm{P}_{2}, \mathrm{~N}_{1}, \mathrm{~S}_{3}, \mathrm{~A}, \mathrm{R}$ | 59-62 | 3 | $\begin{array}{r} .984 \\ (1.38) \end{array}$ | $\begin{array}{r} .039 \\ (6.99) \end{array}$ | $\begin{array}{r} .031 \\ (14.64) \end{array}$ | $\begin{array}{r} -.001 \\ (-11.98) \end{array}$ | . 093 | $\begin{array}{r} .877 \\ (1.92) \end{array}$ | . 937 |
| $\Delta \mathrm{E}_{2}, \mathrm{P}_{2}, \mathrm{~N}_{1}, \mathrm{~S}_{3}, \mathrm{~A}, \mathrm{R}$ | 58-61 | 3 | $\begin{array}{r} .900 \\ (2.19) \end{array}$ | $\begin{array}{r} .059 \\ (7.88) \end{array}$ | $\begin{gathered} .000 \\ (.11) \end{gathered}$ | $\begin{array}{r} .002 \\ (12.39) \end{array}$ | . 014 | $\begin{gathered} 1.024 \\ (3.25) \end{gathered}$ | . 930 |
| $\Delta \mathrm{E}_{2}, \mathrm{P}_{2}, \mathrm{~N}_{1}, \mathrm{~S}_{3}, \mathrm{~A}, \mathrm{R}$ | 57-60 | 3 | $\begin{aligned} & -.496 \\ & (-.93) \end{aligned}$ | $\begin{array}{r} .566 \\ (21.71) \end{array}$ | $\begin{array}{r} .022 \\ (3.61) \end{array}$ | $\begin{array}{r} .022 \\ (26.30) \end{array}$ | -. 453 | $\begin{gathered} 1.195 \\ (1.66) \end{gathered}$ | . 993 |
| $\Delta \mathrm{E}_{1}, \mathrm{P}_{2}, \mathrm{~N}_{1}, \mathrm{~S}_{1}, \mathrm{~A}, \mathrm{R}$ | 55-58 | 3 | $\begin{gathered} 8.061 \\ (1.17) \end{gathered}$ | $\begin{gathered} 2.220 \\ (2.26) \end{gathered}$ | $\begin{array}{r} .992 \\ (1.84) \end{array}$ | $\begin{aligned} & -1.189 \\ & (-1.71) \end{aligned}$ | $-1.778$ | $\begin{array}{r} -2.929 \\ (-.42) \end{array}$ | . 034 |
| (all figures given in parentheses are t values) |  |  |  |  |  |  |  |  |  |

*Coefficient $a_{0}$ is the intercept of equation (8) while coefficient $a_{4}$ indicates the effect of changes in the profitability of the existing asset base. The computer software used did not test for the significance of $a_{4}$ since this coefficient was the intercpet of the transformed equation (9).

The coefficient of the retention variable, $a_{1}$, is substantially higher than either the new debt, $a_{2}$, or new equity, $a_{3}$, variable in all but one case in Table I. One possible explanation for this result is that dividend payouts may have tended (for this sample of firms over this time period) to be too large, resulting in relatively high opportunity rates for retained earnings. This explanation is weakened by the fact that evidence was found of different lag structures between earnings growth and the various sources of funds. Also, the finding of a high value for $a_{1}$ may be sample specific; i.e. the sample may have been composed of firms that make substantially differing use of various capital sources. It may be that those using retained earnings financing were also those with the most attractive investment opportunities. Finally, of course, the relative size of the $a_{1}, a_{2}$ and $a_{3}$ coefficients can best be assessed only in relation to the firm's cost of various capital sources. The finding of a significant positive relationship between earnings growth and ploughback does not rule out, however, the possibility that earnings on ploughback may still be lower than is required by investors. It merely suggests a strong positive relationship between
ploughback and earnings growth, especially when considered in relation to the returns from new debt and equity investments.

The variability of the magnitude of the coefficients over various time horizons is consistent with the notion that marginal returns from new investment and changes in the profitability of the existing asset base may be influenced by cyclical factors.

When the firms were grouped by industry classification in order to account for industry effects, strong support was found for the hypothesis of a retention-earnings linkage. (For space reasons, individual industry results are not reported. They are available, however, from the author on request.) This support was strongest in the machinery industry, (significant positive relationship in 13 of 14 cases), the petroleum industry ( 11 of 14 cases), the electrical equipment industry ( 10 of 14 cases), and the retail stores industry ( 9 of 13 cases).

There is some support for the ploughback-earnings growth hypothesis in the food industry for later periods (post-1960). The evidence supported that retention-growth linkage in the chemical industry when three-year lags were used, suggesting that this growth industry tends to invest in projects generating quicker paybacks than other, less growth-oriented industries. For example, results from the petroleum industry sample tend to suggest that longer lag periods may be more appropriate in that industry.

Results of tests between ploughback and earnings growth in the primary metals and the transportation industries do not tend to confirm the retention-growth hypothesis. One possible explanation for this finding relates to the relative performance of these industries. Both industries have been characterized by low levels of profitability for a long time. Given this poor and generally declinig level of performance, it is not surprising to find that firms in these industries have not been making new investments which have been profitable at the margin.

The issuance of new common stock and new debt generally had a positive effect upon subsequent earnings growth. Regression coefficients $a_{2}$ and $a_{3}$ were both generally positive and significant with the strength of the relationships varying from industry to industry. As the variability of cash flows increased (perhaps because of the acceptance of riskier investment projects), firms did obtain a higher level of earnings growth. The sign of the coefficient of risk, $a_{5}$, was normally positive and significant. This result may suggest that the variability of cash flows is more indicative of a firm's risk than is the variability of $E P S$ employed by $B H M Q$.

## IV. Summary

Empirical work in finance is frequently hampered by methodological problems. A number of such defects have prevailed in the testing of the retention-growth linkage and have led to serious questioning of traditional fundamental theory that retention leads to growth. The empirical work in this study has corrected some of the former methodological defects and has produced results that tend to support theoretical expectations.

The lag between ploughback and the subsequent realization of growth in earnings is variable and, therefore, difficult to predict. It depends upon the nature of the industries in which the company operates, the state of the company's development, current economic conditions, and the overall socio-political environment. Clearly more work is needed to indentify fully the nature of the lags and more completely confirm the linkage. Nevertheless, these results are helpful in placing one of the foundations of financial theory back on course.

The results provide interesting new insights on the role of defensive investment in mature industries and the role of external financing on subsequent earnings growth. They also confirm long-held suspicions that payout pressures may be more overwhelming than reinvestment pressures despite apparently attractive investment opportunities. Finally, our findings suggest that retained funds tend to lead to growth in earnings in industries in which higher profit potentials are evident; whereas, opposite results obtain for low profit industries which are past the industrial maturity stage of their life cycle development.

## REFERENCES

1.William J. Baumol, Peggy Heim, Burton G. Malkiel and Richard E. Quandt, "Earnings Retention, New Capital, and the Growth of the Firm," The Review of Economics and Statistics, (November 1970).
2.H.G. Grabowski and D.C. Mueller, "Life-Cycle Effects on Corporate Returns on Retentions," Review of Economics and Statistics, (November 1975).
3. Veikko Jaaskelainen, "Growth of Earnings and Dividend Distribution Policy," Swedish Journal of Economics, (1967).
4.I.M.D. Little, "Higgeldy Piggeldy Growth," Bulletin of the Oxford University Institute of Statistics, (November 1962).
5.G. Whittington, "The Profitability of Retained Earnings," Review of Economics and Statistics, (1972).

Copyright of Journal of Financial Research is the property of Wiley-Blackwell and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.

Case 12-E-0201 \& 12-G-0202

| Inputs | 111 |  | [2] | TwO-STAGE DCF MODE |  |  |  | [7] | [8] | [9] | [10] | [11] | [12] | 1131 | Per Staff | Exhibit (KXD-27) page I of 19 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | [3] | [4] | [5] | [6] |  |  |  |  |  |  |  |  |  |
|  |  | Stook |  |  | EPS Growth | ctions |  | CDP |  | Payout R |  |  | ver Cells | Neart Term |  | Long Term |  |
| Company | Ticker | Price | Zacks | Value Line | First Call | Average | Growth | 2012 | 2015 | Long.Tem | Delta | k(e) Per Company | Growth | Growth | $\mathrm{k}(\mathrm{e})$ | Outlier labelling |
| Allete | ALE | \$41.41 | 5.00\% | 6.00\% | 5.00\% | 5.33\% | 5.78\% | 68.00\% | 62.00\% | 56.78\% | \$0.00 | 9.81\% | 5,33\% | 5.78\% | 9,38\% |  |
| Alliant Energy Corp. | LNT | \$43.08 | 600\% | 6.50\% | 4.75\% | 5.75\% | 5.78\% | 65.00\% | 64.00\% | 66.78\% | 50.00 | 10.76\% | 5.75\% | 5.78\% | 10.27\% |  |
| Ameren Corp. | AEE | \$32.01 | 4.00\% | NA | NA | 4.00\% | 5.78\% | 67.00\% | 70.00\% | 66.78\% | \$0.00 | 12.05\% | 4.00\% | 5.78\% | 11.44\% | OUTLIER |
| American Electric Power | AEP | \$39.84 | 4.30\% | 4.50\% | 4.01\% | 4.27\% | 5.78\% | 58.00\% | 55.00\% | 66.78\% | \$0.00 | 10.39\% | 4.27\% | 5.78\% | 9.93\% |  |
| Avista Corp. | AVA | \$25.38 | 4.70\% | 4.50\% | 4.00\% | 4.40\% | 5.78\% | 64.00\% | 68.00\% | 66.78\% | \$0.00 | 10.51\% | 4.40\% | 5.78\% | 10.03\% |  |
| Black Hills Corp. | BKH | \$33.81 | 5.00\% | 8.50\% | 6.00\% | 6.50\% | 5.78\% | 73,00\% | 66.00\% | 66.78\% | \$0.00 | 9.80\% | 6.50\% | 5.78\% | 9.37\% |  |
| Center Point Energy | CNP | \$19.15 | 5.70\% | 3.00\% | 4.90\% | 4.53\% | 5.78\% | 6500\% | 66.00\% | 66.78\% | \$0.00 | 9.86\% | 4.53\% | 5.78\% | 9.43\% |  |
| Cleco Corp. | CNL | \$38.30 | NA | 6.00\% | 3.00\% | 4.50\% | 5.78\% | 52.00\% | 59.00\% | 66.78\% | \$0.00 | 10.04\% | 4.50\% | 5.78\% | 9.60\% |  |
| Consolidated Etison | ED | \$59.17 | 3.70\% | 3.00\% | 3.59\% | 3.43\% | 5.78\% | 65.00\% | 62.00\% | 66.78\% | \$0.00 | 9.77\% | 3.34\% | 5.78\% | 935\% |  |
| Daminion Resources, Inc. | D | \$50.96 | 5.50\% | 5.00\% | 4.72\% | 5.07\% | 5.78\% | 67.00\% | 65.00\% | 66.78\% | \$0.00 | 9.66\% | 3.41\% | 5.78\% | 9.24\% |  |
| DTE Energy Co. | DTE | \$54.08 | 4.40\% | 4.50\% | 4.05\% | 4.32\% | 5.78\% | 63.00\% | 63.00\% | 66.78\% | \$0.00 | 10.76\% | 4.3\%\% | 5.78\% | 10.26\% |  |
| Edison International | EIX | \$41.35 | 5.00\% | 0.50\% | 0.50\% | 2.00\% | 5.78\% | 46.00\% | 46.00\% | 66.78\% | \$0.00 | 10.69\% | 2.00\% | 578\% | 10.21\% |  |
| Great Plains Energy lic. | GXP | \$20.81 | 7.00\% | 6.00\% | 4.40\% | 5.80\% | 5.78\% | 59.00\% | 60.00\% | 66.78\% | \$0.00 | 11.46\% | 5.80\% | 5.78\% | 10.92\% |  |
| Hawaian Electric | HE | \$25.76 | 6.50\% | 11.00\% | 11.37\% | 9.62\% | 5.78\% | 73.00\% | 63.00\% | 66.78\% | \$0.00 | 10.29\% | 9.62\% | 5.78\% | 9.84\% |  |
| DACORP, Inc. | DA | \$41.53 | 5.00\% | 4.00\% | 4.00\% | 4.33\% | 5.78\% | 43.00\% | 55.00\% | 66.78\% | \$0.00 | 10.71\% | 4.33\% | 5.78\% | 10.23\% |  |
| Integrys | TEG | \$52.99 | 4.50\% | 9,00\% | 13,90\% | 9.13\% | 5.78\% | 77.00\% | 68.00\% | 66.78\% | \$0.00 | 11.60\% | 9.13\% | 5.78\% | 11.04\% |  |
| OGe Energy | OGE | \$53.98 | 5900\% | 6.50\% | 7.65\% | 6.68\% | 5.78\% | 43.00\% | 43.00\% | 66.78\% | \$0.00 | 10.10\% | 6.68\% | 5.78\% | 9.67\% |  |
| Pepco Holdings, Inc. | POM | \$19.84 | 4.00\% | 2.50\% | 3.70\% | 3.40\% | 5.78\% | 83.00\% | 69.00\% | 66.78\% | \$0.00 | 10.19\% | 3.40\% | 5.78\% | 9.72\% |  |
| PGdEE Corp | PCG | \$41.51 | 4.30\% | 500\% | 1.03\% | 3.44\% | 5.78\% | 61.00\% | 50.00\% | 66.78\% | \$0.00 | 10.36\% | 3.44\% | 5.78\% | 9.90\% |  |
| Pinnacle West Capital | PNW | \$47.55 | 5.30\% | 6.00\% | 5.59\% | 5.63\% | 5.78\% | 63.00\% | 66.00\% | 66.78\% | \$0.00 | 10.80\% | 5.63\% | 5.78\% | 10.30\% |  |
| Portiand General | POR | \$24.94 | 5.00\% | 7.50\% | 5.27\% | 5.92\% | 5.78\% | 54.00\% | 53.00\% | 66.78\% | \$0.00 | 10.87\% | 5.92\% | 5.78\% | 10.38\% |  |
| Scana Corp. | SCG | \$44.77 | 4.00\% | 3.50\% | 4.17\% | 3.89\% | 5.78\% | 63.00\% | 59.00\% | 66.78\% | \$0.00 | 10.25\% | 3.17\% | 5.78\% | 9.79\% |  |
| Sempra Energy | SRE | \$57.02 | 7,00\% | 4.50\% | 7.05\% | 6.18\% | 5.78\% | 45.00\% | 43.00\% | 66.78\% | \$000 | 11.11\% | 6.18\% | 5.78\% | 10.61\% |  |
| Southem C 。 | so | \$44.93 | 5.00\% | 5.00\% | 5.85\% | 5.28\% | 5.78\% | 73.00\% | 69.00\% | 66.78\% | \$000 | 9.96\% | 5.80\% | 5.78\% | 9.52\% |  |
| TECO Energy, Inc. | TE | \$18.29 | 3.70\% | 9.00\% | 4.22\% | 5.64\% | 5.78\% | 65.00\% | 64.00\% | 66.78\% | \$000 | 10.88\% | 6.74\% | 5.78\% | 10.38\% |  |
| Un Holdings Corp. | ULL | \$34.91 | 5.00\% | 3.00\% | 4.10\% | 4.03\% | 5.78\% | 79,00\% | 72.00\% | 66,78\% | \$0.00 | 9.92\% | 4.03\% | 5.78\%\% | 9.48\% |  |
| Vectren Corp. | vc | \$29.31 | 4.30\% | 5.50\% | 5.00\% | 4.93\% | 5.78\% | 73.00\% | 70.00\% | 66.78\% | \$0.00 | 10.01\% | 4.93\% | 5.78\% | 9.57\% |  |
| Westar Energy | WR | \$28.20 | 5.50\% | 8.50\% | 4.23\% | 6.08\% | 5.78\% | 70.00\% | 59.00\% | 66.78\% | \$0.00 | 10.85\% | 6.08\% | 5.78\% | 10.35\% |  |
| Wisconsin Energy | wEC | \$34.45 | 6.30\% | $8.50 \%$ | 6.00\% | 6.93\% | 5.78\% | 53.00\% | 60.00\% | 66.78\% | \$0.00 | 10.32\% | 6.93\% | 5.78\% | 9.86\% |  |
| Xcel Energy, Enc. | XEL | \$20.75 | 5.10\% | 5,00\% | 5.25\% | 5.12\% | 5.78\% | 58.00\% | 63.00\% | 66.78\% | \$0.00 | 10.13\% | 5.12\% | 5.78\% | 9.68\% |  |
| mean: |  |  |  |  |  | 5.21\% | 5.78\% | 62.93\% | 61.07\% | 66.78\% |  | 10.46\% | 5.18\% | 5.78\% | 9.99\% |  |
| MEDIAN: |  |  |  |  |  | 5.10\% |  |  |  |  |  | 10.34\% |  |  | 9.88\% |  |
| MIN: |  |  |  |  |  |  |  |  |  |  |  | 9.66\% |  |  | 9.24\% |  |
| Max: |  |  |  |  |  |  |  |  |  |  |  | 12.05\% |  |  | 11.44\% |  |
| MAD |  |  |  |  |  |  |  |  |  |  |  | 0.42\% |  |  | 0.38\% |  |
| SD |  |  |  |  |  |  |  |  |  |  |  | 0.58\% |  |  | 0.54\% |  |

## Com

MAD is the median of the absolute deviations ubout the median

| Earnings per Share |  | [14] | [15] | [16] | [17] | [18] | [19] | [20] | [21] | [22] | [23] | [24] | [25] | [26] | [27] | [28] | [29] | $\begin{gathered} 2 \text { of } 19 \\ {[30]} \\ \hline \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Company | Ticker | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
| Allete | ALE | 82.19 | 52.31 | \$2.43 | \$2.56 | \$2.70 | \$2.84 | 52.99 | \$3.16 | \$3.35 | \$3.54 | \$3.75 | \$3.96 | \$4.19 | \$4.43 | \$4.69 | \$4.96 | \$5.25 |
| Alliant Energy Corp. | LNT | \$2.75 | \$2.91 | 33.08 | \$3.25 | \$3.44 | \$3.64 | \$3.85 | 54.07 | \$4.30 | \$4.55 | \$4.82 | 55.09 | \$5.39 | \$5.70 | \$6.03 | $\$ 6.38$ | \$6.75 |
| Ameren Corp. | AEE | \$2.77 | \$2.88 | \$3.00 | \$3.12 | \$3.24 | \$3.37 | \$3.50 | \$3.71 | \$3.92 | \$4.15 | \$4.39 | \$4.64 | \$4.91 | \$5.19 | \$550 | 55.81 | \$6.15 |
| American Electric Power | AEP | \$2.60 | \$2.71 | \$2.83 | \$2.95 | $\$ 3.07$ | \$3.20 | \$3.34 | \$3.53 | 53.74 | \$3.96 | \$4.18 | \$4.43 | \$4.68 | \$4.95 | \$5.24 | \$5.54 | \$5.86 |
| Avista Corp. | AVA | \$1.65 | \$1.72 | \$1.80 | \$1.88 | 81.96 | 52.05 | \$2.14 | \$2.26 | \$2.39 | \$2.53 | \$2.68 | \$2.83 | \$2.99 | \$3.17 | 53.35 | \$3.54 | \$3.75 |
| Black Hills Corp. | BKH | \$1.66 | \$1.77 | 31.88 | \$2.01 | \$2.14 | \$2.27 | \$2.42 | \$2.56 | 52.71 | \$2.87 | \$3.03 | 53.21 | \$3739 | \$3.59 | 53.80 | \$4.02 | \$4.25 |
| Center Point Energy | CNP | \$1.07 | \$1.12 | \$1.17 | \$1.22 | 81.28 | \$1.34 | \$1.40 | \$1.48 | \$1.56 | $\$ 1.65$ | \$1.75 | \$1.85 | \$1.96 | \$2.07 | \$2.19 | \$2.32 | \$2.45 |
| Cleca Corp. | CNL | \$2.29 | \$2.39 | \$2.50 | \$2.61 | \$2.73 | \$2.85 | $\$ 2.98$ | \$3.15 | \$3.34 | \$3.53 | \$3.73 | \$3.95 | \$4.18 | \$4.42 | \$4.68 | \$4.95 | \$5.23 |
| Consoldatad Edison | ED | \$3.47 | \$3.57 | \$3.69 | \$3.82 | \$3.95 | \$4.09 | \$4.23 | \$4.47 | \$4.73 | \$5.00 | \$5.29 | \$5.60 | \$5.92 | \$6.26 | \$6.63 | \$7.01 | \$7.41 |
| Dominion Resources, Inc. | D | \$2.89 | \$2.76 | \$2.90 | \$3.05 | \$3.20 | 53.36 | \$3.53 | \$3.74 | \$3.96 | \$4.18 | \$4.43 | \$4.68 | \$4.95 | \$5.24 | \$5.54 | \$5.86 | \$6.20 |
| DTE Energy Co | DTE | \$3.74 | \$3.90 | \$4.07 | \$4.25 | \$4.43 | \$4.62 | \$4.82 | \$5.10 | \$5.39 | 85.70 | 56.03 | \$6.38 | 56.75 | \$7,14 | \$7.56 | \$7.99 | \$8.46 |
| Edison International | EIX | \$3.35 | \$3.42 | \$3.49 | \$3.56 | \$3.63 | \$3.70 | \$3,77 | 53.99 | \$4.22 | \$4.47 | \$4.72 | 55.00 | \$5.29 | 55.59 | \$5.91 | \$6.26 | \$6.62 |
| Great Plains Energy Inc. | GXP | \$1.53 | \$1.62 | \$1.71 | \$1.81 | \$1.92 | \$2.03 | \$2.15 | \$2.27 | \$2.40 | 52.54 | \$2.69 | \$2.84 | \$3.01 | 53.18 | \$3.36 | \$3.56 | \$3.76 |
| Hawaiian Electric | HE | \$1.21 | \$1.33 | \$1.45 | \$1.59 | $\$ 1.75$ | \$1.92 | \$2.10 | \$2.22 | \$2.35 | \$2.49 | \$2.63 | \$2.78 | \$2.94 | \$3.11 | \$3.29 | \$3,48 | \$3.68 |
| macorp, ine | DA | \$2.95 | \$3.08 | \$3.21 | \$3.35 | \$3.50 | \$3.65 | \$3.81 | \$4.03 | \$4.26 | \$4.50 | \$4.76 | \$5.04 | 55.33 | \$5.64 | \$5.97 | 56.31 | \$6.68 |
| Integrys | teg | \$3.24 | \$3.54 | \$3.86 | \$4.21 | \$4.60 | \$5.02 | \$5.47 | \$5.79 | \$6.13 | \$6.48 | \$6.85 | \$725 | $\$ 7.67$ | 88.11 | ${ }^{58.58}$ | \$9.08 | 59.60 |
| OGE Energy | OGE | \$2.99 | 53.19 | \$3.40 | \$3.63 | 83.87 | \$4.13 | \$4.41 | \$4.66 | \$4.93 | 55.22 | \$5.52 | \$5.84 | 56.18 | \$6.53 | \$6.91 | 57.31 | \$7.73 |
| Pepco Holdings, Inc. | POM | \$1.24 | \$1.28 | $\$ 1.33$ | \$1.37 | \$1.42 | \$1.47 | \$1.52 | \$1.60 | \$1.70 | \$1.79 | \$1.90 | \$2.01 | \$2.12 | \$2.25 | \$2.38 | 52.51 | \$2.66 |
| PG\&E Corp | PCG | \$2.82 | \$2.92 | \$3.02 | \$3.12 | \$3.23 | \$3.34 | \$3.46 | \$3.65 | 53.87 | \$4.09 | \$4.33 | \$4.58 | \$4.84 | \$5.12 | \$5.42 | \$5.73 | \$6.06 |
| Pinnacle West Capital | PNW | \$3.08 | \$3.25 | \$3.44 | 33.63 | \$3.83 | \$4.05 | \$4.28 | \$4.53 | \$4.79 | \$5.06 | \$5.36 | \$5.67 | \$5.99 | \$6.34 | 96.71 | \$7.10 | \$7.51 |
| Portland General | POR | \$1.66 | \$1.76 | \$1.86 | \$1.97 | \$2.09 | \$2.21 | \$2.34 | \$2.48 | \$2.62 | \$2.78 | \$2.94 | \$3.11 | \$3.28 | $\$ 3.47$ | \$3.68 | 53.89 | \$4.11 |
| scana Corp. | SCG | \$2.98 | 52.97 | \$3.09 | \$3.21 | \$3.33 | \$3.46 | 5359 | 83.80 | \$4.02 | \$4.25 | \$450 | 54.76 | \$5.04 | 55.33 | \$5.64 | \$5.96 | \$6.31 |
| Sempra Energy | SRE | \$4.02 | \$4.27 | \$4.53 | \$4.81 | \$5.11 | \$5.43 | \$5.76 | \$6.10 | 56.45 | 56.82 | \$7.21 | \$7.63 | \$8.07 | \$8.54 | \$9.03 | 59.56 | \$10,11 |
| Southern Co. | so | \$2.37 | \$2.57 | \$2.71 | 52.85 | \$3.00 | 53.16 | \$3.32 | 83.52 | 83.72 | \$3.94 | \$4,16 | \$4.40 | \$4.66 | \$4.93 | \$5.21 | \$5.51 | 55.83 |
| TECO Energy, Inc. | TE | \$1.13 | \$1.27 | \$1.34 | \$1.42 | \$1.50 | \$1.58 | \$1.67 | 81.77 | \$1.87 | \$1.98 | 52.09 | \$2.21 | \$2.34 | \$2.48 | \$2.62 | \$2.77 | \$2.93 |
| UIL. Holdings Corp. | ULI | \$1.99 | \$2.07 | \$2.15 | \$2.24 | \$2.33 | \$2.43 | \$2.52 | \$2.67 | \$2.82 | \$2.99 | \$3.16 | 53.34 | \$3.53 | \$3.74 | $\$ 3.96$ | \$4.18 | \$4.43 |
| Vectren Corp. | vve | \$1.64 | \$1.72 | \$1.81 | \$1.89 | \$1.99 | \$2.09 | \$2.19 | \$2.32 | \$2.45 | \$2.59 | \$2.74 | \$2.90 | \$3.07 | \$3,24 | \$3.43 | \$3.63 | \$3.84 |
| Westar Energy | WR | \$1.80 | $\$ 1.91$ | \$2.03 | \$2.15 | \$2.28 | \$2.42 | 32.56 | \$2.71 | \$2.87 | \$3.04 | \$3.21 | \$3.40 | \$3.59 | \$3.80 | \$4.02 | \$4.25 | \$4.50 |
| Wisconsin Energy | WEC | $\$ 1.92$ | \$2.05 | \$2.20 | \$2.35 | \$2.51 | \$2.68 | \$2.87 | \$3,04 | \$3.21 | \$3.40 | \$3.59 | \$3.80 | \$4.02 | \$4.25 | \$4.50 | \$4.76 | \$5.04 |
| Xcel Energy, Inc. | XEL | \$1.56 | \$1.64 | \$1.72 | \$1.81 | \$1.90 | \$2.00 | \$2.10 | \$2.23 | \$2.35 | \$2.49 | \$264 | \$2.79 | \$2.95 | \$3.12 | \$3.30 | \$3.49 | \$3.69 |

$\qquad$

| Dividend Payout Ratio | [31] | [32] | [33] | [34] | [35] | [36] | [37] | [38] | [39] | [40] | [41] | [42] | [43] | [44] | $[45]$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Company | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
| Allete | 68.00\% | 66.00\% | 64.00\% | 62.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Alliant Energy Corp. | 65.00\% | 64.67\% | 64.33\% | 64.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Ameren Corp. | 67.00\% | 68.00\% | 69.00\% | 70.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| American Electric Power | 58.00\% | 57.00\% | 56.00\% | 55.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Avista Corp. | 64.00\% | 65.33\% | 66.67\% | 68.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Black Hills Corp. | 73.00\% | 70.67\% | 68.33\% | 66.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Center Point Energy | 65.00\% | 65.33\% | 65.67\% | 66.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Cleco Corp. | 52.00\% | 54.33\% | 56.67\% | 59.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Consolidated Edison | 65.00\% | 64.00\% | 63.00\% | 62.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Dominion Resources, Inc. | 67.00\% | 66.33\% | 65.67\% | 65.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66,78\% | 66.78\% |
| DTE Energy Co. | . $63.00 \%$ | 63.00\% | 63.00\% | 63.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Edison International | 46.00\% | 46.00\% | 46.00\% | 46.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Great Plains Energy Inc. | 59.00\% | 59.33\% | 59.67\% | 60.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Hawaiian Electric | 73.00\% | 69.67\% | 66.33\% | 63.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| IDACORP, Inc. | 43.00\% | 47.00\% | 51.00\% | 55.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Integrys | 77.00\% | 74.00\% | 71.00\% | 68.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66,78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| OGE Energy | 43.00\% | 43.00\% | 43.00\% | 43.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Pepco Holdings, Inc. | 83.00\% | 78.33\% | 73.67\% | 69.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| PG\&E Corp | 61.00\% | 57.33\% | 53.67\% | 50.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Pinnacle West Capital | 63,00\% | 64.00\% | 65.00\% | 66.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Portiand General | 54.00\% | 53.67\% | 53.33\% | 53.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| SCANA Corp. | 63.00\% | 61.67\% | 60.33\% | 59.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Sempra Energy | 45.00\% | 44.33\% | 43.67\% | 43.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Southern Co. | 73.00\% | 71.67\% | 70.33\% | 69.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| TECO Energy, Inc. | 65.00\% | 64.67\% | 64.33\% | 64.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| UIL Holdings Corp. | 79.00\% | 76.67\% | 74.33\% | 72.00\% | 66,78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Vectren Corp. | 73.00\% | 72.00\% | 71.00\% | 70.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Westar Energy | 70.00\% | 66.33\% | 62.67\% | 59.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Wisconsin Energy | 53.00\% | 55.33\% | 57.67\% | 60.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Xcel Energy, Inc. | 58.00\% | 59.67\% | 61.33\% | 63.00\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |



| Investor Cash Flows | [65] | [66] | [67] | [68] | [69] | [70] | [71] | [72] | [73] | [74] | [75] | [76] | [77] | [78] | [79] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Company | $9 / 16112$ | 9/16/13 | 9/16/14 | 9/16/15 | 9716116 | $9 / 16117$ | 9/16/18 | $916 / 19$ | 9/16/20 | 9/16/21 | 9/16/22 | 9/16/23 | 9/16/24 | 9/16/25 | 9/16/26 |
| Allete | \$1.65 | \$1.69 | \$1.73 | \$1.76 | \$2.00 | \$2.11 | \$2.24 | \$2.36 | \$2.50 | \$2.65 | \$2.80 | \$2.96 | \$3.13 | \$3.31 | \$95.59 |
| Alliant Energy Corp. | \$2.00 | \$2.10 | \$2.21 | \$2.33 | \$2.57 | \$2.72 | \$2.87 | \$3.04 | \$3.22 | \$3.40 | \$3.60 | \$3.81 | \$4.03 | \$4.26 | \$100.26 |
| Ameren Corp. | \$2.01 | \$2.12 | \$2.24 | \$2.36 | \$2.34 | \$2.48 | \$2.62 | \$2.77 | \$2.93 | \$3.10 | \$3.28 | \$3.47 | \$3.67 | \$3.88 | \$73.45 |
| American Electric Power | \$1.64 | \$1.68 | \$1.72 | \$1.76 | \$2.23 | \$2.36 | \$2.50 | \$2.64 | \$2.79 | \$2.96 | \$3.13 | \$3.31 | \$3.50 | \$3.70 | \$93.83 |
| Avista Corp. | \$1.15 | \$1.23 | \$1.31 | \$1.39 | \$1.43 | \$1.51 | \$1.60 | \$1.69 | \$1.79 | \$1.89 | \$2.00 | \$2.11 | \$2.24 | \$2.37 | \$58.48 |
| Black Hills Corp. | \$1.37 | \$1.42 | \$1.46 | \$1.50 | \$1.62 | \$1.71 | \$1.81 | \$1.91 | \$2.03 | \$2.14 | \$2.27 | \$2.40 | \$2.54 | \$2.68 | \$77.63 |
| Center Point Energy | \$0.76 | \$0.80 | \$0.84 | \$0.88 | \$0.93 | \$0.99 | \$1.04 | \$1.10 | \$1.17 | \$1.23 | \$1.31 | \$1.38 | \$1.46 | \$1.55 | \$44.07 |
| Cleco Corp. | \$1.30 | \$1.42 | \$1.55 | \$1.68 | \$1.99 | \$2.11 | \$2.23 | \$2.36 | \$2.49 | \$2.64 | \$2.79 | \$2.95 | \$3.12 | \$3.30 | \$90.26 |
| Consolidated Edison | \$2.40 | \$2.44 | \$2.49 | \$2.53 | \$2.82 | \$2.99 | \$3.16 | \$3.34 | \$3.53 | \$3.74 | \$3.95 | \$4.18 | \$4.42 | \$4.68 | \$136.15 |
| Dominion Resources, Inc. | \$1.94 | \$2.02 | \$2.10 | \$2.19 | \$2.36 | \$2.50 | \$2.64 | \$2.79 | \$2,96 | \$3.13 | \$3.31 | \$3.50 | \$3.70 | \$3,91 | \$117.24 |
| DTE Energy Co. | \$2.56 | \$2.67 | \$2.79 | \$2.91 | \$3.22 | \$3.40 | \$3.60 | \$3.81 | \$4.03 | \$4.26 | \$4.51 | \$4.77 | \$5.05 | \$5.34 | \$125.63 |
| Edison International | \$1.60 | \$1.64 | \$1.67 | \$1.70 | \$2.52 | \$2.66 | \$2.82 | \$2.98 | \$3.15 | \$3.34 | \$3.53 | \$3.73 | \$3.95 | \$4.18 | \$99.68 |
| Great Plains Energy Inc. | \$1.01 | \$1.08 | \$1.14 | \$1.22 | \$1.43 | \$1.52 | \$1.60 | \$1.70 | \$1.79 | \$1.90 | \$2.01 | \$2.12 | \$2.25 | \$2.38 | \$49.32 |
| Hawaiian Electric | \$1.06 | \$1.11 | \$1.16 | \$1.21 | \$1.40 | \$1.48 | \$1.57 | \$1.66 | \$1.76 | \$1.86 | \$1.96 | \$2.08 | \$2.20 | \$2.33 | \$60.13 |
| IDACORP, Inc. | \$1.38 | \$1.57 | \$1.78 | \$2.01 | \$2.54 | \$2.69 | \$2.84 | \$3.01 | \$3.18 | \$3.37 | \$3.56 | \$3.77 | \$3.98 | \$4.21 | \$100.17 |
| Integrys | \$2.97 | \$3.12 | \$3.26 | \$3.41 | \$3.66 | \$3.87 | \$4.09 | \$4.33 | \$4.58 | \$4.84 | \$5.12 | \$5.42 | \$5.73 | \$6.06 | \$123.00 |
| OGE Energy | \$1.46 | \$1.56 | \$1.67 | \$1.78 | \$2.94 | \$3.11 | \$3.29 | \$3.48 | \$3.69 | \$3.90 | \$4.12 | \$4.36 | \$4.62 | \$4.88 | \$131.75 |
| Pepco Holdings, Inc. | \$1.10 | \$1.07 | \$1.04 | \$1.01 | \$1.01 | \$1.07 | \$1.13 | \$1.20 | \$1.27 | \$1.34 | \$1.42 | \$1.50 | \$1.59 | \$1.68 | \$44.38 |
| PG\&E Corp | \$1.84 | \$1.79 | \$1.73 | \$1.67 | \$2.31 | \$2.44 | \$2.58 | \$2.73 | \$2.89 | \$3.06 | \$3.23 | \$3.42 | \$3.62 | \$3.83 | \$97.63 |
| Pinnacle West Capital | \$2.17 | \$2.32 | \$2.49 | \$2.67 | \$2.86 | \$3.02 | \$3.20 | \$3.38 | \$3.58 | \$3.78 | \$4.00 | \$4.23 | \$4.48 | \$4.74 | \$110.66 |
| Portand General | \$1.01 | \$1.06 | \$1.11 | \$1.17 | \$1.57 | \$1.66 | \$1.75 | \$1.85 | \$1.96 | \$2.07 | \$2.19 | \$2.32 | \$2.45 | \$2.60 | \$59.81 |
| SCANA Corp. | \$1.94 | \$1.98 | \$2.01 | \$2.04 | \$2.40 | \$2.54 | \$2.69 | \$2.84 | \$3.01 | \$3.18 | \$3.36 | \$3.56 | \$3.76 | \$3.98 | \$104.02 |
| Sempra Energy | \$2.04 | \$2.13 | \$2.23 | \$2.33 | \$3.85 | \$4.07 | \$4.31 | \$4.55 | \$4.82 | \$5.10 | \$5.39 | \$5.70 | \$6.03 | \$6.38 | \$140.89 |
| Southern Co. | \$1.98 | \$2.04 | \$2.11 | \$2.18 | \$2.22 | \$2.35 | \$2.48 | \$2.63 | \$2.78 | \$2.94 | \$3.11 | \$3.29 | \$3.48 | \$3.68 | \$102.45 |
| TECO Energy, Inc. | \$0.87 | \$0.92 | \$0.96 | \$1.01 | \$1.12 | \$1.18 | \$1.25 | \$1.32 | \$1.40 | \$1.48 | \$1.56 | \$1.65 | \$1.75 | \$1.85 | \$42.57 |
| UIL Holdings Corp. | \$1.70 | \$1.72 | \$1.73 | \$1.75 | \$1.68 | \$1.78 | \$1.89 | \$1.99 | \$2.11 | \$2.23 | \$2.36 | \$2.50 | \$2.64 | \$2.79 | \$78.45 |
| Vectren Corp. | \$1.32 | \$1.36 | \$1.41 | \$1.46 | \$1.46 | \$1.55 | \$1.64 | \$1.73 | \$1.83 | \$1.94 | \$2.05 | \$2.17 | \$2.29 | \$2.42 | \$66.69 |
| Westar Energy | \$1.42 | \$1.43 | \$1.43 | \$1.43 | \$1.71 | \$1.81 | \$1.92 | \$2.03 | \$2.14 | \$2.27 | \$2.40 | \$2.54 | \$2.68 | \$2.84 | \$65.71 |
| Wisconsin Energy | \$1.16 | \$1.30 | \$1.45 | \$1.61 | \$1.92 | \$2.03 | \$2.15 | \$2.27 | \$2.40 | \$2.54 | \$2.69 | \$2.84 | \$3.01 | \$3.18 | \$81.81 |
| Xcel Energy, Inc. | \$1.00 | \$1.08 | \$1.17 | \$1.26 | \$1.41 | \$1.49 | \$1.57 | \$1.66 | \$1.76 | \$1.86 | \$1.97 | \$2.08 | \$2.20 | \$2.33 | \$62.48 |

Allete
Alliant Energy Corp.
Ameren Corp.
American Electric Power
Avista Corp.
Black Hills Corp.
Center Point Energy
Cleco Corp.
Consolidated Edison
Dominion Resources, Inc.
DTE Energy Co.
Edison International
Great Pains Energy Inc.
Hawaiian Electric
IDACORP, Inc.
Integrys
oce Energy
Peppo Holdings, Inc.
PG\&E Corp
Pinnacle West Capital
Portand General
SCANA Corp.
Sempra Energy
Southern Co.
TECO Energy, Inc.
UlL Holdings Corp.
Vectren Corp.
Westar Energy
Wiscoasin Energy
Xcel Energy, Inc.
MEAN:
MEDIAN:
MIN:
MAX:
MAD

| Outilow | 916612 | 9/16/13 | 911614 | 91615 | 91616 | 91617 | 911618 | 916019 | $916 / 20$ | 9/16/21 | 916122 | 9116/23 | 9/16/24 | 9116/25 | 9/16/26 | ROE Using I Outier labelling |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (\$41.41) | \$1.65 | 81.69 | \$1.73 | \$1.76 | \$2.00 | \$2.11 | \$2.24 | \$2.36 | \$2.50 | \$2.65 | \$2.80 | \$2.96 | $\$ 3.13$ | \$3.31 | \$95.59 | 9.38\% |
| (543.08) | \$2.00 | \$2.10 | \$2.21 | \$2.33 | \$2.57 | 52.72 | \$2.87 | \$3.04 | \$3.22 | \$3.40 | \$3.60 | 83.81 | \$4.03 | \$4.26 | \$100.26 | 10.27\% |
| (\$32.01) | \$2.01 | \$2.12 | \$2.24 | \$2.36 | \$2.34 | 52.48 | \$2.62 | \$2.77 | \$2.93 | \$3.10 | \$3.28 | \$3.47 | \$3,67 | \$3.88 | \$73.45 | 11.44\% OUTLIER |
| (\$39.84) | \$1.64 | \$1.68 | \$1.72 | \$1.76 | \$2.23 | \$2.36 | \$2.50 | \$2.64 | \$2.79 | \$2.96 | \$3.13 | \$3.31 | 33.50 | \$3.70 | \$93.83 | 9.93\% |
| (525.38) | \$1.15 | \$1.23 | \$1.31 | \$1.39 | \$1.43 | \$1.51 | \$1.60 | \$1.69 | \$1.79 | \$1.89 | \$2.00 | \$2.11 | \$2.24 | \$2.37 | \$58.48 | 10.03\% |
| (\$33.81) | \$1.37 | \$1.42 | \$1.46 | \$1.50 | \$1.62 | \$1.71 | \$1.81 | \$1.91 | \$2.03 | \$2.14 | \$2.27 | \$2.40 | \$2.54 | \$2.68 | \$77.63 | 9.37\% |
| (\$19.15) | \$076 | \$0.80 | $\$ 0.84$ | 80.88 | 50.93 | \$0.99 | $\$ 1.04$ | \$1.10 | \$1.17 | \$1.23 | \$1.31 | \$138 | \$1.46 | \$1.55 | \$44.07 | 9.43\% |
| (\$38.30) | \$1.30 | \$1.42 | \$1.55 | \$1.68 | \$1.99 | \$2.11 | \$2.23 | \$2.36 | \$2.49 | \$2.64 | \$2.79 | \$2.95 | \$3.12 | 83.30 | \$90.26 | 9.60\% |
| (\$59.17) | \$2.40 | \$2.44 | \$2.49 | \$2.53 | \$2.82 | \$2.99 | \$3.16 | \$3.34 | \$3.53 | \$3.74 | \$3.95 | \$4.18 | \$4.42 | \$4.68 | \$136.15 | 9.35\% |
| ( 850.96 ) | \$1.94 | \$2.02 | \$2.10 | \$2.19 | \$2.36 | \$2.50 | \$2.64 | \$2.79 | 52.96 | \$3.13 | \$3.31 | \$3.50 | \$3.70 | \$3.91 | \$117.24 | 9.24\% |
| (\$54.08) | \$2.56 | \$2.67 | \$2.79 | \$2.91 | \$3.22 | 53.40 | \$3.60 | \$3.81 | \$4.03 | \$4.26 | \$4.51 | \$4.77 | \$505 | \$5.34 | \$125.63 | 10.26\% |
| (\$41.35) | \$1.60 | \$1.64 | \$1.67 | \$1.70 | \$2.52 | \$2.66 | \$2.82 | \$2.98 | 53.15 | \$334 | \$3.53 | \$3.73 | \$3.95 | \$4.18 | \$99.68 | '10.21\% |
| (\$20.81) | \$1.01 | \$1.08 | \$1.14 | \$1.22 | \$1.43 | \$1.52 | $\$ 1.60$ | \$1.70 | \$1.79 | \$1.90 | \$2.01 | \$2.12 | 52.25 | \$2.38 | \$49.32 | 10.92\% |
| (\$25.76) | \$1.06 | $\$ 1.11$ | \$1.16 | \$1.21 | \$1.40 | \$1.48 | \$1.57 | \$1.66 | \$1.76 | \$1.86 | \$1.96 | \$2.08 | \$2.20 | \$2,33 | \$60.13 | 9.84\% |
| (841.53) | \$1.38 | \$1.57 | \$1.78 | \$2.01 | \$2.54 | \$2.69 | \$2.84 | \$3.01 | \$3.18 | \$3.37 | \$3.56 | \$3.77 | 53.98 | \$4.21 | \$100.17 | 10.23\% |
| (852.99) | \$2.97 | 83.12 | \$3.26 | \$3.41 | \$3.66 | \$3.87 | \$4.09 | \$4.33 | \$4.58 | \$4.84 | \$5.12 | \$5.42 | \$5.73 | \$6.06 | \$123.00 | 11.04\% |
| (\$53.98) | \$1.46 | \$1.56 | \$1.67 | \$1.78 | \$2.94 | \$3.11 | \$3.29 | \$3.48 | \$3.69 | \$3.90 | \$4.12 | \$4.36 | \$4.62 | \$4.88 | \$131.75 | 9.67\% |
| (\$19.84) | \$1.10 | \$1.07 | \$1.04 | \$1.01 | \$1.01 | \$1.07 | \$1.13 | \$1.20 | \$1.27 | \$1.34 | \$1.42 | \$1.50 | \$1.59 | \$1.68 | \$44.38 | 9.72\% |
| (\$41.51) | \$1.84 | \$1.79 | $\$ 1.73$ | $\$ 1.67$ | \$2.31 | \$2.44 | \$258 | \$2.73 | \$2.89 | \$3.06 | \$3.23 | \$3.42 | \$3.62 | \$3,83 | \$97.63 | 9.90\% |
| (\$47.55) | \$2.17 | \$2.32 | \$2.49 | \$2.67 | \$2.86 | \$3.02 | \$3.20 | 83.38 | \$3.58 | \$3.78 | \$4.00 | \$4.23 | \$4.48 | \$4.74 | \$110.66 | 10.30\% |
| (\$24.94) | \$1.01 | \$1.06 | \$1.11 | \$1.17 | \$1.57 | $\$ 1.66$ | 81.75 | \$1.85 | \$1.96 | \$2.07 | \$2.19 | \$2.32 | \$2.45 | \$2.60 | \$59.81 | 10.38\% |
| (\$44.77) | \$1.94 | \$1.98 | \$2.01 | \$2.04 | \$2.40 | \$2.54 | \$2.69 | \$2.84 | \$3.01 | \$3.18 | \$3.36 | \$3.56 | \$3.76 | \$3.98 | \$104.02 | 9.79\% |
| (\$57.02) | \$2.04 | \$2.13 | \$2.23 | \$2.33 | \$3.85 | \$4.07 | \$4.31 | \$4.55 | \$4.82 | \$5.10 | \$5.39 | \$5.70 | \$6.03 | \$6.38 | \$140.89 | 10.61\% |
| (\$44.93) | \$1.98 | \$2.04 | \$2.11 | \$2.18 | \$2.22 | \$2.35 | \$2.48 | \$2.63 | \$278 | \$2.94 | \$3.11 | \$3.29 | \$3.48 | \$3.68 | \$102.45 | 9.52\% |
| (\$18.29) | $\$ 0.87$ | \$0.92 | \$0.96 | \$1.01 | $\$ 112$ | \$1.18 | \$1.25 | \$1.32 | \$1.40 | $\$ 1.48$ | \$1.56 | \$1.65 | \$1,75 | $\$ 1.85$ | \$42.57 | 10.38\% |
| (\$34.91) | \$1.70 | 81.72 | \$1.73 | \$1.75 | $\$ 1.68$ | \$1.78 | \$1.89 | \$1.99 | \$2.11 | \$2.23 | \$2.36 | \$2.50 | \$2.64 | \$2.79 | \$78.45 | 9.48\% |
| (\$29.31) | $\$ 1.32$ | \$1.36 | \$1.41 | \$1.46 | \$1.46 | \$1.55 | \$1.64 | \$1.73 | \$1.83 | \$1.94 | \$2.05 | \$2.17 | \$2.29 | \$2.42 | \$66.69 | 9.57\% |
| (\$28.20) | $\$ 1.42$ | \$1.43 | \$1.43 | \$1.43 | \$1.71 | \$1.81 | \$1.92 | \$2.03 | \$2.14 | \$2.27 | \$2.40 | \$2.54 | \$2.68 | \$2.84 | \$65.71 | 10.35\% |
| (534.45) | \$1.16 | \$130 | \$1.45 | \$1.61 | \$1.92 | \$2.03 | \$2.15 | \$2.27 | \$2.40 | \$2.54 | \$2.69 | \$284 | \$3.01 | $\$ 3.18$ | \$81.81 | 9.86\% |
| (\$26.75) | \$1.00 | \$1.08 | \$1.17 | \$1.26 | \$141 | \$1.49 | 81.57 | 81.66 | \$1.76 | \$1.86 | \$1.97 | \$2.08 | \$2.20 | \$2.33 | \$62.48 | 9.68\% |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 9.99\% |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 9.88\% |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 9.24\% |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 11.44\% |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.38\% |


| Case 12-E-0201 \& 12-G.0202 |  |  |  | MISMATCE Of heverts's Sum of present values and initial prices using his discount rates(Investor Cash Fows Per Company Wimess) |  |  |  |  |  |  |  |  |  |  |  |  | Exhibit_(KXD-27) |  | page 7 of 19 Mr.Heverts Discount Rate |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Sum ofpV | Initial Price | NPV |  |
| Allete | \$1.50 | \$1.40 | \$1.30 | 51.21 | $\$ 1.25$ | \$1.21 | $\$ 1.16$ | \$1.12 | \$108 | \$1.04 | \$1.00 | \$0.96 | \$0.93 | \$0.89 | \$23.49 | 39.55 | \$41.41 | \$1.85 | 9.81\% |
| Alliant Energy Corp | \$1.80 | $\$ 1.71$ | \$1.63 | \$1.55 | \$1.54 | \$1.47 | \$1.41 | \$1.34 | \$1.28 | \$1.22 | \$1.17 | \$1.12 | \$1.07 | \$1.02 | \$21.65 | 40.88 | \$43.08 | 52.10 | 10.76\% |
| Ameren Corp. | \$1.79 | \$1.69 | \$1.59 | \$1.50 | \$1.33 | \$1.25 | \$1.18 | \$1.12 | \$1.05 | \$0.99 | 50.94 | \$0.89 | \$0.84 | 50.79 | \$13,34 | 30.27 | \$32.01 | \$1.74 | 12.05\% |
| American Electric Power | \$1.49 | \$1.38 | \$1.28 | \$1.19 | \$1.36 | \$1.30 | \$1.25 | 51.20 | \$1.15 | $\$ 1.10$ | \$1.05 | \$1.01 | \$0.97 | 50.93 | \$21.31 | 37.96 | 539.84 | \$1.88 | 1030\% |
| Avista Corp. | \$1.04 | \$1.00 | 50.97 | \$0.93 | \$0.87 | 50.83 | \$0.79 | \$0.76 | \$0.73 | \$0.70 | S0.67 | \$0.64 | \$0.61 | 50.58 | \$13.06 | 24.17 | \$25.38 | \$1.21 | 10.51\% |
| Black Milts Corp. | $\$ 1.25$ | \$1.18 | \$1.10 | \$1.03 | \$1.01 | 50.88 | \$0.94 | \$0.91 | \$0.87 | \$0.84 | \$0.81 | \$0.78 | so. 75 | \$0.73 | \$19.11 | 32.29 | \$33.81 | \$1.51 | 9.80\% |
| Center Point Energy | 50.69 | \$0.66 | \$0.63 | 50.61 | \$0.58 | \$0.56 | \$0.54 | \$0.52 | \$0.50 | \$0.48 | \$0.46 | \$0.45 | \$0.43 | \$0.41 | \$10.75 | 18.29 | \$19.15 | \$0.86 | 9.85\% |
| Cleso Corp. | \$1.18 | \$1.17 | \$1.16 | \$1.15 | \$1.23 | \$1.19 | 81.14 | \$1.10 | \$1.0s | \$1.01 | 50.97 | \$0.94 | 50.90 | 50.87 | \$21.49 | 36.55 | \$38.30 | \$1.75 | 10.04\% |
| Consolidated Edison | \$2.19 | \$2,03 | \$1.88 | \$1.74 | 81.77 | \$1.71 | \$1.64 | \$1.58 | 81.53 | \$1.47 | \$1.42 | \$1.37 | \$1.32 | 81.27 | 833.62 | 56.53 | \$59.17 | \$2.64 | 9.77\% |
| Dominion Resources, lna | \$1.77 | \$1.68 | \$1.59 | \$1.91 | \$1.49 | \$1.44 | 81.39 | \$1.34 | \$1.29 | \$1.24 | S1.20 | \$1.16 | \$1.12 | 81.08 | \$29.42 | 48.71 | \$50.96 | \$2.25 | 9.66\% |
| DTE Energy Co. | 5231 | 52.18 | \$2.05 | \$1.93 | \$1.93 | \$1.84 | \$1.76 | 51.68 | 81.61 | 51.59 | \$1.47 | 81.40 | \$1.34 | $\$ 1.28$ | \$27.12 | 51.44 | \$54.08 | \$2.64 | 10.76\% |
| Edison International | \$1.45 | \$1.33 | \$1.23 | $\$ 1.13$ | \$1.52 | \$1.45 | \$1.38 | $\$ 1.32$ | \$1.26 | $\$ 1.21$ | \$1.15 | \$1.10 | \$1.05 | \$1.01 | 52173 | 39.34 | \$41.35 | \$2.01 | 10.69\% |
| Great Plains Energy Inc. | 50.91 | \$0.87 | \$0.83 | 50.79 | \$0.83 | \$0.79 | \$0.75 | \$0.71 | \$0.68 | \$0.64 | 50.61 | \$0.58 | \$0.5s | \$0.52 | \$9.68 | 19.73 | \$20.81 | \$1.08 | 11.46\% |
| Hawaian Electria | \$0.90 | 50.91 | \$0.86 | \$0.82 | \$0.86 | \$0.82 | \$0.79 | $\$ 0.76$ | \$0.73 | \$0.70 | \$0.67 | \$0.64 | \$0.62 | \$0.59 | $\$ 13.83$ | 24.55 | \$25.76 | \$1.21 | 10.29\% |
| DACORP, Inc. | \$1.25 | \$1.28 | \$1.31 | \$134 | \$1.53 | \$1.46 | \$1.39 | \$1.33 | 81.27 | \$1.22 | \$1.16 | \$1.11 | \$1.06 | \$1.01 | \$21.78 | 39.51 | 541.53 | \$2.02 | 10.71\% |
| Integrys | \$2.66 | \$2.50 | \$2.35 | \$2.20 | \$2.11 | \$2.00 | \$1.90 | \$1.80 | 81.70 | \$1.62 | 81.53 | \$1.45 | \$1.38 | \$1.30 | \$23.71 | 50.21 | \$52.99 | \$2.78 | 11.60\% |
| OGE Energy | \$1.33 | \$1.29 | \$1.25 | \$1.21 | \$1.82 | \$1.75 | \$1.68 | \$1.61 | \$1.55 | \$1.49 | \$1.43 | \$1.38 | \$1.32 | 81.27 | 531.12 | 51.50 | \$53.98 | \$2.48 | 10.10\% |
| Pepco Holdings, Inc. | \$1.00 | \$0.88 | 50.78 | \$0.69 | \$0.62 | 50.60 | \$0.57 | 50.55 | \$0.53 | \$0.51 | \$0.49 | \$0.47 | 50.45 | \$0.43 | \$10.35 | 18.92 | \$19.84 | \$0.92 | 10.19\% |
| PGEE Corp | \$1.67 | \$1.47 | \$1.29 | \$1.13 | \$1.41 | \$1.35 | \$1.30 | \$1.24 | 81.19 | \$1.14 | \$1.09 | \$1.05 | \$1.00 | \$0.96 | \$22.26 | 39.55 | \$41.51 | \$1.96 | 10.36\% |
| Pinnacie West Capital | \$1.95 | \$1.89 | \$1.83 | 81.77 | \$1.71 | \$1.63 | \$1.56 | \$1.49 | 81.42 | 81.36 | \$1.30 | \$1.24 | \$1.18 | 81.13 | \$23.76 | 45.22 | \$47.55 | \$2.33 | 10.80\% |
| Portand General | 50.91 | 50.86 | 50.82 | \$0.78 | \$0.93 | \$0.89 | 50.85 | \$0.81 | \$0.77 | \$0.74 | 50.70 | \$0.67 | \$0. 64 | 50.61 | \$12.71 | 23.71 | \$24.94 | \$1.23 | 10.87\% |
| scana Corp. | \$1.76 | \$1.63 | \$1.50 | 51.38 | \$1.47 | \$1.41 | \$1.36 | \$1.30 | \$1.25 | \$1.20 | \$1.15 | \$1.10 | \$1.06 | \$1.02 | \$2408 | 42.68 | \$44,77 | \$2.09 | 10.25\% |
| Sempra Enetrgy | \$1.84 | \$1.73 | \$1.63 | \$1.53 | \$2.27 | \$2.16 | \$2.06 | \$1.96 | 81.87 | 81.78 | \$1.69 | \$1.61 | \$1.53 | 81.46 | \$29.03 | 54.16 | \$57.02 | \$2.87 | 11.11\% |
| Southern Co. | 51.80 | \$1.69 | \$1.59 | \$1.49 | \$1.38 | \$1.33 | \$1.28 | \$1.23 | \$1.18 | \$1.14 | \$1.09 | \$1.05 | \$1.01 | \$0.97 | \$24.65 | 42.88 | $\$ 44.93$ | $\$ 2.04$ | 9.96\% |
| TECOEnergy, Inc. | \$0.79 | \$0.75 | 50.71 | \$0.67 | \$0.67 | \$0.64 | \$0.61 | \$0.58 | \$0.55 | \$0.33 | 50.50 | \$0.48 | \$0.46 | \$0.44 | \$9.04 | 17.39 | \$18.29 | \$0.90 | 10.88\% |
| UIL Holdings Corp. | \$1. 55 | \$1.42 | \$1.30 | \$1.20 | \$1.05 | \$1.01 | \$0,97 | \$0.94 | \$0.90 | S0.87 | \$0.83 | \$0.80 | \$0.77 | \$0.74 | \$18.98 | 33.33 | \$34.91 | \$1.58 | 9.92\% |
| Vectren Corp. | \$1.20 | 81.13 | \$1.06 | $\$ 1.00$ | \$0.91 | \$0.87 | \$0.84 | \$0.81 | \$0.78 | \$0.75 | 50.72 | \$0.69 | \$0,66 | \$0.64 | \$15.93 | 27.97 | \$29.31 | \$1.34 | 10.01\% |
| Westar Energy | \$1.28 | $\$ 1.16$ | \$1.05 | 50.94 | \$1.02 | \$0.98 | \$0.93 | \$0.89 | 50.85 | \$0.81 | \$0.77 | \$0.74 | \$0.70 | \$0.67 | \$14.01 | 26.81 | 528.20 | \$1.39 | 10.85\% |
| Wisconsin Erergy | \$1.05 | \$1.07 | \$1.08 | \$1.09 | 81.17 | \$1.13 | \$1.98 | \$1.03 | \$0.99 | \$0.95 | \$0,91 | \$0,87 | \$0.84 | \$0.80 | \$18.76 | 32.83 | \$34.45 | \$1.62 | 1032\% |
| Xcel Energy, Inc. | 50.91 | \$0.89 | 50.87 | 50.86 | 50.87 | 50.83 | \$0.80 | 50.77 | \$0,74 | \$0.71 | \$0.68 | \$0.65 | \$0.63 | 50.60 | \$14.70 | 25.52 | 526.75 | \$1.23 | 10.13\% |
| MEAN: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 10.46\% |
| medlan: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 10.34\% |
| MIN: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 9.66\% |
| MAX: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 12.05\% |


|  | Case 12-E-0201 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Exhibit (KXD-27) <br> page 8 of 19 <br> Staff <br> Discount Rate |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | STAFP approach using present value (py)approach: initlal prices match with sum of present values (Investor Cash Hows Per Company Witness) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 1 | 2 | 3 | ( | , |  | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Sum ofpy | Initial | P: NPV |  |
| Allete | \$1.51 | \$1.41 | \$1.32 | $\$ 1.23$ | \$1.28 | \$1.23 | \$1.19 | 81.15 | \$1.12 | $\$ 1.08$ | \$1.04 | \$1.01 | \$0.98 | 50.94 | \$24.91 | 41.41 | \$41.41 | \$0.00 | 9.38\% |
| Alliant Energy Corp. | \$1.81 | \$1.73 | \$1.65 | \$1.57 | \$1.58 | \$1.51 | \$1.45 | 81.39 | \$1.33 | \$1.28 | 51.23 | \$1.18 | \$1.13 | \$1.08 | \$23.15 | 43.08 | \$43.08 | (50.00) | 10.27\% |
| Ameren Corp. | \$1.80 | $\$ 1.71$ | \$1.62 | \$1.53 | \$1.36 | \$1.29 | $\$ 1.23$ | \$1.16 | \$1.11 | $\$ 1.05$ | \$1.00 | \$0.95 | \$0.90 | \$0.85 | \$14.47 | 32.01 | 532.01 | (50.0) | 11.44\% |
| American Electric Power | \$1.49 | \$1.39 | \$1.30 | $\$ 1.21$ | \$1.39 | \$1.34 | 51.29 | \$1.24 | \$1.19 | \$1.15 | \$1.10 | \$1.06 | \$1.02 | 50.98 | \$22.69 | 39.84 | S39.84 | \$0.00 | 9.93\% |
| Avista Corp. | \$1.05 | \$1.01 | \$0.98 | \$0.95 | \$0.88 | \$0.85 | \$0.82 | 50.79 | \$0.76 | 50.73 | \$0.70 | 80.67 | \$0.65 | \$0.62 | \$13.94 | 25.38 | \$25.38 | \$0.00 | 10.03\% |
| Black Hills Corp. | \$1.26 | \$1.18 | \$1.12 | \$1.05 | \$103 | \$1.00 | \$0.97 | 50.94 | \$0.90 | 50.88 | \$0.85 | \$0.82 | S0. 79 | 50.77 | \$20.26 | 33.81 | \$33.81 | \$0.00 | 9.37\% |
| Center Point Energy | 50.69 | 50.67 | \$0.64 | \$0.61 | \$0.59 | \$0.57 | \$0.56 | \$0.54 | \$0.52 | \$0.50 | \$0.48 | 50.47 | \$0.45 | 50.44 | \$11.4] | 19.15 | \$19.15 | \$0.00 | 9.43\% |
| Clemo Corp. | \$1.19 | \$1.18 | \$1.18 | \$1.17 | \$1.26 | \$1.22 | \$1.17 | \$1.13 | \$1.09 | \$1.05 | \$1.02 | 50.98 | \$0.95 | 50.91 | \$22.81 | 38.30 | \$38.30 | \$0.00 | 9.60\% |
| Consolidated Edison | \$2.19 | \$2.04 | \$1.90 | \$1.77 | \$1.81 | \$1.75 | 5169 | \$1.63 | \$1.58 | \$1.53 | \$1.48 | \$1.43 | \$1.38 | \$1.34 | \$35.64 | 59.17 | \$59.17 | (50.00) | 9.35\% |
| Dominion Resources, Inc. | \$1.78 | \$1.69 | \$1.61 | \$1.54 | \$1.52 | \$1.47 | \$1.42 | \$1.38 | 81.33 | 51.29 | \$1.25 | \$1.21 | $\$ 1.17$ | \$1.14 | \$31.15 | 50.96 | \$50.96 | (50.00) | 9.24\% |
| DTE Energy Co . | \$2.33 | 52.20 | \$2.08 | \$1.97 | 81.97 | \$1.89 | \$1.82 | \$1.74 | $\$ 1.67$ | \$1.60 | \$1.54 | \$1.48 | \$1.42 | \$1.36 | \$29.01 | 54.08 | \$54.08 | ( 50,00 ) | 1026\% |
| Edison International | \$1.45 | \$1.35 | \$1.25 | \$1.15 | \$1.55 | \$1.49 | \$1.43 | \$1.37 | \$1.31 | \$1.26 | \$1.21 | \$1.16 | \$1.12 | \$1.07 | \$23.18 | 41.35 | \$41.35 | (\$0.00) | 10.21\% |
| Great Plains Energy Inc. | \$0.91 | 50.87 | \$0.84 | 50.80 | \$0.85 | \$0.81 | \$0.78 | \$0.74 | \$0.71 | $\$ 0.67$ | \$0.64 | \$0.61 | \$0.58 | 50.56 | \$10.42 | 20.81 | \$20.81 | (50.00) | 10.92\% |
| Hawaiian Electric | $\$ 0.97$ | \$0.92 | \$0.87 | \$0.83 | \$0.88 | \$0.84 | \$0.81 | \$0.78 | 50.75 | 50.73 | 50.70 | \$0.67 | \$0.65 | \$0.63 | \$14.72 | 25.76 | \$25.76 | \$0.00 | 9.84\% |
| DACORP, Inc. | \$1.25 | \$1.30 | \$1.33 | \$1.36 | $\$ 1.56$ | \$1.50 | $\$ 1.44$ | \$1.38 | \$1.32 | \$1.27 | \$1.22 | \$1.17 | \$1.12 | \$1.08 | \$23.23 | 41.53 | \$41,53 | (\$0.00) | 10.23\% |
| Integry | \$2.68 | 52.53 | \$2.38 | \$2.24 | \$2.17 | 52.06 | \$1.97 | \$1.87 | \$1.78 | 51.70 | \$1.62 | \$1.54 | \$1.47 | \$1.40 | \$25.58 | 52.99 | \$52.99 | (50.00) | 11.04\% |
| OGE Energy | \$1,33 | \$1.30 | \$1.26 | $\$ 1.23$ | \$1.86 | \$1.79 | $\$ 1.73$ | \$1.67 | 51.61 | \$1.55 | \$1,49 | \$1.44 | 51.39 | \$1.34 | 533.00 | 53.98 | \$53.98 | \$0.00 | 9.67\% |
| Pepco Holdings, Inc. | 81.00 | \$0.89 | 80.79 | \$0.70 | \$0.64 | 50.61 | \$0.59 | 50.57 | \$0.55 | 50.53 | \$0.51 | \$0.49 | 50.47 | \$0.46 | \$11.03 | 19.84 | \$19.84 | \$0.00 | 9.72\% |
| PG\&E COTP | $\$ 1.67$ | \$1.48 | \$1.31 | \$1.14 | \$1.44 | \$1.39 | \$1.33 | \$1.28 | \$1.24 | \$1.19 | \$1.14 | \$1.10 | \$1.06 | $\$ 1.02$ | \$23.70 | 41.51 | \$41.51 | \$0.00 | 9.90\% |
| Pirnacle West Capital | \$1.96. | 51.91 | \$1.86 | \$1.81 | \$1.75 | \$1.68 | \$1.61 | $\$ 1.54$ | \$1.48 | \$1.42 | \$1.36 | $\$ 1.31$ | \$1.25 | 81.20 | \$25.42 | 47.55 | \$47.55 | (50.00) | 10.30\% |
| Porcland General | 50.91 | \$0.87 | \$0.83 | \$0.79 | \$0.96 | 50.92 | 50.88 | \$0.84 | \$0.81 | 50.77 | \$0.74 | 80.71 | \$0.68 | \$0.65 | \$13.59 | 24.94 | \$24.94 | (50.00) | 10.38\% |
| SCANA Corp. | \$1.77 | \$1.64 | \$1.52 | \$1.41 | \$1.50 | $\$ 1.45$ | \$1.40 | $\$ 1.35$ | 81.30 | \$1.25 | \$1.20 | \$1.16 | $\$ 1.12$ | \$1.08 | \$25.63 | 44.77 | \$44.77 | \$0.00 | 979\% |
| Sempra Energy | \$1.84 | \$1.74 | \$1.65 | \$1.56 | \$2.32 | \$2.22 | \$2.13 | \$2.03 | \$1.94 | \$1.86 | \$1.78 | \$1.70 | \$1.63 | \$1.56 | \$31.06 | 57.02 | \$57.02 | (50.00) | 10.61\% |
| Southem Co. | \$1.80 | \$1.70 | \$1.61 | \$1.51 | \$1.41 | \$1.36 | \$1.31 | \$1.27 | \$1.23 | \$1.18 | \$1.14 | \$1.10 | \$1.07 | \$1.03 | 526.19 | 44.93 | \$44.93 | ( 50.00 ) | 9.52\% |
| TECO Energy, Inc. | \$0.79 | 50.75 | 50.72 | \$0.68 | \$0.68 | \$0.65 | \$0.63 | \$0.60 | 80.57 | 50.55 | \$0.53 | \$0.51 | 50.48 | 50.46 | \$9.68 | 18.29 | \$18.29 | (50.00) | 10.38\% |
| Un. Holdings Corp. | \$1.55 | \$1.43 | \$1.32 | \$1.22 | \$1.07 | \$1.04 | \$1.00 | 80.97 | \$0.93 | \$0.90 | 50.87 | \$0.84 | \$0.81 | 50.79 | \$20.17 | 34.91 | \$34.91 | \$0.00 | 9.48\% |
| Veetren Corp. | \$1.20 | \$1.14 | \$1.07 | \$1.01 | \$0.93 | \$0.89 | \$0.86 | \$0.83 | \$0.80 | \$0.78 | \$0.75 | 50.72 | \$0.70 | $\$ 0.67$ | \$16.94 | 29.31 | \$2931 | \$0.00 | 9.57\% |
| Westar Energy | \$1.28 | \$1.17 | \$1.06 | \$0.96 | \$1.05 | \$1.00 | \$0.96 | \$0.92 | \$0.88 | \$0.85 | $\$ 0.81$ | \$0.78 | \$0.75 | \$0.72 | \$15.00 | 28.20 | \$28.20 | (\$000) | 10.35\% |
| Wisconsin Energy | \$1.06 | \$1.08 | \$1.09 | \$1.11 | \$1.20 | \$1.15 | \$1.11 | \$1.07 | 81.03 | 50.99 | \$0.95 | \$0.92 | \$0.88 | \$0.85 | \$19.95 | 34.45 | $\$ 34.45$ | (50.00) | 9.86\% |
| Xcel Energy, Inc. | 50.91 | 50.90 | 50.89 | \$0.87 | \$0.89 | 30.85 | \$0.82 | 50.79 | 50.77 | 50.74 | \$0.71 | 50.69 | \$0.66 | \$0.64 | \$15.62 | 26.75 | \$26.75 | 50.00 | 9.68\% |
| MEAN: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 9.99\% |
| median: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 9.88\% |
| MIN: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 9.24\% |
| MAX: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 11.44\% |


| Inputs | [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | [9] | [10] | [11] |  | page 9 of 19 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Stock | EPS | GDP |  | Ratio |  |  | Solver Cells | Near Term | Interm. | Long Term |  |  |
| Company | Price | Growth | Growth | 2012 | 2015 | 2022 | Delta | ROE Per Company | Growth | Growth | Growth | Per Staff | Outlier labelling |
| Allete | \$41.41 | $5.33 \%$ | 5.77\% | 68.00\% | 62.00\% | 66.78\% | \$0.00 | 9.73\% | 5.33\% | 5.55\% | 5.77\% | 9.31\% |  |
| Alliant Energy Corp. | \$43.08 | 5.75\% | 5.77\% | 65.00\% | 64.00\% | 66.78\% | \$0.00 | 10.72\% | 5.75\% | 5.76\% | 5.77\% | 10.23\% |  |
| Ameren Corp. | \$32.01 | 4.00\% | 5.77\% | 67.00\% | 70.00\% | 66.78\% | \$0.00 | 11.88\% | 4.00\% | 4.88\% | 5.77\% | 11.28\% | OUTLIER |
| American Electric Power | \$39.84 | 4.27\% | 5.77\% | 58.00\% | 55.00\% | 66.78\% | \$0.00 | 10.17\% | 4.27\% | 5.02\% | 5.77\% | 9.72\% |  |
| Avista Corp. | \$25.38 | 4.40\% | 5.77\% | 64.00\% | 68.00\% | 66.78\% | \$0.00 | 10.39\% | 4.40\% | 5.08\% | 5.77\% | 9.92\% |  |
| Black Hills Corp. | \$33.81 | 6.50\% | 5.77\% | 73.00\% | 66.00\% | 66.78\% | \$0.00 | 9.83\% | 6.50\% | 6.13\% | 5.77\% | 9.40\% |  |
| Center Point Energy | \$19.15 | 4.53\% | 5.77\% | 65.00\% | 66.00\% | 66.78\% | \$0.00 | 9.75\% | 4.53\% | 5.15\% | 5.77\% | 9.32\% |  |
| Cleco Corp. | \$38.30 | 4.50\% | 5.77\% | 52.00\% | 59.00\% | 66.78\% | \$0.00 | 9.88\% | 4.50\% | 5.13\% | 5.77\% | 9.46\% |  |
| Consolidated Edison | \$59.17 | 3.43\% | 5.77\% | 65.00\% | 62.00\% | 66.78\% | \$0.00 | 9.56\% | 3.34\% | 4.60\% | 5.77\% | 9.15\% |  |
| Dominion Resources, Inc. | \$50.96 | 5.07\% | 5.77\% | 67.00\% | 65.00\% | 66.78\% | \$0.00 | 9.58\% | 3.41\% | 5.42\% | 5.77\% | 9.17\% |  |
| DTE Energy Co. | \$54.08 | 4.32\% | 5.77\% | 63.00\% | 63.00\% | 66.78\% | \$0.00 | 10.59\% | 4.32\% | 5.04\% | 5.77\% | 10.10\% |  |
| Edison International | \$41.35 | 2.00\% | 5.77\% | 46.00\% | 46.00\% | 66.78\% | \$0.00 | 10.20\% | 2.00\% | 3.88\% | 5.77\% | 9.76\% |  |
| Great Plains Energy Inc. | \$20.81 | 5.80\% | 5.77\% | 59.00\% | 60.00\% | 66.78\% | \$0.00 | 11.39\% | 5.80\% | 5.78\% | 5.77\% | 10.85\% |  |
| Hawaiian Electric | \$25.76 | 9.62\% | $5.77 \%$ | 73.00\% | 63.00\% | 66.78\% | \$0.00 | 10.58\% | 9.62\% | 7.69\% | 5.77\% | 10.11\% |  |
| IDACORP, Inc. | \$41.53 | 4.33\% | 5.77\% | 43.00\% | 55.00\% | 66.78\% | \$0.00 | 10.48\% | 4.33\% | 5.05\% | 5.77\% | 10.02\% |  |
| Integrys | \$52.99 | 9.13\% | 5.77\% | 77.00\% | 68.00\% | 66.78\% | \$0.00 | 11.94\% | 9.13\% | 7.45\% | 5.77\% | 11.36\% | OUTLIER |
| OGE Energy | \$53.98 | 6.68\% | 5.77\% | 43.00\% | 43.00\% | 66.78\% | \$0.00 | 10.01\% | 6.68\% | 6.22\% | 5.77\% | 9.60\% |  |
| Pepco Holdings, Inc. | \$19.84 | 3.40\% | 5.77\% | 83.00\% | 69.00\% | 66.78\% | \$0.00 | 10.00\% | 3.40\% | 4.58\% | 5.77\% | 9.54\% |  |
| PG\&E Corp | \$41.51 | 3.44\% | 5.77\% | 61.00\% | 50.00\% | 66.78\% | \$0.00 | 10.04\% | 3.44\% | 4.60\% | 5.77\% | 9.60\% |  |
| Pinnacle West Capital | \$47.55 | 5.63\% | 5.77\% | 63.00\% | 66.00\% | 66.78\% | \$0.00 | 10.77\% | 5.63\% | $5.70 \%$ | 5.77\% | 10.27\% |  |
| Portland General | \$24.94 | 5.92\% | 5.77\% | 54.00\% | 53.00\% | 66.78\% | \$0.00 | 10.76\% | 5.92\% | 5.84\% | 5.77\% | 10.28\% |  |
| SCANA Corp. | \$44.77 | 3.89\% | 5.77\% | 63.00\% | 59.00\% | 66.78\% | \$0.00 | 10.03\% | 3.17\% | 4.83\% | 5.77\% | 9.59\% |  |
| Sempra Energy | \$57.02 | 6.18\% | 5.77\% | 45.00\% | 43.00\% | 66.78\% | \$0.00 | 10.92\% | 6.18\% | 5.97\% | 5.77\% | 10.45\% |  |
| Southern Co. | \$44.93 | 5.28\% | 5.77\% | 73.00\% | 69.00\% | 66.78\% | \$0.00 | 9.92\% | $5.80 \%$ | 5.52\% | 5.77\% | 9.48\% |  |
| TECO Energy, Inc. | \$18.29 | 5.64\% | 5.77\% | 65.00\% | 64.00\% | 66.78\% | \$0.00 | 10.83\% | 6.74\% | 5.70\% | 5.77\% | 10.33\% |  |
| ULL Holdings Corp. | \$34.91 | 4.03\% | 5.77\% | 79.00\% | 72.00\% | 66.78\% | \$0.00 | 9.80\% | 4.03\% | 4.90\% | 5.77\% | 9.36\% |  |
| Vectren Corp. | \$29.31 | 4.93\% | 5.77\% | 73.00\% | 70.00\% | 66.78\% | \$0.00 | 9.95\% | 4.93\% | 5.35\% | 5.77\% | 9.51\% |  |
| Westar Energy | \$28.20 | 6.08\% | 5.77\% | $70.00 \%$ | 59.00\% | 66.78\% | \$0.00 | 10.80\% | 6.08\% | 5.92\% | 5.77\% | 10.31\% |  |
| Wisconsin Energy | \$34.45 | 6.93\% | 5.77\% | 53.00\% | 60.00\% | 66.78\% | \$0.00 | 10.36\% | 6.93\% | 6.35\% | 5.77\% | 9.90\% |  |
| Xeel Energy, Inc. | \$26.75 | 5.12\% | 5.77\% | 58.00\% | 63.00\% | 66.78\% | \$0.00 | 10.04\% | 5.12\% | 5.44\% | 5.77\% | 9.60\% |  |
| MEAN: |  | $5.21 \%$ | 5.77\% | 62.93\% | 61.07\% | $66.78 \%$ |  | 10.36\% | 5.18\% | 5.48\% | 5.77\% | 9.90\% |  |
| MEDIAN: |  |  |  |  |  |  |  | 10.18\% |  |  |  | 9.74\% |  |
| MIN: |  |  |  |  |  |  |  | 9.56\% |  |  |  | 9.15\% |  |
| MAX |  |  |  |  |  |  |  | 11.94\% |  |  |  | 11.36\% |  |
| MAD |  |  |  |  |  |  |  | 0.39\% |  |  |  |  |  |
| SD |  |  |  |  |  |  |  | 0.62\% |  |  |  |  |  |


| Case 12-E-0201 \& 12-G-0202 <br> Earaings per Share | [12] | [13] | [14] | [15] | [16] | [17] | [18] | [19] | [20] | [21] | [22] | [23] | [24] | [25] | [26] | $\begin{gathered} \text { Exhibit_(KXD-27) } \\ {[27]} \end{gathered}$ | page 10 of 19 <br> [28] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Company | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
| Allete | \$2.19 | \$2.31 | \$2.43 | \$2.56 | \$2.70 | \$2.84 | \$2.99 | \$3.15 | \$3.33 | \$3.51 | \$3.71 | \$3.92 | \$4.14 | \$4.38 | \$4.64 | \$4.90 | \$5.19 |
| Alliant Energy Corp. | $\$ 2.75$ | \$2.91 | \$3.08 | \$3.25 | $\$ 3.44$ | \$3,64 | \$3.85 | \$4.07 | \$4.30 | \$4.55 | \$4.81 | \$5.09 | \$5.38 | \$5.69 | \$6.02 | \$6.37 | \$6.73 |
| Ameren Corp. | \$2.77 | \$2.88 | \$3.00 | \$3.12 | \$3.24 | \$3.37 | \$3.50 | \$3.66 | \$3.82 | \$4.01 | \$4.22 | \$4.45 | \$4.70 | \$4.98 | \$5.26 | \$5.57 | \$5.89 |
| American Electric Power | \$2.60 | \$2.71 | \$2.83 | \$2.95 | 53.07 | \$3.20 | \$3.34 | \$3.49 | \$3.66 | $\$ 3.84$ | \$4.04 | \$4.27 | \$4.51 | \$4.77 | \$5.05 | \$5.34 | \$5.65 |
| Avista Corp. | \$165 | $\$ 1.72$ | \$1.80 | 81.88 | \$1.96 | \$2.05 | \$2.14 | \$2.24 | \$2.34 | \$2.46 | \$2.59 | \$2.74 | \$2.90 | $\$ 3.06$ | \$3.24 | \$3.43 | \$3.62 |
| Black Hills Corp. | \$1.66 | \$1.77 | \$1.88 | \$2.01 | \$2.14 | \$2.27 | \$2.42 | \$2.58 | \$2.74 | \$2.91 | \$3.08 | \$3.26 | \$3.45 | \$3.65 | \$5.86 | \$4.08 | \$4.32 |
| Center Point Energy | $\$ 1.07$ | \$1.12 | \$1.17 | \$1.22 | 81.28 | \$1.34 | \$1.40 | \$1.46 | \$1.53 | \$1.61 | \$1.70 | \$1.79 | \$1.90 | \$2.01 | \$2.12 | \$2.25 | \$2.38 |
| Cleco Corp. | \$2.29 | \$239 | \$2.50 | \$2.61 | \$2.73 | \$2.85 | \$2.98 | \$3.12 | 83.28 | \$3.44 | \$3.63 | \$3.83 | \$4.05 | \$4.28 | \$4.53 | \$4.79 | \$507 |
| Consolidated Edison | \$3.47 | \$3.57 | \$3.69 | \$3.82 | 53.95 | \$4.09 | \$4.23 | \$4.39 | \$4.57 | \$4.78 | \$5.02 | \$5.29 | \$5.60 | \$5.92 | \$6.26 | 56.62 | \$7.00 |
| Dominion Resources, Inc. | \$2.89 | \$276 | \$2.90 | \$3.05 | 83.20 | \$3.36 | \$3.53 | \$3.72 | $\$ 3.92$ | \$4.13 | \$4.36 | \$4.60 | \$4.87 | \$5.15 | \$5.45 | \$5.76 | \$6.09 |
| DTE Energy Co | \$3.74 | \$3.90 | \$4.07 | \$4.25 | \$4.43 | \$4.62 | \$4.82 | \$5.04 | \$5.28 | \$555 | 55.84 | \$6.16 | \$6.52 | \$6.89 | \$7.29 | \$7.71 | \$8.16 |
| Edison International | \$3.35 | $\$ 3.42$ | \$3.49 | \$3.56 | 83.63 | \$3.70 | \$3.77 | \$3.87 | \$4.00 | \$4.15 | \$4.34 | \$4.56 | \$4.83 | \$5.10 | \$5.40 | \$5.71 | \$6.04 |
| Great Plains Energy Inc. | \$1.53 | \$162 | \$1.71 | \$1.81 | \$1.92 | \$2.03 | \$2.15 | \$2.27 | \$2.40 | \$2.54 | \$2.69 | \$2.84 | \$3.01 | \$3.18 | \$3.36 | \$3.56 | 53.76 |
| Hawaian Electric | \$1.21 | \$1.33 | \$1.45 | \$1.59 | \$1.75 | \$1.92 | \$2.10 | \$2.29 | \$2.48 | \$2.67 | \$286 | \$3.04 | \$3.22 | \$3.40 | \$3.60 | \$3.81 | \$4.03 |
| IDACORP, Inc. | \$2.95 | \$308 | \$3.21 | \$3.35 | 83.50 | \$3.65 | \$3.81 | \$3.98 | \$4.17 | \$4.38 | \$4.61 | \$4.87 | \$5.15 | \$5.45 | \$5.76 | \$6.09 | \$6.44 |
| Integrys | \$3.24 | \$3.54 | \$3.86 | \$4.21 | \$4.60 | \$5.02 | \$5.47 | \$5.94 | \$6.42 | \$6.90 | \$7.37 | \$7.84 | \$8.29 | \$8.77 | \$9.27 | \$9.81 | \$10.37 |
| OGE Energy | \$2.99 | \$3.19 | \$3.40 | \$3.63 | \$3.87 | \$4.13 | \$4.41 | \$4.70 | \$5.00 | \$5.31 | \$5.63 | \$5.96 | \$6.31 | \$6.67 | \$7.05 | \$7.46 | \$7.89 |
| Pepco Holdings, Inc. | \$124 | \$1.28 | \$1.33 | \$1.37 | \$1.42 | \$1.47 | \$1.52 | \$1.57 | \$1 64 | \$1.7) | \$1.80 | \$1.90 | $\$ 2.01$ | \$2.12 | \$2.24 | \$2.37 | \$2.51 |
| Pose Corp | \$2.82 | \$2.92 | \$3.02 | \$3.12 | 83.23 | \$3.34 | \$3.46 | \$3.59 | \$3.74 | \$3.91 | \$4.11 | \$4.33 | \$4.58 | \$4.84 | \$5.12 | \$5.41 | \$5.73 |
| Pinnacle West Capital | 83.08 | \$3.25 | \$3.44 | \$3.63 | \$3.83 | \$4.05 | \$4.28 | \$4.52 | \$4.78 | \$5.05 | \$5.34 | \$5.64 | \$5.97 | \$6.31 | \$6.68 | \$7.06 | \$7.47 |
| Portiand General | \$1.66 | \$1.76 | \$1.86 | \$1.97 | \$209 | \$2.21 | \$2.34 | \$2.48 | \$2.63 | \$2.78 | \$2.94 | \$3.11 | \$3.29 | \$3.48 | \$3.68 | \$3.90 | \$4.12 |
| SCANA Corp. | \$2.98 | \$2.97 | \$3.09 | \$3.21 | $\$ 3.33$ | \$3.46 | \$3.59 | \$3.75 | \$3.91 | \$4.10 | \$4.31 | \$4.55 | \$4.81 | \$5.09 | \$5.38 | \$5.69 | \$6.02 |
| Sempra Energy | \$4.02 | \$4.27 | \$4.53 | \$4.81 | $\$ 5.11$ | \$5.43 | \$5.76 | \$6.11 | \$6.48 | \$6.87 | \$7.28 | 87.70 | 88.15 | \$8.62 | \$9.11 | \$9.64 | \$10.19 |
| Southem Co . | \$2.37 | \$2.57 | \$2.71 | \$2.85 | \$3.00 | \$3.16 | \$3.32 | \$3.50 | \$3.69 | \$3.90 | \$4.12 | \$4.35 | \$4.60 | \$4.87 | \$5.15 | \$5.44 | \$5.76 |
| TECO Energy, Inc. | \$1.13 | \$1.27 | \$1.34 | \$1.42 | \$1.50 | \$1.58 | \$1.67 | \$1.77 | \$1.87 | \$1.97 | \$2.09 | \$2.20 | \$2.33 | \$2.47 | \$2.61 | \$2.76 | \$2.92 |
| ULL Holdings Corp. | \$1.99 | \$2.07 | \$2.15 | \$2.24 | \$2.33 | \$2.43 | \$2.52 | \$2.63 | \$2.75 | \$2.89 | \$3.04 | \$3.20 | \$3 39 | \$3.58 | \$3.79 | 54.01 | \$4.24 |
| Vectren Corp. | \$1.64 | \$1.72 | \$1.81 | \$1.89 | \$1.99 | \$2.09 | \$2.19 | \$2.30 | \$2.42 | \$2.55 | \$2.69 | \$2.84 | \$3.00 | \$3.18 | \$3.36 | \$3.56 | 53.76 |
| Westar Energy | \$1.80 | \$1.91 | \$2.03 | \$2.15 | \$2.28 | \$2.42 | \$2.56 | \$2.72 | \$2.88 | 53.05 | \$3.23 | 83.42 | \$3.62 | \$3.82 | \$4.05 | \$4.28 | \$4.53 |
| Wisconsin Energy | \$1.92 | \$2.05 | \$220 | \$2.35 | \$2.51 | \$2.68 | \$2.87 | \$3.06 | \$3.26 | \$3.47 | \$3.69 | \$3.91 | \$4.13 | \$4.37 | \$4.62 | \$489 | \$5.17 |
| Xcel Energy, Inc. | \$1.56 | \$1.64 | \$1.72 | \$1.81 | \$1.90 | \$2.00 | \$2.10 | \$2.21 | \$2.33 | \$2.46 | \$2.60 | \$2.74 | \$2.90 | \$3.07 | \$3.25 | \$3.43 | \$3.63 |


| Case 12-E-0201 \& 12-G-0202 Dividend Payout Ratio | [29] | $130]$ | 131 | [32] | [33] | THREE-STAGE DCF MODEL 3 MONTH AVERAGE PRICE |  |  |  |  |  |  |  | $\frac{\text { Exhibit_(KXD-27) }}{[42]}$ | $\begin{gathered} \text { page } 11 \text { of } 19 \\ {[43]} \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | [34] | [35] | [36] | [37] | [38] | [39] | [40] | [41] |  |  |
| Company | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
| Allete | 68.00\% | 66.00\% | 64.00\% | 62.00\% | 62.68\% | 63.37\% | 64.05\% | 64.73\% | 65.41\% | 66.10\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Alliant Energy Corp. | 65.00\% | 64,67\% | 64.33\% | 64.00\% | 64.40\% | 64.79\% | 65.19\% | 65.59\% | 65.98\% | 66.38\% | 66.78\%\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Ameren Corp. | 67.00\% | 68.00\% | 69.00\% | 70.00\% | 69.54\% | 69.08\% | 68.62\% | 68.16\% | 67.70\% | 67.24\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| American Electric Power | 58.00\% | 57.00\% | 56.00\% | 55.00\% | 56.68\% | 58.37\% | 60.05\% | 61.73\% | 63.41\% | 65.10\% | 66.78\% | 66.78\%/ | 66.78\% | 66.78\% | 66.78\% |
| Avista Corp. | 64.00\% | 65.33\% | 66.67\% | 68.00\% | 67.83\% | 67.65\% | 67.48\% | 67.30\% | 67.13\% | 66.95\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Black Hills Corp. | 73.00\% | 70.57\% | 68.33\% | 66.00\% | 66.11\% | 66.22\% | 66.33\% | 66,44\% | 66.56\% | 66.67\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Center Point Energy | 65.00\% | 65.33\% | 65.67\% | 66.00\% | 66.11\% | 66.22\% | 66.33\% | 66.44\% | 66.56\% | 66.67\% | 66.78\% | 66.78\% | 66.78\%\% | 66.78\% | 66.78\% |
| Cleco Corp. | 52.00\% | 54.33\% | 56.67\% | 59.00\% | 60.11\% | 61.22\% | 62.33\% | 63.44\% | 64.56\% | 65.6\%\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Consolidated Edison | 65.00\% | 64.00\% | 63.00\% | 62.00\% | 62.68\% | 63.37\% | 64.05\% | 64.73\% | 65.41\% | 66.10\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Dominion Resources, Inc. | 67.00\% | 66.33\% | 65.67\% | 65.00\% | 65.25\% | 65.51\%/4 | 65.76\% | 66.02\% | 66.27\% | 66.52\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| DTE Energy Co. | 63.00\% | 63.00\% | 63.00\% | 63.00\% | 63.54\% | 64.08\% | 64.62\% | 65.16\% | 65.70\% | 66.24\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Edison International | 46.00\% | 46.00\% | 46.00\% | 46.00\% | 48.97\% | 51.94\% | 54.91\% | 57.87\% | 60.84\% | 63.81\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Greai Plains Energy Inc. | 59.00\% | 59.33\% | 59.67\% | 60.00\% | 60.97\% | 61.94\% | 62.91\% | 63.87\% | 64.84\% | 65.81\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Hawaiian Electric | 73.00\% | 69.67\% | 66.33\% | 63.00\% | 63.54\% | 64.08\% | 64.62\% | 65.16\% | 65.70\% | 66.24\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| IDACORP, Inc. | 43.00\% | 47.00\% | 51.00\% | 55.00\% | 56.68\% | $58.37 \%$ | 60.05\% | 61.73\% | 63.41\% | 65.10\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Integrys | 77.00\% | 74.00\% | 71.00\% | 68.00\% | 67.83\% | 67.65\% | 67.48\% | 67.30\% | 67.13\% | 66.95\% | 66.78\%\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| OGE Energy | 43.00\% | 43.00\% | 43.00\% | 43.00\% | 46.40\% | 49.79\% | 53.19\% | 56,59\% | 59.98\% | 63.38\% | 6678\%\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Pepco Holdings, Inc. | 83.00\% | 78.33\% | 73.67\% | 69.00\% | 68.68\% | 68.37\% | 68.05\% | 67.73\% | 67.41\% | 67.10\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| PG\&E Corp | 61.00\% | 57,33\% | 53.67\% | 50.00\% | 52.40\% | 54.79\% | 57.19\% | 59.59\% | 61.98\% | 64.38\% | 66.78\% | 66.78\% | 66.78\%\% | 66.78\% | 66.78\% |
| Pinnacle West Capital | 63.00\% | 64.00\% | 65.00\% | 66.00\% | 66.11\% | 66.22\% | 66.33\% | 66.44\% | 66.56\% | 66.67\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Portiand General | 54.00\% | 53.67\% | 53.33\% | 53.00\% | 54.97\% | 56.94\% | 58.91\% | 60.87\% | 62.84\% | 64.81\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| SCANA Corp. | 63.00\% | 61.67\% | 60.33\% | 59.00\% | 60.11\% | 61.22\% | 62.33\% | 63.44\% | 64.56\% | 65.67\% | 66.78\% | 66.78\% | 66.78\% | 6678\% | 66.78\% |
| Sempra Energy | 45.00\% | 44.33\% | 43.67\% | 43.00\% | $46.40 \%$ | 49.79\% | 53.19\% | 56.59\% | 59.98\% | 63.38\% | 66.78\%\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Southem Co. | 73.00\% | 71.67\% | 30.33\% | 69.00\% | 68.68\% | 68.37\% | 68.05\% | 67.73\% | 67.41\% | 67.10\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| TECO Energy, Inc. | 65.00\% | 64.67\% | 64.33\% | 64.00\% | 64.40\% | 64.79\% | 65.19\% | 65.59\% | 65.98\% | 66.38\% | 66.78\% | 66.78\% | 66.78\%\% | 66.78\% | 66.78\% |
| UIL Holdings Corp. | 79.00\% | 76.67\% | 74.33\% | 72.00\% | 71.25\% | 70.51\% | 69.76\% | 69.02\% | 68.27\% | 67.52\% | 66.78\%/9 | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Vectren Corp. | 73.00\% | 72.00\% | 71.00\% | 70.00\% | 69.54\% | 69.08\% | 68.62\% | 68.16\% | 67.30\% | 67.24\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Westar Energy | 70.00\% | 66.33\% | 62.67\% | 59.00\% | 60.11\% | 61.22\% | 62.33\% | 63.44\% | 64.56\% | 65.67\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Wisconsin Energy | 53.00\% | 55.33\% | 57.67\% | 60.00\% | 60.97\% | 61.94\% | 62.91\% | 63.87\% | 64.84\% | 65.81\% | 66.78\%/ | 66.78\% | 66.78\% | 66.78\% | 66.78\% |
| Xcel Energy, Inc. | 58.00\% | 59.67\% | 61.33\% | 63.00\% | 63.54\% | 64.08\% | 64.62\% | 65.16\% | 65.70\% | 66.24\% | 66.78\% | 66.78\% | 66.78\%\% | 66.78\% | 66.78\% |


| Case 12-E-0201 \& 12-G-0202 Dividends per Share and | [44] | [45] | [46] | [47] | [48] | [49] | [50] | [51] | [52] | [53] | [54] | [55] | [56] | [57] | [58] | $\frac{\text { Exhibit_(KXD-27) }}{[59]}$ | $\begin{gathered} \text { page } 12 \text { of } 19 \\ \text { [60] } \\ \hline \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Teminal Market Value |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Terminal | Terminal |
| Company | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | Pnce | P/E Ratio |
| Allete | \$1.65 | \$1.69 | \$1.73 | \$1.76 | 51.87 | \$2.00 | 52.13 | 52.27 | \$2.43 | 52.99 | \$2.77 | 52.93 | $\$ 3.10$ | $\$ 3.27$ | \$3.46 | \$92.30 | 17.80 |
| Alliant Energy Corp. | \$2.00 | \$2.10 | \$2.21 | \$2.33 | \$2.48 | \$2.64 | \$2.80 | \$2.98 | \$3.17 | \$3.38 | \$3.59 | 53.80 | \$4.02 | 54.25 | \$4.50 | \$95.96 | 14.25 |
| Ameren Corp. | \$2.01 | \$2.12 | \$2.24 | \$2.36 | \$2.44 | \$2.53 | \$2.62 | \$2.73 | \$2.86 | \$2.99 | 53.14 | 53.32 | \$3.51 | \$3.72 | $\$ 3.93$ | \$67.97 | 11.55 |
| American Electric Power | \$1.64 | \$1.68 | \$1.72 | \$1.76 | 51.89 | 52.04 | \$2.20 | \$2.37 | \$2.57 | 52.78 | \$3.01 | \$3.19 | \$3.37 | \$3.57 | 53.77 | 590.62 | 16.04 |
| Avista Comp. | \$1.15 | \$1.23 | \$1.31 | \$1.39 | \$1.4s | \$1.51 | \$1.58 | \$1.66 | \$1.34 | \$1.83 | $\$ 1.93$ | \$2.04 | \$2.16 | \$2.29 | \$2.42 | \$55.35 | 15.28 |
| Black Hills Corp. | \$1.37 | \$1.42 | \$1.46 | $\$ 1.50$ | \$1.60 | \$1.71 | \$1.82 | \$1.93 | \$2.05 | \$2.17 | \$2.30 | 52.44 | \$2.58 | \$2.73 | \$2.88 | \$74.96 | 17.36 |
| Center Point Energy | \$0.76 | \$0.80 | 50.84 | \$0.88 | \$0.92 | \$0.97 | \$1.02 | \$1.07 | \$1.13 | \$1.30 | \$1.27 | \$1.34 | \$1.42 | \$1.50 | \$1.59 | \$42.15 | 17.75 |
| Cleco Corp. | \$1.30 | \$1.42 | \$1.53 | \$1.68 | \$1.79 | \$1.91 | \$2.04 | \$2.19 | \$234 | 52.52 | 52.71 | \$2.86 | \$3.03 | \$3.20 | \$3,39 | \$87.01 | 17.16 |
| Consolidated Edison | \$2.40 | \$2.44 | \$2.49 | \$2.53 | \$2.65 | \$2.78 | \$2.93 | 33.10 | \$3.28 | \$3.50 | \$3.74 | \$3.95 | \$4.18 | \$4.42 | $\$ 4.68$ | \$130.37 | 18.62 |
| Dominion Resources, Inc. | \$1.94 | \$2.02 | \$2.10 | \$2.19 | \$2.31 | \$2.44 | \$2.57 | \$2.72 | \$2.89 | \$3.06 | \$3.25 | \$3.44 | \$3,64 | \$3.85 | \$4.07 | 511277 | 18.51 |
| DTE Enargy Co . | \$2.56 | \$2.67 | \$2.79 | 52.91 | \$3.06 | \$3.23 | \$3.4] | \$3.61 | \$3.84 | \$4.08 | \$4.35 | \$4.60 | \$4.87 | \$5.15 | \$5.45 | \$119.49 | 14.65 |
| Edison International | \$1.60 | \$1.64 | 51.67 | \$1.70 | \$1.85 | \$2.01 | \$2.20 | \$2.40 | \$2.64 | \$2.91 | \$3.22 | 53.41 | \$3.61 | \$3.81 | \$4.03 | \$96. 26 | 15.94 |
| Great Plains Energy inc. | 81.01 | \$1.08 | \$1.14 | \$1.22 | \$1.31 | 51.41 | \$1.51 | \$1.62 | \$1.74 | \$1.87 | \$2.01 | \$2.12 | \$2.25 | $\$ 2.38$ | \$251 | \$47,28 | 12.57 |
| Hawaiian Electric | \$1.06 | $\$ 1.11$ | \$1.16 | \$1.21 | \$1.33 | \$1.47 | \$1.60 | \$1.74 | \$1.88 | \$2.01 | \$2.15 | \$2.27 | \$2.40 | \$2.54 | \$2.69 | \$59.04 | 14.67 |
| iDaCORP, ine | \$1.38 | \$1.57 | \$1.78 | 5201 | \$2.18 | \$2.32 | \$2.50 | \$2.70 | \$2.93 | \$3.17 | \$3.44 | \$3.64 | 53.85 | \$4.07 | \$4.30 | 696.5s | 14.99 |
| Entegry | \$2.97 | 53.12 | 53.26 | \$3.41 | 53.71 | \$4.02 | \$4.33 | \$4.64 | \$4.95 | \$5.25 | \$5.54 | \$5.86 | \$6.19 | \$6.55 | \$6.93 | \$118.61 | 11.43 |
| OGE Energy | \$1.46 | \$1.56 | 51.67 | \$1.78 | \$2.05 | \$2.34 | \$2.66 | \$3.00 | \$3.38 | \$378 | \$4.21 | \$4.45 | \$4.71 | \$4.98 | \$5.27 | \$131.26 | 16.64 |
| Pepco Holdings, lne. | 81.10 | \$1.07 | \$1.04 | $\$ 1.01$ | \$1.04 | \$1.08 | \$1.12 | \$1.16 | $\$ 1.21$ | 81.27 | \$1.34 | \$1.42 | \$1.50 | \$1.58 | \$1.68 | \$41. 88 | 16.69 |
| PG\&E Corp | \$1.84 | \$1.79 | \$1.73 | $\$ 1.67$ | \$1.81 | \$1.97 | 52.14 | \$2.33 | \$2.53 | 52.79 | \$3.06 | \$3.23 | \$3.42 | \$3.62 | \$3.82 | \$94.62 | 16.52 |
| Pinnacie West Capital | \$2.17 | \$2.32 | \$2.49 | 52.67 | \$2.83 | \$2.99 | \$3.17 | \$3.35 | \$3.55 | \$3.76 | \$3.99 | \$4.22 | \$4.46 | $\$ 4.72$ | \$4.99 | \$105.47 | 14.12 |
| Portiand General | 81.01 | \$1.06 | \$1.11 | \$1.17 | \$1.29 | \$1.41 | \$1.55 | \$1.69 | \$1.85 | 52.02 | \$2.20 | \$2.33 | \$2.46 | \$2.60 | \$2.75 | \$58.27 | 14.14 |
| SCANA Corp. | 51.94 | $\$ 1.98$ | \$2.01 | \$2.04 | \$2.16 | \$2.29 | \$2.44 | \$2.60 | \$2.79 | 52.99 | \$3.21 | \$3.40 | \$3.59 | \$3.80 | \$4.02 | 599.80 | 16.57 |
| Sempra Energy | \$2.04 | \$2.13 | \$2.23 | \$2.33 | \$2.67 | \$3.04 | \$3.45 | \$3.89 | \$4.36 | \$4.88 | \$5.44 | \$5.73 | \$6.08 | \$6.44 | \$6.81 | \$139.61 | 13.70 |
| Southem Co. | \$1.98 | \$2.04 | $\$ 2.11$ | 5218 | \$2.28 | \$2.39 | \$2.51 | \$2.64 | \$2.77 | $\$ 2.92$ | \$3.07 | \$3.25 | \$3.44 | \$3.64 | \$3.84 | \$97.81 | 16.99 |
| TECO Energy, Inc. | $\$ 0.87$ | \$0.92 | 50.96 | $\$ 1.01$ | \$1.08 | \$1.14 | \$1.22 | \$1.29 | \$1.38 | \$1.46 | \$1.56 | $\$ 1.65$ | \$1.74 | \$1.84 | \$1.95 | 540.68 | 13.94 |
| UL. Holdings Corp. | 81.70 | 51.72 | \$1.73 | \$1.75 | \$1.80 | \$1.86 | \$1.92 | \$1.99 | \$2.07 | \$2.16 | \$2.26 | \$2.39 | \$2.53 | \$2.68 | \$2.83 | \$74.17 | 17.49 |
| Vectren Corp. | $\$ 1.32$ | \$1.36 | \$1.41 | \$1.46 | \$1.52 | \$1.59 | \$1.66 | \$1.74 | \$1.82 | \$1.91 | \$2.01 | \$2.12 | \$2.24 | \$2.37 | \$2.51 | \$63,44 | 16.87 |
| Westar Energy | \$1.42 | \$1.43 | \$1.43 | \$1.43 | \$1.54 | \$1.66 | \$1.80 | \$1.94 | \$209 | 52.25 | \$2.41 | \$2.55 | \$2.70 | \$2.86 | 57.02 | \$63.47 | 14.03 |
| Wisconsin Energy | $\$ 1.16$ | \$1.30 | \$1.45 | 51.61 | \$1.75 | \$1.90 | \$2.05 | $\$ 2.22$ | \$2.39 | \$2.57 | \$2.76 | \$2.92 | \$3.09 | \$3.26 | \$3.45 | \$79.55 | 15.39 |
| Xcel Energy, Inc. | \$1.00 | \$1.08 | \$1.17 | 81.26 | \$1.34 | \$1.42 | \$1.51 | \$1.60 | \$1.71 | \$1.82 | \$1.94 | \$2.05 | \$2.17 | \$2.29 | \$2.42 | \$60.02 | 16.53 |

THREE-STAGE DCF MODEL - 3 MONTH AVERAGE PRICE

| Case 12-E-0201 \& 12-G-0 Investor Cash Flows | [61] | [62] | [63] | [64] | [65] | [66] | [67] | [68] | [69] | [70] | [71] | [72] | [73] | [74] | [75] | $\underset{[76]}{\text { Exhibit_(KXD-27) }}$ | $\begin{gathered} \text { page } 13 \text { of } 19 \\ {[77]} \\ \hline \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Initial |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Company | Outilow | 3/16/12 | 9/16/12 | 91613 | 91614 | 9/16/15 | 9/16/16 | 9/16/17 | $9 / 1618$ | 9/16/19 | 9/16/20 | 9/16/21 | 9/16/22 | 9/16/23 | 9/16/24 | 9/16/25 | 9/16/26 |
| Allete | (\$41.41) | \$0.00 | \$1.65 | \$1.69 | \$1.73 | \$1.76 | \$1.87 | \$2.00 | \$2.13 | \$2.27 | \$2.43 | \$2.59 | \$2.77 | \$2.93 | \$3.10 | \$3.27 | \$95.77 |
| Alliant Energy Corp. | (\$43.08) | \$0.00 | \$2.00 | \$2.10 | \$2.21 | \$2.33 | \$2.48 | \$2.64 | \$2.80 | \$2.98 | \$3.17 | \$3.38 | \$3.59 | \$3.80 | \$4.02 | \$4.25 | \$100.46 |
| Ameren Corp. | (\$32.01) | \$0.00 | \$2.01 | \$2.12 | \$2.24 | \$2.36 | \$2.44 | \$2.53 | \$2.62 | \$2.73 | \$2.86 | \$2.99 | \$3.14 | \$3.32 | \$3.51 | \$3.72 | \$71.90 |
| American Electric Power | (\$39.84) | \$0,00 | \$1.64 | \$1.68 | \$1.72 | \$1.76 | \$1.89 | \$2.04 | \$2.20 | \$2.37 | \$2.57 | \$2.78 | \$3.01 | \$3.19 | \$3.37 | \$3.57 | \$94.40 |
| Avista Corp. | (\$25.38) | \$0.00 | \$1.15 | \$1.23 | \$1.31 | \$1.39 | \$1.45 | \$1.51 | \$1.58 | \$1.66 | \$1.74 | \$1.83 | \$1.93 | \$2.04 | \$2.16 | \$2.29 | \$57.77 |
| Black Hills Con. | (\$33.81) | \$0.00 | \$1.37 | \$1.42 | \$1.46 | $\$ 1.50$ | \$1.60 | \$1.71 | \$1.82 | \$1.93 | \$2.05 | \$2.17 | \$2.30 | \$2.44 | \$2.58 | \$2.73 | \$77.84 |
| Center Point Energy | (\$19.15) | \$0.00 | \$0.76 | \$0.80 | \$0.84 | \$0.88 | \$0.92 | \$0.97 | \$1.02 | \$1.07 | $\$ 1.13$ | \$1.20 | \$1.27 | \$1.34 | \$1.42 | \$1.50 | \$43.73 |
| Cleco Corp. | (\$38.30) | \$0.00 | \$1.30 | \$1.42 | \$1.55 | \$1.68 | \$1.79 | \$1.91 | \$2.04 | \$2.19 | \$2.34 | \$2.52 | \$2.71 | \$2.86 | \$3.03 | \$3.20 | \$90.39 |
| Consolidated Edison | (\$59.17) | \$0.00 | \$2.40 | \$2.44 | \$2.49 | \$2.53 | \$2.65 | \$2.78 | \$2.93 | $\$ 3.10$ | \$3.28 | \$3.50 | \$3.74 | \$3.95 | \$4.18 | \$4.42 | \$135.05 |
| Dominion Resources, Inc. | (\$50.96) | \$0.00 | \$1.94 | \$2.02 | \$2.10 | \$2.19 | \$2.31 | \$2.44 | \$2.57 | \$2.72 | \$2.89 | \$3.06 | \$3.25 | \$3,44 | \$3.64 | \$3.85 | \$116.84 |
| DTE Energy Co. | (\$54.08) | \$0.00 | \$2.56 | \$2.67 | \$2.79 | \$2.91 | \$3.06 | \$3.23 | \$3.41 | \$3.61 | \$3.84 | \$4.08 | \$4.35 | \$4,60 | \$4.87 | \$5.15 | \$124.94 |
| Edison International | (\$41.35) | \$0.00 | \$1.60 | \$1.64 | \$1.67 | \$1.70 | \$1.85 | \$2.01 | \$2.20 | \$2.40 | \$2.64 | \$2.91 | \$3.22 | \$3.41 | \$3.61 | \$3.81 | \$100.30 |
| Great Plains Energy Inc. | (\$20.81) | \$0.00 | \$1.01 | \$1.08 | \$1.14 | \$1.22 | \$1.31 | \$1.41 | \$1.51 | \$1.62 | \$1.74 | \$1.87 | \$2.01 | \$2.12 | \$2.25 | \$2.38 | \$49.79 |
| Hawaiian Electric | (\$25.76) | \$0.00 | \$1.06 | \$1.11 | \$1.16 | \$1.21 | \$1.33 | \$1.47 | \$1.60 | \$1.74 | \$1.88 | \$2.01 | \$2.15 | \$2.27 | \$2.40 | \$2.54 | \$61.72 |
| IDACORP, Inc. | (\$41.53) | \$0.00 | \$1.38 | \$1.57 | \$1.78 | \$2.01 | \$2.16 | \$2.32 | \$2.50 | \$2.70 | \$2.93 | \$3.17 | \$3.44 | \$3.64 | \$3.85 | \$4.07 | \$100.85 |
| Integrys | (\$52.99) | \$0,00 | \$2.97 | \$3.12 | \$3.26 | \$3.41 | \$3.71 | \$4.02 | \$4.33 | \$4.64 | \$4.95 | \$5.25 | \$5.54 | \$5.86 | \$6.19 | \$6.55 | \$125.54 |
| OGE Energy | (\$53.98) | \$0.00 | \$1.46 | \$1.56 | \$1.67 | \$1,78 | \$2.05 | \$2.34 | \$2.66 | \$3.00 | \$3.38 | \$3.78 | \$4.21 | \$4,45 | \$4.71 | \$4.98 | \$136.53 |
| Pepco Holdings, Inc. | (\$19.84) | \$0.00 | \$1.10 | \$1.07 | \$1.04 | \$1.01 | \$1.04 | \$1.08 | \$1.12 | \$1.16 | \$1.21 | \$1.27 | \$1.34 | \$1.42 | \$1.50 | \$1.58 | \$43.55 |
| PGREECorp | (\$41.51) | \$0.00 | \$1.84 | \$1.79 | \$1.73 | \$1.67 | \$1.81 | \$1.97 | \$2.14 | \$2.33 | \$2.55 | \$2.79 | \$3.06 | \$3.23 | \$3.42 | \$3.62 | \$98.45 |
| Pinnacle West Capital | (\$47.55) | \$0.00 | \$2.17 | \$232 | \$2.49 | \$2.67 | \$2.83 | \$2.99 | \$3.17 | \$3.35 | \$3.55 | \$3.76 | \$3.99 | \$4.22 | \$4.46 | \$4.72 | \$110.46 |
| Portiand General | (\$24.94) | \$0.00 | \$1.01 | \$1.06 | \$1.11 | \$1.17 | \$1.29 | \$1.41 | \$1.55 | \$1.69 | \$1.85 | \$2.02 | \$2.20 | \$2,33 | \$2.46 | \$2.60 | \$61.02 |
| SCANA Corp. | (\$44.77) | \$0,00 | \$1.94 | \$1.98 | $\$ 2.01$ | \$2.04 | \$2.16 | \$2.29 | \$2.44 | \$2.60 | \$2.79 | \$2.99 | \$3.21 | \$3.40 | \$3.59 | \$3.80 | \$103.82 |
| Sempra Energy | (\$57.02) | \$0.00 | \$2.04 | \$2.13 | \$2.23 | \$2.33 | \$2.67 | \$3.04 | 53.45 | \$3.89 | \$4.36 | \$4.88 | \$5.44 | \$5.75 | \$6.08 | \$6.44 | \$146.42 |
| Southern Co. | (\$44.93) | \$0.00 | \$1.98 | \$2.04 | \$2.11 | \$2.18 | \$2.28 | \$2.39 | \$2.51 | \$2.64 | \$2.77 | \$2.92 | \$3.07 | \$3.25 | $\$ 3.44$ | \$3.64 | \$101.65 |
| TECO Energy, Inc. | (\$18.29) | \$0.00 | \$0.87 | 50.92 | \$0.96 | \$1.01 | \$1.08 | \$1.14 | \$1.22 | \$1.29 | \$1.38 | \$1.46 | \$1.56 | \$1.65 | \$1.74 | \$1.84 | \$42.63 |
| UIL Holdings Corp. | (\$34.91) | \$0.00 | \$1.70 | \$1.72 | \$1.73 | \$1.75 | \$1.80 | \$1.86 | \$1.92 | \$1.99 | \$2.07 | \$2.16 | \$2.26 | \$2.39 | \$2.53 | \$2.68 | \$77.01 |
| Vectren Corp. | (\$29.31) | \$0.00 | \$1.32 | \$1.36 | \$1.41 | \$1.46 | \$1.52 | \$1.59 | \$1.66 | \$1.74 | \$1.82 | \$1.91 | \$2.01 | \$2.12 | \$2.24 | \$2.37 | \$65.95 |
| Westar Energy | (\$28.20) | \$0,00 | \$1.42 | \$1.43 | \$1.43 | \$1.43 | \$1.54 | \$1.66 | $\$ 1.80$ | \$1.94 | \$2.09 | \$2.25 | \$2.41 | \$2.55 | \$2.70 | \$2.86 | \$66.49 |
| Wisconsin Energy | (\$34.45) | \$0.00 | \$1.16 | \$1.30 | \$1.45 | \$1.61 | \$1.75 | \$1.90 | \$2.05 | \$2.22 | \$2.39 | \$2.57 | \$2.76 | \$2.92 | \$3.09 | \$3.26 | \$83.00 |
| Xcel Energy, Inc. | (\$26.75) | \$0.00 | \$1.00 | \$1.08 | \$1.17 | \$1.26 | \$1.34 | \$1.42 | \$1.51 | \$1.60 | \$1.71 | \$1.82 | \$1.94 | \$2.05 | \$2.17 | \$2.29 | \$62.44 |



| Company |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Exhibit_(KXD-27) |  | page 13 of 19 Mr. Hevert's Discount Rate | Outlier <br> Labelling |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 | 2 | 3 | 1 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Sum of PV | Initial Price | NPV |  |  |
| Allete | \$1.51 | \$1.40 | \$1.31 | \$1.21 | \$1.18 | S1.14 | \$1.11 | \$1.08 | 51.05 | \$1.02 | \$1.00 | \$0.96 | \$0.93 | 50.89 | 523.77 | 839.56 | \$41,41 | 1.84 | 9.73\% |  |
| Alliant Energy Corp. | \$1.81 | \$1.72 | \$1.63 | \$1.55 | \$1.49 | \$1.43 | \$1.37 | \$1.32 | 81.27 | 81.22 | \$1.17 | \$1.12 | \$1.07 | \$1.02 | \$21.80 | \$40.98 | \$43.08 | 2.10 | 10.72\% |  |
| Ameren Corp. | \$1.79 | \$1.69 | \$1.60 | \$1.51 | \$1.39 | \$1.29 | \$1.20 | \$1.11 | \$1.04 | \$0.97 | \$0.91 | $\$ 0.86$ | \$0.82 | \$0.77 | \$13.34 | \$30.30 | \$32.01 | 1.72 | 11.88\% | OUTLIER |
| American Electric Power | \$1.49 | \$1.38 | \$1.29 | \$1.20 | \$1.17 | \$1.14 | \$1.12 | \$1.09 | \$1.07 | \$1.05 | \$1.04 | \$1.00 | \$0.96 | \$0.92 | \$22.09 | \$38.00 | \$39.84 | 1.85 | 10.17\% |  |
| Avista Corp. | \$1.04 | \$1.01 | 50.97 | \$0.94 | \$0.88 | \$0.84 | \$0.79 | \$0.75 | \$0.72 | \$0.68 | \$0.65 | \$0.62 | \$0.60 | \$0.57 | \$13.12 | \$24.18 | \$25.38 | 1.20 | 10.39\% |  |
| Black Hills Corp. | \$1.25 | \$1.17 | \$1.10 | \$1.03 | \$1.00 | \$0.97 | \$0.94 | \$0.91 | \$0.88 | \$0.85 | \$0.82 | \$0.79 | \$0.76 | 50.73 | \$19.06 | \$32.29 | \$33.81 | 1.52 | 9.83\% |  |
| Center Point Energy | \$0.69 | 50.66 | 50.63 | $\$ 0.61$ | \$0.58 | \$0.55 | \$0.53 | \$0.51 | 50.49 | \$0.47 | \$0.46 | \$0.44 | \$0.42 | \$0.41 | \$10.84 | \$18.30 | \$19.15 | 0.85 | 9.75\% |  |
| Cleco Corp. | 51.18 | $\$ 1.18$ | 81.17 | \$1.15 | \$1.12 | \$1.09 | \$1.06 | \$1.03 | \$1.00 | \$0.98 | \$0.96 | $\$ 0.32$ | \$0.89 | 50.86 | \$21.99 | \$36.58 | \$38.30 | 1.73 | 9.88\% |  |
| Consolidated Edison | \$2.19 | \$2.04 | 81.89 | \$1.76 | $\$ 1.68$ | \$1.61 | \$1.55 | \$1.49 | \$1.44 | \$1.40 | \$1.37 | \$1.32 | \$1.28 | \$1.23 | \$34.34 | \$56.58 | \$59.17 | 2.59 | 9.56\% |  |
| Dominion Resources, Inc | 81.77 | \$1.68 | \$1.60 | \$1.52 | \$1.46 | \$1.41 | \$1.36 | \$1.31 | \$1.27 | \$1.23 | \$1.19 | \$1.15 | \$1.11 | $\$ 1.07$ | \$29.62 | \$48.73 | \$50.96 | 2.23 | 9.58\% |  |
| DTE Energy Co. | \$2.32 | \$2.19 | \$2.06 | \$1.95 | $\$ 1.85$ | \$1.77 | \$1.69 | \$1.62 | 51.55 | \$1.49 | \$1.44 | \$1.38 | \$1.32 | \$1.26 | \$27.61 | \$51.48 | \$54.08 | 260 | 10.59\% |  |
| Edison International | \$1.45 | \$1.35 | \$1.25 | \$1.15 | \$1.14 | \$1.12 | \$1.11 | \$1.11 | \$1.10 | \$1.10 | \$1.11 | \$1.06 | \$1.02 | 50.98 | \$23.37 | \$39,43 | \$41.35 | 1.92 | 10.20\% |  |
| Great Plains Energy Inc. | 80.91 | \$0.87 | 50.83 | \$0.79 | \$0.76 | \$0.74 | 50.71 | 50.68 | 50.66 | 50.64 | \$0.61 | \$0.58 | 50.55 | 50.52 | \$9.88 | \$19.74 | \$20.81 | 1.07 | 11.39\% |  |
| Hawaiian Electric | 50.96 | \$0.91 | 50.86 | \$0.81 | \$0.81 | 50.80 | 50.79 | 50.78 | \$0.76 | \$074 | 50.71 | \$0.68 | 50.65 | 50.62 | \$13.65 | \$24.52 | \$25.76 | 1.24 | 10.58\% |  |
| DACORP, Ine | \$1.25 | \$1.29 | $\$ 1.32$ | \$135 | \$1.31 | 51.28 | \$1.25 | \$1.22 | \$1.19 | \$1.17 | \$1.15 | \$1.10 | \$1.05 | \$1.01 | \$22.62 | \$39.55 | \$41.53 | 1.98 | 10.48\% |  |
| Integrys | \$2.65 | \$2.49 | 52.33 | \$2.17 | \$2.11 | \$2.04 | \$1.97 | \$1.88 | \$1.79 | \$1.70 | \$1.60 | \$1.51 | \$1.43 | \$1.35 | \$23.11 | \$50.13 | \$52.99 | 2.85 | 11.94\% | OUTLIER |
| OGE Energy | \$1.33 | \$1.29 | \$1.25 | \$1.21 | \$1.27 | \$1. 32 | 81.36 | \$1.40 | \$1.43 | \$1.46 | \$1.47 | \$1.42 | \$1.36 | \$1.31 | \$32.63 | \$51.52 | \$53.98 | 2.46 | 10.01\% |  |
| Pepco Holdings, Inc. | \$1.00 | \$0.89 | \$0.78 | \$0.69 | \$0.65 | \$0.61 | \$0.57 | \$0.54 | \$0.51 | \$0.49 | \$0.47 | \$0.45 | \$0.43 | 50.42 | \$10.43 | \$18.94 | \$19.84 | 0.91 | 10.00\% |  |
| PG\&ECorp | \$1.67 | \$1.48 | \$1.30 | \$1.14 | \$1.12 | \$1.11 | \$1.09 | \$1.08 | \$1.08 | $\$ 1.07$ | \$1.07 | \$1.03 | \$0.99 | \$0.95 | \$23.44 | \$39.61 | \$41.51 | 1.90 | 10.04\% |  |
| Pinnacle West Capital | \$1.95 | \$1.89 | \$1.83 | \$1.78 | \$1.70 | \$1.62 | \$1.55 | \$1.48 | \$1.42 | \$1.35 | \$1.29 | \$1.24 | \$1.18 | \$1.13 | \$23.82 | \$45.23 | \$47.55 | 2.32 | 10.77\% |  |
| Portand General | \$0.91 | \$0.86 | \$0.82 | \$0.78 | $\$ 0.77$ | \$0.77 | \$0.76 | \$0.75 | \$0.74 | S0.73 | \$0.71 | \$0.68 | \$0.65 | \$0.62 | \$13.17 | \$23.72 | \$24.94 | 1.22 | 10.76\% |  |
| SCANA Corp. | 81.77 | \$1.63 | $\$ 1.51$ | \$1.39 | \$1.34 | \$1.29 | \$1.25 | \$1.21 | \$1.18 | $\$ 1.15$ | \$1.12 | \$1.08 | 51.04 | \$1.00 | \$24.76 | \$42.72 | \$44.77 | 2.05 | 10.03\% |  |
| Sempra Energy | \$1.84 | \$1.73 | \$1.64 | \$1.54 | 81.59 | \$1.63 | \$1.67 | \$1.70 | \$1.72 | \$1.73 | \$1.74 | \$1.66 | \$1.58 | \$1.51 | \$30.93 | \$54.20 | \$57.02 | 2.82 | 10.92\% |  |
| Southem Co . | 81.80 | \$1. 69 | \$1.59 | \$1.49 | \$1.42 | \$1.36 | \$1.30 | \$1.24 | \$1.18 | \$1.13 | \$1.09 | \$1.04 | \$1,00 | $\$ 0.97$ | \$24.59 | \$42.89 | \$44.93 | 2.03 | 9.92\% |  |
| TECO Energy, Inc. | \$0.79 | 50.75 | 80.71 | \$0.67 | 80.64 | 50.62 | 80.59 | \$0.57 | \$0.55 | \$0.52 | \$0.50 | \$0.48 | \$0.46 | 50.44 | $\$ 9.11$ | \$17.39 | \$18.29 | 0.90 | 10.83\% |  |
| ULL Holdings Corp. | \$1.55 | \$1.42 | \$1.31 | \$1.20 | \$1.13 | \$1.06 | \$1.00 | \$0.94 | \$0.89 | \$0.85 | \$0.81 | \$0.78 | 50.75 | 50.72 | \$18.93 | \$33.35 | \$34.91 | 1.56 | 9.80\% |  |
| Vectren Copp. | \$1.20 | 81.13 | \$1.06 | \$1.00 | \$0.95 | \$0.90 | \$0.85 | \$0.81 | 50.78 | 50.74 | \$0.71 | \$0.68 | \$0.65 | \$0.63 | 815.89 | \$27.98 | \$29.31 | 1.33 | 9.95\% |  |
| Westar Energy | \$1.28 | \$1.16 | \$1.05 | \$0.95 | \$0.92 | \$0.90 | \$0.88 | \$0.85 | \$0.83 | \$0.81 | \$0.78 | \$0.75 | 50.71 | so. 68 | \$14.28 | \$26.82 | \$28.20 | 1.38 | 10.80\% |  |
| Wisconsin Energy | \$1.05 | \$1.07 | $\$ 1.08$ | \$1.09 | \$1.07 | \$105 | \$1.03. | 81.01 | \$0.98 | \$0.96 | \$0.93 | \$0.89 | 50.86 | \$0.82 | \$18.93 | \$32.82 | \$34.45 | 1.62 | 10.36\% |  |
| Xcel Energy, Inc. | 50.91 | \$0.89 | 50.88 | 50.86 | 50.83 | 30.80 | 50.77 | \$0.75 | \$0.72 | \$0.70 | 50.68 | \$0.65 | 80.62 | \$0.60 | 514.87 | 525.53 | \$26.75 | 1.22 | 10.04\% |  |
| MEAN: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 10.36\% |  |
| median: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 10.18\% |  |
| MIN: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 9.56\% |  |
| MAX: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 11.94\% |  |
| Mad |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.39\% |  |


| Company | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Sum of PV | Initial Price | NPV | Stalf <br> Discount Rate |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Allete | \$1.51 | \$1.41 | \$1.32 | \$1.23 | 81.20 | 81.17 | \$1.14 | \$1.11 | \$1.09 | \$1.06 | \$1.04 | \$1.01 | \$0.97 | \$0.94 | \$25.19 | \$41.41 | - $\$ 4141$ | 0.00 | 9.31\% |
| Alliant Energy Corp. | \$1.81 | \$1.73 | \$1.65 | \$1.58 | \$1.52 | $\$ 1.47$ | $\$ 1.42$ | \$1.37 | \$1.32 | $\$ 1.28$ | \$1.23 | \$1.18 | \$1.13 | \$1.09 | \$23.30 | \$43.08 | - $\$ 43.08$ | 0.00 | 10.23\% |
| Ameren Corp. | \$1.80 | \$1.71 | \$1.62 | \$1.54 | \$1.43 | \$1.33 | \$1.24 | \$1.16 | \$1.09 | \$1.03 | $\$ 0.97$ | \$0.92 | \$0.88 | \$0.83 | \$14.46 | \$32.01 | . $\$ 32.01$ | 0.00 | 11.28\% |
| American Electric Power | \$1.49 | \$1.40 | \$1.30 | \$1.22 | \$1.19 | \$1.17 | \$1.15 | \$1.13 | \$1.11 | $\$ 1.10$ | \$1.09 | \$1.05 | \$1.01 | \$0.97 | \$23.47 | \$39.84 | -539.84 | 0.00 | 9.72\% |
| Avista Corp. | \$1.05 | \$1.02 | \$0.98 | \$0.95 | \$0.90 | \$0.86 | \$0.82 | \$0.78 | \$0.74 | \$0.71 | \$0.68 | \$0.66 | \$0.63 | \$0.61 | \$13.99 | \$25.38 | -\$25.38 | 0.00 | 9.92\% |
| Black Hills Corp. | \$1.26 | \$1.18 | \$1.11 | \$1.05 | \$1.02 | \$1.00 | \$0.97 | \$0.94 | \$0.91 | \$0.89 | \$0.86 | \$0.83 | \$0.80 | \$0.77 | \$20.22 | \$33.81 | -\$33.81 | 0.00 | 9.40\% |
| Center Point Energy | \$0.70 | \$0.67 | \$0.64 | \$0.62 | \$0.59 | \$0.57 | \$0.55 | \$0.53 | \$0.51 | \$0.49 | \$0.48 | \$0.46 | \$0.45 | 50.43 | \$11.49 | \$19.15 | -\$19.15 | 0.00 | 9.32\% |
| Cleos Corp. | \$1.19 | \$1.19 | \$1.18 | \$1.17 | \$1.14 | \$1.11 | \$1.09 | \$1.06 | \$1.04 | \$1.02 | \$1.00 | \$0.97 | \$0.94 | 50.90 | \$23.31 | \$38.30 | - \$38.30 | 0.00 | 9.46\% |
| Consolidated Edison | \$2.20 | \$2.05 | \$1.91 | \$1.78 | 81.71 | \$1.64 | 81.59 | 81.54 | \$1.49 | \$1.46 | \$1.43 | $\$ 1.38$ | \$1.34 | \$1.30 | \$36.34 | \$59.17 | - \$59.17 | 0.00 | 9.15\% |
| Dominion Resources, Ine, | \$1.78 | \$1.70 | \$1.62 | \$1.54 | \$1.49 | 81.44 | \$1.39 | \$1.35 | \$1.31 | \$1.27 | \$1.24 | \$1.20 | \$1.16 | \$1.13 | \$31.34 | \$50.96 | -\$50.96 | 0.00 | 9.17\% |
| DTE Energy Co. | \$2.33 | \$2.21 | \$2.09 | \$1.98 | \$1.89 | \$1.81 | \$1.74 | \$1.67 | \$1.61 | \$1.56 | \$1.51 | \$1.45 | \$1.39 | \$1.34 | \$29.49 | \$54.08 | - $\$ 54.08$ | 0.00 | 10.10\% |
| Edison International | \$1.46 | \$1.36 | \$1.26 | \$1.17 | \$1.16 | \$1.15 | 81.14 | \$1.14 | \$1.14 | \$1.15 | \$1.16 | \$1.12 | \$1.08 | \$1.04 | \$24.83 | \$41.35 | . $\$ 41.35$ | 0.00 | 9.76\% |
| Great Plains Energy Inc. | 50.91 | \$0.87 | 50.84 | \$0. 81 | \$0.78 | $\$ 0.76$ | \$0.73 | \$0.71 | \$0.69 | \$0.67 | \$0.65 | \$0.62 | \$0.59 | \$0.56 | \$10.62 | \$20.81 | - 520.81 | 0.00 | 10.85\% |
| Hawaiian Electric | \$0.96 | \$0.92 | \$0.87 | \$0.82 | \$0.82 | \$0.82 | \$0.82 | \$0.81 | \$0.79 | \$0.77 | \$0.74 | \$0.72 | \$0.69 | \$0.66 | \$14.56 | \$25.76 | - $\$ 25.76$ | 0.00 | 10.11\% |
| macorp, Inc. | \$1.26 | \$1.30 | \$1.34 | \$1.37 | \$1.34 | \$1.31 | \$1.28 | \$1.26 | \$1.24 | \$1.22 | \$1.20 | \$1.16 | 81.11 | \$1.07 | \$24.08 | \$41.53 | . $\$ 4.53$ | 0.00 | 10.02\% |
| Integrys | \$2.67 | \$2.51 | \$236 | \$2.22 | \$2.17 | \$2.11 | \$2.04 | \$1.96 | \$1.88 | \$1.79 | \$1.70 | \$1.61 | \$1.53 | \$1.45 | \$24.99 | \$52.99 | - 852.99 | 0.00 | 11.36\% |
| OGE Energy | \$1.34 | \$1.30 | \$1.27 | \$1.23 | \$1.29 | \$1.35 | \$1.40 | \$1.44 | \$1.48 | \$1.51 | \$1.54 | \$1.48 | \$1.43 | \$1.38 | \$34.54 | \$53.98 | - 553.98 | 0.00 | 9.60\% |
| Pepco Holdings, lic. | \$1.00 | \$0.89 | \$0.79 | \$0.70 | 80.66 | 80.62 | \$0.59 | \$0.56 | \$0.53 | \$0.51 | \$0.49 | 50.47 | \$0.46 | \$0.44 | \$11.10 | \$19.84 | - \$1984 | 0.00 | 9.54\% |
| PGEECorp | \$1.68 | \$1.49 | \$1.32 | \$1.16 | 81.14 | \$1.13 | \$1.13 | \$1.12 | \$1.12 | \$1.11 | \$1.11 | \$1.08 | \$104 | \$1.00 | \$24.88 | \$41.51 | - $\$ 41.51$ | 0.00 | 9.60\% |
| Pinnacle West Capital | \$1.96 | \$191 | \$1.86 | \$1.81 | 81.73 | \$1.66 | \$1.60 | \$1.53 | \$1.47 | \$1.42 | \$1.36 | \$1.30 | \$1.25 | \$1.20 | \$25.48 | \$47.55 | - $\$ 47.55$ | 0.00 | 10.27\% |
| Portiand General | 50.91 | 80.87 | \$0.83 | \$0.79 | 80.79 | \$0.79 | 50.78 | \$0.77 | \$0.77 | \$0.76 | \$0.75 | \$0.72 | \$0.69 | \$0.66 | \$14.06 | \$24.94 | . $\$ 24.94$ | 0.00 | 10.28\% |
| SCANA Cotp. | \$1.77 | \$1.65 | \$1.53 | \$1.42 | 81.37 | \$1.32 | 81.29 | \$1.25 | \$1.22 | \$1.20 | \$1.17 | \$1.13 | \$1.09 | \$1.06 | \$26.30 | \$44.77 | - \$44.77 | 0.00 | 9.59\% |
| Sempra Energy | \$1.85 | \$1.75 | \$1.66 | \$1.57 | \$1.63 | \$1.68 | \$1.72 | \$1.76 | \$1.78 | $\$ 1.81$ | \$1.82 | \$1.75 | \$1.67 | \$1.60 | \$32.99 | \$57.02 | \$ $\$ 57.02$ | 0.00 | 10.45\% |
| Southem Co. | \$1.80 | \$1.70 | \$1.61 | \$1.52 | \$1.45 | \$1.39 | \$1.33 | \$1.28 | \$1.23 | \$1.18 | \$1.13 | \$1.10 | \$1.06 | \$1.02 | \$26.12 | \$44.93 | -\$44.93 | 0.00 | 9.48\% |
| TECO Energy, Inc. | 50.79 | \$0.75 | \$0.72 | \$0.68 | \$0.66 | \$0.63 | \$0.61 | \$0.59 | \$0.57 | \$0.5s | \$0.53 | \$0.51 | \$0.49 | \$0.47 | \$9.75 | \$18.29 | - $\$ 18.29$ | 0.00 | 10.33\% |
| UL Holdings Corp. | \$1.56 | \$1.44 | \$1.32 | \$1.22 | \$1.15 | \$1.08 | \$1.03 | \$0.97 | \$0.93 | \$0.88 | \$0.85 | \$0.82 | \$0.79 | \$0.76 | \$20.11 | \$34.91 | - $\$ 34.91$ | 0.00 | 9.36\% |
| Vectren Corp. | \$1.20 | \$1.14 | \$1.08 | \$1.02 | 80.97 | \$0.92 | \$0.88 | \$0.84 | 50.80 | \$0.77 | \$0.74 | \$0.71 | \$0.69 | 80.67 | \$16.89 | \$29.31 | -52931 | 0.00 | 9.51\% |
| Westar Energy | \$1.29 | \$1.17 | \$1.06 | 80.96 | \$0.94 | \$0.92 | \$0.90 | 50.88 | \$0.86 | \$0.84 | \$0.82 | \$0.79 | 50.75 | s0.72 | \$15.27 | \$28.20 | - $\$ 28.20$ | 0.00 | 1031\% |
| Wisconsin Energy | \$1.06 | \$1.08 | \$1.09 | \$1.10 | \$1.09 | \$1.08 | \$1.06 | \$1.04 | \$1.02 | \$1.00 | \$0.98 | \$0.94 | \$0.90 | \$0.87 | \$2014 | \$34.45 | - \$34.45 | 0.00 | 9.90\% |
| Xcel Energy, Inc. | 80.91 | \$0.90 | \$0. 89 | 80.87 | \$0.85 | \$0.82 | \$0.79 | 50.77 | S0.75 | \$0.73 | \$0.71 | \$0.68 | \$0.66 | \$0.64 | \$15.79 | \$26.75 | . $\$ 26.75$ | 000 | 960\% |
| MEAN: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 9.90\% |
| MEDLAN: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 9.74\% |
| MIN: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 9.15\% |
| MAX: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 11.36\% |
| MAD |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.37\% |

## Traditional CAPM

Allete
Alliant Energy Corp.
Ameren Corp.
American Electric Power
Avista Corp.
Black Hils Corp.
Center Point Energy
Cleco Corp.
Consolidated Edison
Dominion Resources, Inc.
DTE Energy Co.
Edison International
Great Plains Energy Inc.
Hawaiian Electric
IDACORP, Inc.
Integrys
OGE Energy
Pepco Holdings, Inc.
PG\&E Corp
Pinnacle West Capital
Portland General
SCANA Corp.
Sempra Energy
Southern Co.
TECO Energy, Inc.
UlL Holdings Corp.
Vectren Corp.
Westar Energy
Wisconsin Energy
Xcel Energy, Inc.
Mean
Median
Median Absolute Deviation(MAD)

|  |  |  |  |
| :---: | :---: | :---: | :---: |
| Ticker | Bloomberg | Value | Average |
|  |  | Line |  |
| ALE | 0.82 | 0.70 | 0.76 |
| LNT | 0.79 | 0.75 | 0.77 |
| AEE | 0.71 | 0.80 | 0.76 |
| AEP | 0.67 | 0.70 | 0.69 |
| AVA | 0.81 | 0.70 | 0.75 |
| BKH | 0.92 | 0.85 | 0.88 |
| CNP | 0.79 | 0.80 | 0.79 |
| CNL | 0.77 | 0.70 | 0.74 |
| ED | 0.55 | 0.60 | 0.58 |
| D | 0.62 | 0.70 | 0.66 |
| DTE | 0.74 | 0.75 | 0.75 |
| EIX | 0.72 | 0.80 | 0.76 |
| GXP | 0.80 | 0.75 | 0.77 |
| HE | 0.76 | 0.70 | 0.73 |
| IDA | 0.83 | 0.70 | 0.76 |
| TEG | 0.80 | 0.90 | 0.85 |
| OGE | 0.88 | 0.80 | 0.84 |
| POM | 0.72 | 0.80 | 0.76 |
| PCG | 0.58 | 0.55 | 0.57 |
| PNW | 0.73 | 0.70 | 0.72 |
| POR | 0.75 | 0.75 | 0.75 |
| SCG | 0.71 | 0.70 | 0.70 |
| SRE | 0.80 | 0.80 | 0.80 |
| SO | 0.54 | 0.55 | 0.54 |
| TE | 0.89 | 0.85 | 0.87 |
| ULL | 0.72 | 0.70 | 0.71 |
| WC | 0.75 | 0.70 | 0.72 |
| WR | 0.72 | 0.75 | 0.73 |
| WEC | 0.64 | 0.65 | 0.64 |
| XEL | 0.62 | 0.65 | 0.64 |
|  |  |  |  |
|  | 0.74 | 0.73 | 0.73 |
|  | 0.75 | 0.70 | 0.75 |
|  | 0.05 | 0.05 | 0.04 |
|  |  |  |  |


| Risk-free rate | Avg. <br> bota | Mkt return | Mkt Risk Premium | ROE Per Company | Comp. ROE <br> Outlier <br> labelling | ROE Par Staff | Staff ROE Outlier labelling |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 3.08\% | 0.76 | 13.19\% | 10.11\% | 10.75\% |  | 10.16\% |  |
| 3.08\% | 0.77 | 13.19\% | 10.11\% | 10.87\% |  | 10.66\% |  |
| 3.08\% | 0.76 | 13.19\% | 10.11\% | 10.72\% |  | 11.17\% |  |
| 3.08\% | . 0.69 | 13.19\% | 10.11\% | 10.02\% |  | 10.16\% |  |
| 3.08\% | 0.75 | 13.19\% | 10.11\% | 10.69\% |  | 10.16\% |  |
| 3.08\% | 0.88 | 13.19\% | 10.11\% | 12.01\% | OUTLIER | 11.67\% |  |
| 3.08\% | 0.79 | 13.19\% | 10.11\% | 11.11\% |  | 11.17\% |  |
| 3.08\% | 0.74 | 13.19\% | 10.11\% | 10.52\% |  | 10.16\% |  |
| 3.08\% | 0.58 | 13.19\% | 10.11\% | 8.90\% | OUTLIER | 9.15\% |  |
| 3.08\% | 0.66 | 13.19\% | 10.11\% | 9.75\% |  | 10.16\% |  |
| 3.08\% | 0.75 | 13.19\% | 10.11\% | 10.64\% |  | 10.66\% |  |
| 3.08\% | 0.76 | 13.19\% | 10.11\% | 10.77\% |  | 11.17\% |  |
| 3.08\% | 0.77 | 13.19\% | 10.11\% | 10.89\% |  | 10.66\% |  |
| 3.08\% | 0.73 | 13.19\% | 10.11\% | 10.45\% |  | 10.16\% |  |
| 3.08\% | 0.76 | 13.19\% | 10.11\% | 10.81\% |  | 10.16\% |  |
| 3.08\% | 0.85 | 13.19\% | 10.11\% | 11.66\% |  | 12.18\% | OUTLIER |
| 3.08\% | 0.84 | 13.19\% | 10.11\% | 11.58\% |  | 11.17\% |  |
| 3.08\% | 0.76 | 13.19\% | 10.11\% | 10.79\% |  | 11.17\% |  |
| 3.08\% | 0.57 | 13.19\% | 10.11\% | 8.82\% | OUTLIER | 8.64\% |  |
| 3.08\% | 0.72 | 13.19\% | 10.11\% | 10.31\% |  | 10.16\% |  |
| 3.08\% | 0.75 | 13.19\% | 10.11\% | 10.65\% |  | 10.66\% |  |
| 3.08\% | 0.70 | 13.19\% | 10.11\% | 10.20\% |  | 10.16\% |  |
| 3.08\% | 0.80 | 13.19\% | 10.11\% | 11.14\% |  | 11.17\% |  |
| 3.08\% | 0.54 | 13.19\% | 10.11\% | 8.57\% | OUTLIER | 8.64\% |  |
| 3.08\% | 0.87 | 13.19\% | 10.11\% | 11.87\% | OUTLIER | 11.67\% |  |
| 3.08\% | 0.71 | 13.19\% | 10.11\% | 10.25\% |  | 10.16\% |  |
| 3.08\% | 0.72 | 13.19\% | 10.11\% | 10.40\% |  | 10.16\% |  |
| 3.08\% | 0.73 | 13.19\% | 10.11\% | 10.50\% |  | 10.66\% |  |
| 3.08\% | 0.64 | 13.19\% | 10.11\% | 9.60\% |  | 9.65\% |  |
| 3.08\% | 0.64 | 13.19\% | 10.11\% | 9.50\% |  | 9.65\% |  |
|  |  |  |  | 10.49\% |  | 10.44\% |  |
|  |  |  |  | 10.64\% |  | 10.16\% |  |
|  |  |  |  | 0.36\% |  | 0.51\% |  |


|  |  | Ticker | Bloomberg | Value Line | Average | Risk-free rate | Avg. beta | Mkt return | Mkt Risk Premium | ROE Per Company | Comp. ROE Outlier labelling | ROE Per Staff | Staff ROE Outlier labelling |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Allete | ALE | 0.82 | 0.70 | 0.76 | 3.08\% | 0.76 | 13.19\% | 10.11\% | 11.36\% |  | 10.92\% |  |
| 2 | Alliant Energy Corp. | LNT | 0.79 | 0.75 | 0.77 | 3.08\% | 0.77 | 13.19\% | 10.11\% | 11.45\% |  | 11.29\% |  |
| 3 | Ameren Corp. | AEE | 0.71 | 0.80 | 0.76 | 3.08\% | 0.76 | 13.19\% | 10.11\% | 11.34\% |  | 11.67\% |  |
| 4 | American Electric Power | AEP | 0.67 | 0.70 | 0.69 | 3.08\% | 0.69 | 13.19\% | 10.11\% | 10.81\% |  | 10.92\% |  |
| 5 | Avista Corp. | AVA. | 0.81 | 0.70 | 0.75 | 3.08\% | 0.75 | 13.19\% | 10.11\% | 11.32\% |  | 10.92\% |  |
| 6 | Black Hills Corp. | BKH | 0.92 | 0.85 | 0.88 | 3.08\% | 0.88 | 13.19\% | 10.11\% | 12.30\% | OUTLIER | 12.05\% |  |
| 7 | Center Point Energy | CNP | 0.79 | 0.80 | 0.79 | 3.08\% | 0.79 | 13.19\% | 10.11\% | 11.63\% |  | 11.67\% |  |
| 8 | Cleco Corp. | CNL | 0.77 | 0.70 | 0.74 | 3.08\% | 0.74 | 13.19\% | 10.11\% | 11.19\% |  | 10.92\% |  |
| 9 | Consolidated Edison | ED | 0.55 | 0.60 | 0.58 | 3.08\% | 0.58 | 13.19\% | 10.11\% | 9.98\% |  | 10.16\% |  |
| 10 | Dominion Resources, Inc. | D | 0.62 | 0.70 | 0.66 | 3.08\% | 0.66 | 13.19\% | 10.11\% | 10.61\% |  | 10.92\% |  |
| 11 | DTE Energy Co. | DTE | 0.74 | 0.75 | 0.75 | 3.08\% | 0.75 | 13.19\% | 10.11\% | 11.27\% |  | 11.29\% |  |
| 12 | Edison International | EIX | 0.72 | 0.80 | 0.76 | 3.08\% | 0.76 | 13.19\% | 10.11\% | 11.37\% |  | 11.67\% |  |
| 13 | Great Plains Energy Inc. | GXP | 0.80 | 0.75 | 0.77 | 3.08\% | 0.77 | 13.19\% | 10.11\% | 11.47\% |  | 11.29\% |  |
| 14 | Hawaiian Electric | HE | 0.76 | 0.70 | 0.73 | 3.08\% | 0.73 | 13.19\% | 10.11\% | 11.13\% |  | 10.92\% |  |
| 15 | IDACORP, inc. | IDA | 0.83 | 0.70 | 0.76 | 3.08\% | 0.76 | 13.19\% | 10.11\% | 11.41\% |  | 10.92\% |  |
| 16 | Integrys | TEG | 0.80 | 0.90 | 0.85 | 3.08\% | 0.85 | 13.19\% | 10.11\% | 12.04\% | OUTLIER | 12.43\% | OUTLIER |
| 17 | OGE Energy | OGE | 0.88 | 0.80 | 0.84 | 3.08\% | 0.84 | 13.19\% | 10.11\% | 11.98\% | OUTLIER | 11.67\% |  |
| 18 | Pepco Holdings, Inc. | POM | 0.72 | 0.80 | 0.76 | 3.08\% | 0.76 | 13.19\% | 10.11\% | 11.39\% |  | 11.67\% |  |
| 19 | PG\&E Corp | PCG | 0.58 | 0.55 | 0.57 | 3.08\% | 0.57 | 13.19\% | 10.11\% | 9.91\% |  | 9.78\% |  |
| 20 | Pinnacle West Capital | PNW | 0.73 | 0.70 | 0.72 | 3.08\% | 0.72 | 13.19\% | 10.11\% | 11.03\% |  | 10.92\% |  |
| 21 | Portland General | POR | 0.75 | 0.75 | 0.75 | 3.08\% | 0.75 | 13.19\% | 10.11\% | 11.28\% |  | 11.29\% |  |
| 22 | SCANA Corp. | SCG | 0.71 | 0.70 | 0.70 | 3.08\% | 0.70 | 13.19\% | 10.11\% | 10.95\% |  | 10.92\% |  |
| 23 | Sempra Energy | SRE | 0.80 | 0.80 | 0.80 | 3.08\% | 0.80 | 13.19\% | 10.11\% | 11.66\% |  | 11.67\% |  |
| 24 | Southern Co. | SO | 0.54 | 0.55 | 0.54 | 3.08\% | 0.54 | 13.19\% | 10.11\% | 9.72\% |  | 9.78\% |  |
| 25 | TECO Energy, Inc. | TE | 0.89 | 0.85 | 0.87 | 3.08\% | 0.87 | 13.19\% | 10.11\% | 12.20\% | OUTLIER | 12.05\% |  |
| 26 | UIL Holdings Corp. | UIL | 0.72 | 0.70 | 0.71 | 3.08\% | 0.71 | 13.19\% | 10.11\% | 10.98\% |  | 10.92\% |  |
| 27 | Vectren Corp. | WC | 0.75 | 0.70 | 0.72 | 3.08\% | 0.72 | 13.19\% | 10.11\% | 11.10\% |  | 10.92\% |  |
| 28 | Westar Energy | WR | 0.72 | 0.75 | 0.73 | 3.08\% | 0.73 | 13.19\% | 10.11\% | 11.17\% |  | 11.29\% |  |
| 29 | Wisconsin Energy | WEC | 0.64 | 0.65 | 0.64 | 3.08\% | 0.64 | 13.19\% | 10.11\% | 10.50\% |  | 10.54\% |  |
| 30 | Xcel Energy, Inc. | XEL | 0.62 | 0.65 | 0.64 | 3.08\% | 0.64 | 13.19\% | 10.11\% | 10.42\% |  | 10.54\% |  |
|  | Mean |  | 0.74 | 0.73 | 0.73 |  |  |  |  | 11.17\% |  | 11.13\% |  |
|  | Median |  | 0.75 | 0.70 | 0.75 |  |  |  |  | 11.28\% |  | 10.92\% |  |
|  | Median Absolute Deviation(MAD) |  | 0.05 | 0.05 | 0.04 |  |  |  |  | 0.27\% |  | 0.38\% |  |


| Mr. HEVERT'S APPROACH |  | STAFF APPROACH |  |
| :--- | :--- | :--- | :--- |
|  |  |  |  |
| 3-STAGE | $10.36 \%$ |  | $9.74 \%$ |
| 2-STAGE | $10.46 \%$ |  | $9.88 \%$ |
| Average DCF | $10.41 \%$ |  | $9.81 \%$ |
|  |  |  |  |
| CAPM | $10.83 \%$ |  | $10.54 \%$ |
| 2/3 DCF +1/3 CAPM | $10.55 \%$ |  | $10.05 \%$ |

## Comment

An ROE or beta value is declared an outlier if $0.6745^{*} \mathrm{Abs}$ (value -median ) $>2.2^{*} \mathrm{MAD}$, where MAD is median of the absolute deviations about the median. This approach is based on superior parametric technique developed by Boris Iglewicz and David Hoaglin (1993) called modified Z-score approach for outlier identification and labeling. (Boris Iglewicz and David Hoaglin (1993), "Volume 16: How to Detect and Handle Outliers", The ASQC Basic References in Quality Control: Statistical Techniques, Edward F. Mykytka, Ph.D., Editor). See also David C. Hoaglin and Boris Iglewicz, "Fine-Tuning Some Resistant Rules for Outlier Labeling", Journal of the American Statistical Association, Vol. 82, No. 400 (Dec., 1987), pp. 11471149

# CAPITAL STRUCTURE AND CORPORATE <br> FINANCING DECISIONS 

Theory, Evidence, and Practice

## H. Kent Baker and Gerald S. Martin

The Robert W. Kolb Series in Finance

John Wiley \& Sons, Inc.

Published by John Wiley \& Sons, Inc., Hoboken, New Jersey. Published simultaneously in Canada.

No part of this publication may be reproduced, stored in a retrieval systern, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning, or otherwise, except as permitted under Section 107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or authorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, MA 01923, (978) 750-8400, fax (978) 646-8600, or on the Web at www.copyright.com. Requests to the Publisher for permission should be addressed to the Permissions Department, John Wiley \& Sons, Inc., 111 River Street, Hoboken, NJ 07030, (201) 748-6011, fax (201) 748-6008, or online at http://www.wiley.com/go/permissions.

Limit of Liability/Disclaimer of Warranty: While the publisher and author have used their best efforts in preparing this book, they make no representations or warranties with respect to the accuracy or completeness of the contents of this book and specifically disclaim any implied warranties of merchantability or fitness for a particular purpose. No warranty may be created or extended by sales representatives or written sales materials. The advice and strategies contained herein may not be suitable for your situation. You should consult with a professional where appropriate. Neither the publisher nor author shall be liable for any loss of profit or any other commercial damages, including but not limited to special, incidental, consequential, or other damages.

For general information on our other products and services or for technical support, please contact our Customer Care Department within the United States at (800) 762-2974, outside the United States at (317) 572-3993 or fax (317) 572-4002.

Wiley also publishes its books in a variety of electronic formats. Some content that appears in print may not be available in electronic books. For more information about Wiley products, visit our web site at www.wiley.com.

## Library of Congress Cataloging-in-Publication Data:

Capitai structure and financing decisions : theory, evidence, and practice / H. Kent Baker and Gerald S. Martin, editors.
p. cm.-(The Robert W. Kolb series in finance)

Includes bibliographical references and index.
ISBN 978-0-470-56952-8 (cloth); ISBN 978-1-118-02292-4 (ebk);
ISBN 978-1-118-02293-1 (ebk); ISBN 978-1-118-02294-8 (ebk)

1. Corpotations-Finance. 2. Capital investments. I. Baker, H. Kent (Harold Kent),

1944- II. Martin, Gerald S. III. Title: Capital structure and corporate financing
decisions.
HG4026.C2424 2011
$658.15-\mathrm{dc} 22$
2010045662
Printed in the United States of America
$\begin{array}{llllllllll}10 & 9 & 8 & 7 & 6 & 5 & 4 & 3 & 2 & 1\end{array}$


Exhibit 11.4 Plot of Historical Betas Using Two Different Value Weighted Market Indices Note: This exhibit plots the relationship between two sets of beta estimates for S\&P 500 companies using five years of historic data. Betas using the $5 \&{ }^{[ } P 300$ Index as a proxy for the market are plotted on the vertical axis. Betas using the CRSP Value Weighted Index as a proxy for the market are plotted on the horizontal axis. The exhibit also reports the resuits of regression analysis of the two sets of betas where $y$ represents the vertical axis and $x$ the horizontal axis.

On the other hand, as illustrated in Exhibit 11.4 both the value-weighted CRSP index and the S\&P 500 (also value weighted) yield very similar beta estimates. These sample results illustrate the importance of choosing a value-weighted index (theory's suggestion) in estimating historic betas. The choice among broadly diversified value weighted indices is less critical. We adopt historic betas using the S\&P 500 to estimate capital costs.

Historic betas do not, however, mirror those from Value Line. Exhibit 11.3 shows that Value Line betas have much less cross-sectional variation than the historic figures. This comes as no surprise given that historic estimates, unlike Value Line's approach, involve no input from analysts. Value Line's adjustments also appear informed by more than the type of simple smoothing done by Bloomberg, which uses the following formula: adjusted beta $=$ historic beta $(0.67)+0.33$. Exhibit 11.5 plots the distribution for historic, Value Line, and adjusted betas using Bloomberg's formula applied to the historic betas. Exhibit 11.5 conveys a key message for analysts: be wary of blindly using historic betas from individual company data. The tails of the distribution for historic betas contain significant measurement error. A clear advantage of Value Line betas (or those from other providers who do more than just historical regressions) is that they reflect professionaI judgment and attention to statistical detail. Moreover, they are data directly available to and used by investors. The objective is to capture investors' views of future risk. As various estimates of WACC are presented, the difference that the choice of beta makes, including using industry averages to reduce measurement error, is examined.


Exhibit 11.5 Frequency Distribution of Value Line, Historic, and Adjusted Historic Betas Note: The exhibit plots the frequency of betas across the sample firms using different estimation methods. Historical betas use five years of data with the $S \& P 500$ index as a proxy for the market. Adjusted betas are historical betas converted using the Bloomberg adjustment discussed in the text. Value Line betas come from Value Line.

## THREE APPROACHES TO USING DATA FROM COMPARABLE FIRMS

Recognizing that measurement error is a fact of life, good practice in cost of capital estimation calls for gathering data on comparable firms. A recommended approach is to match firm on business risk and to look at capital structure and size. An indepth treatment would arm the analyst with details of each company's businesscs. This chapter uses all firms in an industry. The analysis focuses on three methods of estimating a company's WACC, two of which take advantage of data from other firms comparable in risk to the company:

## "Single" Company Estimates of WACC

An initial step is to calculate a "single company" WACC based solely on data for the company. This may be the analyst's only resort if no good comparables can be found. As always, the most difficult ingredient to estimate is the cost of equity even if adopting the CAPM. Using Equations $\mathbf{1 1 . 1}$ and 11.2 , a single company WACC is estimated for each firm in the sample. As a point of reference, the calculations for FMG earlier in the chapter roughly parallel the average characteristics of the sample firms. For instance, the average debt weightacross companies was 0.27 .

## Industry Average WACC

Many analysts stop with a standalone calculation, but this is not advisable. Much can be learned from the other companies. One straightforward step is to caiculate a single company WACC for each firm and then average across the industry. This average helps mollify the impacts of measurement error. Moreover,

## CFA Institute

Whose Beta Is Best?
Author(s): Diana R. Harrington
Reviewed work(s):
Source: Financial Analysts Journal, Vol. 39, No. 4 (Jul. - Aug., 1983), pp. 67-73
Published by: CFA Institute
Stable URL: http://www.jstor.org/stable/4478666
Accessed: 12/06/2012 14:16

Your use of the JSTOR archive indicates your acceptance of the Terms \& Conditions of Use, available at http://www.jstor.org/page/info/about/policies/terms.jsp

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.


CFA Institute is collaborating with JSTOR to digitize, preserve and extend access to Financial Analysts Journal.
$\qquad$

by Diana R. Harrington

# Whase Beta is Best? 

A cursory examination of the betas provided by different investment services reveals that these betas vary greatly, even when they are calculated on the basis of historical returns. How can one determine which beta is best? Using a mean square error test, the author evaluates betas from various commercial sources in terms of their accuracy in predicting subsequent betas and in predicting subsequent returns.

In general, the longer the horizon and the larger the portfolio, the better the forecast accuracy of any beta. On the other hand, all the methods tested left the possibility for over- and underestimations of troubling magnitudes.

More specifically, in terms of predicting ensuing betas, the Value Line forecasts exhibited the lowest mean square errors for a sample of utility stocks, but a naive forecast (assuming betas would equal one) performed almost as well. The Rosenberg long-term fundamental beta proved superior in forecasting the betas of a sample of industrial stocks. Performance in predicting return varied greatly, depending on the model parameters for market return and risk-free rate. A naive model performed best for the utility sample, but no one beta proved best in the case of the industrial sample.

BETA! It's hard to keep track of the number of articles that have been written about what it is and isn't, how to calculate, adjust, refine it (or find a better one), or why it is a concept whose time has passed. Some people suggest that beta is being kept alive by "hype" alone.
Is another article about beta like a discussion about the Edsel--historically interesting but of little practical value? I think not, and for several reasons. The primary reason is that beta, while under increasing scrutiny, is, at the same time, becoming more widely used to solve practical problems.
As investment analysts, portfolio managers and corporate planners and financial staff have increased their use of beta, several organizations have started to provide beta forecasts for a large number of common stocks. These forecasts, derived in a variety of ways, are revised and published monthly or quarterly, and beta users have begun to ask: "How good are these forecasts?"
That question led to this article. In order to provide some perspective on the quality of commer-
cially available betas, I tested the accuracy of these beta forecasts and of forecasts that could be made by using several other methods available to the practitioner.

## Beta Use and Users

The following description of how betas are being used in evaluating stocks, optimizing portfolios and evaluating performance will demonstrate the importance of good beta forecasts.
Essentially, beta is used two ways. First, it is used as a part of the Capital Asset Pricing Model (CAPM) to forecast the returns from a stock or portfolio. ${ }^{1}$ The forecasts are then used by

[^30]$\qquad$
establishing the rates charged customers. . .(This use of the CAPM, infrequent in the past, has increased considerably since $1975 .^{2}$ )
. . .corporate managers, in search of ways to estimate corporate or divisional hurdle rates; they have used and are using the CAPM to estimate costs of equity.
Beta by itself has been used by practitioners even more extensively, and perhaps more creatively, than the CAPM. Beta has been used to estimate the "risk class" of a given stock so that
> ...rate analysts in public utility proceedings can choose a group of comparable-risk, nonutility companies against which to test the "fairness" of the return on equity for a particular utility...
> ...security analysts and portfolio managers can identify over- and undervalued stocks...
> ...portfolio managers can design portfolios with particular risk characteristics. (Portfolio optimization models often require the manager to set a level of risk-beta-that will be tolerated in the portfolio.)

The increased use of beta has increased the need for beta forecasts. The practitioner has two primary methods for obtaining the necessary beta estimates-calculate betas from historical data or use beta estimates made by one of the investment advisory services. In either case, the user must be aware of the difficulty of obtaining a useful beta estimate.

Unfortunately, there is no single best method of estimating a beta. Even beta estimates based on the same historical returns may vary depending on such things as the time period over which the beta is calculated and the index chosen as a
proxy for the market. The beta services use various methods for deriving their estimates. Some of the betas rest solely on the historical data. Others are adapted for problems such as the mean regression tendency of beta that were identified and recognized by the academic community. ${ }^{3}$ Still others have created fundamental beta estimates from multivariate regressions of time-series, firm-fundamental characteristics. ${ }^{4}$
To have some idea of the difficulties encountered in choosing between beta estimates, one need only look at the differences between the betas estimated by the popular services. All the betas shown in Table I (except two of those provided by Barr Rosenberg) were taken from services that calculate betas from historical returns. The table vividly demonstrates just how different beta estimates can be when made by different services, for different stocks, and at different points in time.

Choosing a beta, then, is no simple task. If the user recognizes the substantive differences that can occur between betas from commercially published services, she or he has no way, other than intuition, of choosing among the offerings. It may be, however, that more information about some of these commercially available betas would allow a more informed choice.
To provide information to beta users, I examined the estimated betas of stocks in two sample groups-public utility stocks and industrials. Public utilities, whose betas are usually below the market average of 1.0 , have had, over time, the most stable and significant betas; the stocks of

Table I Betas Calculated by Investment Services for Selected Stocks

|  | January 1974 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Merrill Lynch (Adjusted) |  | Market Model (Adjusted) |  | Barr Rosenberg |  |  | Value Line |
|  |  |  | Historical | Short-Term Fundamental | Long-Term Fundamental |  |
| American Airlines | 2.04 | (1.69) |  |  | 2.11 | (1.01) | 2.12 | 2.35 | 2.22 | 2.26 |
| American Cyanamid | 0.99 | (1.00) | 0.97 | (0.98) | 0.98 | 1.01 | 1.03 | 1.08 |
| Houston Industries | 1.08 | (1.05) | 1.12 | (1.00) | 1.21 | 1.12 | 1.10 | 0.77 |
| San Diego Gas and Electric | 0.99 | (0.99) | 0.98 | (0.99) | 1.03 | 0.87 | 0.90 | 0.73 |
| Southern California Edison | 1.33 | (1.22) | 1.33 | (1.02) | 1.32 | 0.99 | 0.99 | 0.98 |
|  | December 1972 |  |  |  |  |  |  |  |
| American Airlines | 1.53 | (1.35) | 1.15 | (0.77) | 1.41 | 1.67 | 1.60 | 1.45 |
| American Cyanamid | 1.04 | (0.84) | 0.84 | (0.76) | 0.95 | 0.95 | 0.98 | 1.05 |
| Houston Industries | 1.00 | (1.00) | 0.69 | (0.73) | 1.05 | 1.08 | 0.98 | 0.90 |
| San Diego Gas and Electric | 0.61 | (0.74) | 0.48 | (0.66) | 0.65 | 0.82 | 0.88 | 0.70 |
| Southern California Edison | 0.72 | (0.81) | 0.52 | (0.67) | 0.72 | 0.82 | 0.84 | 0.80 |

[^31]$\qquad$

Table II Characteristics of the Beta Predictors

| Source | Method | Time Period | Interval | Index | Special Notes | Available From |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Merrill Lynch (ML1) | OLS ${ }^{\text {a }}$ | 5 years | monthly | S\&P 500 | price relatives only | 1972 |
| Merrill Lynch (ML2) | OLS/Bayesianadjusted ${ }^{\text {a }}$ | 5 years | monthly | S\&P 500 | price relatives only | 1972 |
| Value Line (Value Line) | OLS ${ }^{\text {a }}$ | 5 years | weekly | NYSE Composite | price relatives only | 1972 |
| Drexel Burnham Lambert (Drexel) | OLS/Bayesianadjusted ${ }^{\text {a }}$ | 8 cycles | 8 cycles as defined by Drexel | S\&P 500 | Sample: 28 utilities, 16 industrials | 10/1974 |
| Wilshire Associates (Wilshire) | Fundamental | - | quarterly | - |  | 1971-77 |
| Barr Rosenberg \& Assoc. (RF1) | OLS ${ }^{\text {a }}$ | 5 years | monthly | S\&P 500 | compound returns | 1974 |
| Barr Rosenberg \& Assoc. (RF2) | Fundamental ${ }^{\text {b }}$ | - | - | - | - | 1974 |
| Barr Rosenberg \& Assoc. (RF3) | Fundamental ${ }^{\text {b }}$ | - | - | - | - | 1974 |
| Ordinary Least Squares (OLS) | OLS ${ }^{\text {a }}$ | 5 years | monthly | S\&P 500 | compound returns | N/A |
| Adjusted Ordinary Least Squares (OLSB) | OLS/Bayesianadjusted ${ }^{\text {a }}$ | 5 years | monthly | S\&P 500 | compound returns | N/A |
| Naive (Naive 2) | $\beta=$ mean of the sample (utilities or industrials) | 5 years | monthly | S\&P 500 | compound returns | N/A |
| Naive (Naive 1) | $\beta=1$ | 5 years | N/A | N/A | N/A | N/A |
| $\mathrm{N} / \mathrm{A}=$ not applicable |  |  |  |  |  |  |
| $\mathrm{R}_{\mathrm{j}}=\alpha_{\mathrm{j}}+\beta_{\mathrm{i}}\left(\mathrm{R}_{\mathrm{m}}\right)+\epsilon_{\mathrm{j}},$ <br> where: |  |  |  |  |  |  |
| $\mathrm{R}_{\mathrm{i}}=$ the total returns on a particular security <br> $\mathrm{R}_{\mathrm{m}}=$ the return on the market, <br> $\alpha_{i}=$ the intercept from the regression, <br> $\epsilon_{j}=$ the residuals, or errors, and <br> $\beta_{j}=$ the slope of the regression line. | rity or portfolio, |  |  |  |  |  |
| b. A Rosenberg Assoc. spokesman stated that this to provide better betas for utilities is being d | this particular fun developed by them | mental pred | diction proces | is not good for ut | ity stocks. Another met | od designed |

industrial firms typically have betas near or above 1.0. I gathered, for each stock, eight beta forecasts from five commercial beta producers. In addition, I calculated two other betas from historical returns; these are the kind of betas that practitioners might calculate themselves. Those two betas, plus two very simple, naive, forecasts, were included for comparison. Table II describes each of the 12 betas included in the study.

## Beta Estimates as Predictors of Beta

The best test of beta forecast accuracy is one that measures the size of the errors that could be made if one were to use the forecast to predict. Thus each forecast was used to predict the actual, ensuing, beta and the difference between the predicted and actual betas was measured. (The actual betas were ordinary least-squares betas calculated using monthly total rates of return for each stock and the Standard \& Poor's (S\&P) $500 .{ }^{5}$ ) These forecast errors were squared, then averaged, and the mean square error for each stock was averaged for each of the two samples. ${ }^{6}$

This mean square error (MSE) test is especially useful since it can be used to determine the differences in accuracy of the beta forecasts. It can also be used to evaluate three potential sources of error-a consistent over- or underprediction (bias), an error that is linked to the size of the beta (inefficiency), or random error. Since some beta services purport to reduce one of these sources of error, such an analysis is useful.?

## Time Horizon and Portfolio Effects

In executing the study, I attempted to approximate the way a practitioner might use these beta forecasts. Investors with a buy-and-hold strategy should be interested in longer horizons (four years was the longest from the available data), whereas those who trade more frequently would be interested in the accuracy of beta forecasts over shorter horizons. While shorter actual betas would be more difficult to forecast accurately because of the limited actual data, horizons of one, two, three and four years were included. In addition, because earlier tests showed that errors

Table III MSE and Mean Forecast Beta Using Naive 1 Beta Forecast

| Horizon | Utility Sample |  |  | Industrial Sample |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | MSE | Mean Beta | MSE as \% of Mean | MSE | Mean Beta | MSE as \% of Mean |
| 1 year | 0.1617 | 0.6795 | 24\% | 0.4176 | 1.1304 | 37\% |
| 2 years | 0.1092 | 0.6669 | 16 | 0.1092 | 1.1103 | 23 |
| 3 years | 0.0866 | 0.6348 | 14 | 0.0866 | 1.0707 | 18 |
| 4 years | 0.0630 | 0.5854 | 11 | 0.0630 | 0.9943 | 17 |

were significantly reduced when individual stocks were placed in portfolios, I tested beta forecasts for portfolios of five, 10 and 15 randomly chosen stocks from each of the two samples. ${ }^{8}$
Table III shows the results of using the Naive 1 estimate of beta (all beta forecasts equal to 1.0) to forecast betas over various time horizons. The forecasts made using betas from other sources yielded similar results. ${ }^{9}$

Several things are immediately apparent. First, as we might have anticipated, the longer the forecast horizon, the smaller the MSE (the random-error portion dropping most dramatically). Second, the MSEs for the utility sample were smaller than those for the industrials. Because the average beta for a utility is smaller than that for the average industrial, however, the real magnitude of the errors can only be seen in comparison with the average beta forecast. The table shows that the MSEs of the utility forecast were smaller in both an absolute and relative sense: Utility betas are more accurately forecast.

Table IV shows the results of using the Merrill Lynch unadjusted beta forecast in a portfolio context. The accuracy of the forecast improved as the size of the portfolio increased-that is, the MSE dropped, the reduction stemming from reductions in random error. The industrial sample MSE for the unadjusted Merrill Lynch beta five-stock portfolio was 0.2013; for the 15 -stock portfolios, the MSE was 0.0600 .

For the practitioner, these findings underline old lessons. First, the longer the horizon, the better the forecast, as the short-term errors cancel out. Second, better forecasts come when portfolios, rather than single securities, are being forecast; once again, errors cancel out.

## Ranking the Forecasting Methods

The rankings by MSE of the various methods of forecasting beta were relatively stable over different horizons, particularly in the case of the utility sample. Table V shows that, for the utility

Table IV Portfolio Effect Using Merrill Lynch
Unadjusted Forecast and One-Year Horizon

| Portfolio Size | MSE, Utility Sample | MSE, Industrial Sample |
| ---: | :---: | :---: |
| 5 stocks | 0.0874 | 0.2013 |
| 10 stocks | 0.0733 | 0.0728 |
| 15 stocks | 0.0723 | 0.0600 |

sample, the Value Line forecast had the smallest MSE over each horizon. What is somewhat surprising is that the Naive 1 beta (all beta forecasts equal to 1.0) had the next lowest MSE for three of the four horizons. This beta is the simplest forecast that could be made. Note that, while the MSE differences were not large, the forecasts with the lowest MSEs had errors that were of very similar magnitude. Thus, from an economic point of view, when the errors are similar, the cheapest beta may be the best.

Typically, the beta forecasts for the utility sample overestimated the actual betas. Because the betas for this sample are generally small, this result suggests inefficiency in the beta forecasts. An inefficient forecast will result in positive errors at low betas and negative errors at high betas.

The results for the utility sample suggest several conclusions. First, sizable errors can be made. If, for instance, your horizon was three years and you were using Value Line betas to forecast the beta for an average utility over this period, the average error you could have made would have been 0.28 . Since the mean beta forecast for Value Line was only 0.7241 , the error potential was sizable. Second, for the utilities, almost every method studied overestimated the actual beta. And third, when the direction as well as the magnitude of the error is taken into account (mean difference), the OLS forecast was better than the Value Line forecast for the utility sample. That is because the OLS beta forecasts both over- and underestimated actual betas. The

Table V MSE Results for the Utility Sample

|  |  |  |  |  |  |
| :--- | :--- | :--- | :---: | :---: | :---: |
|  | Horizon | Smallest MSE <br> (source) | Next Smallest MSE <br> (source) | Mean MSE | Maximum MSE |
| 1 year | 0.1560 (V. Line) | 0.1617 (Naive 1) | 0.2062 | 0.2857 |  |
| 2 years | 0.1005 (V. Line) | 0.1071 (OLSB) | 0.1324 | 0.2503 |  |
| 3 years | 0.0799 (V. Line) | 0.0866 (Naive 1) | 0.1166 | 0.2271 |  |
| 4 years | 0.0584 (V. Line) | 0.0630 (Naive 1) | 0.1098 | 0.1972 |  |

Table VI MSE Results for the Industrial Sample

| Horizon | Smallest MSE <br> (source) | Next Smallest MSE <br> (source) | Mean MSE | Maximum MSE |
| :--- | :---: | :---: | :---: | :---: |
| 1 year | 0.3572 (RF3) | 0.3624 (RF2) | 0.4028 | 0.5644 |
| 2 years | 0.1879 (RF3) | 0.1962 (RF2) | 0.2521 | 0.3941 |
| 3 years | 0.1399 (RF3) | 0.1434 (V. Line) | 0.1975 | 0.3337 |
| 4 years | 0.1239 (RF3) | 0.1323 (V. Line) | 0.1098 | 0.3180 |

offsetting errors yielded a better on-average forecast, a result the MSE test alone does not show.

For the industrial sample, the results, shown in Table VI, are somewhat different. The Rosenberg long-term fundamental beta (RF3) proved superior for each horizon being forecast. Again, however, the errors are sizable: For the three-year horizon, the mean error was 0.37 , compared with the mean beta forecast of 1.228 .
The implications of these findings for the beta user can be summarized as follows. (1) Longer forecast horizons provided more accurate forecasts than shorter ones. (2) Betas for larger portfolios were more accurately forecast than those for smaller portfolios. (3) The smaller MSEs were associated with the utility sample. (4) Some forecast methods consistently resulted in smaller MSEs. (5) All methods left the possibility of overand underestimations of troubling magnitude. (6) Different forecasting methods reduced inefficiency more than they reduced the bias or randomerror portion of the MSE.

## Beta Estimates as Predictors of Return

Practitioners have been using beta, not only to predict beta, but to forecast expected returns. Thus a test of beta to predict beta does not fully resolve the problem facing practitioners. To test returns-forecasting accuracy, beta predictions must be turned into forecast returns and then tested against actual returns garnered by each security over the ensuing one, two, three or four years.

The CAPM was used to turn beta forecasts into forecasts of returns. The difficulty with this approach is that CAPM theory does not provide specific directions for implementation, and academics and practitioners disagree on the proper proxies for the risk-free rate and market return. I therefore used five different combinations of various possible risk-free rate and market return proxies to forecast returns using the given beta forecasts. ${ }^{10}$ Table VII details the combinations.
The "perfect foresight" forecast was included to provide a benchmark for evaluating those models requiring forecasts for all three factors. To create the perfect foresight forecast, I assumed that one could accurately forecast the actual return on Treasury bills and the S\&P 500 over the horizons of one, two, three and four years. ${ }^{11}$

## Results

Table VIII provides the basic results for the five models. For the utility sample, the largest errors occurred with Models 1 and 2, which used a market return from 1926. Unexpectedly, for the more volatile industrials, the use of the longer market return resulted in a slightly smaller MSE. More importantly, it appeared to make little difference whether the rate of return from a short or longer-term Treasury security was used for the risk-free rate.
Note that perfect foresight did improve the results, especially for the utility sample. Even this improvement did little to yield good forecasts, however. Using perfect foresight, the utility mean error was 0.0894 , with a mean forecast return of

Table VII Risk-Free Rate and Market Return Proxies

| Model | Risk-Free Rate | Market Return* |
| :---: | :--- | :--- |
| Perfect <br> Foresight | actual return on 90-day <br> Treasury bills over period <br> being forecast | Actual return on S\&P 500 <br> over period being forecast |
| 1 | the rate on <br> 90-day Treasury bills | S\&P 500 average compound <br> return (1926 to forecast date) |
| 2 | the rate on <br> $7-$ year Treasury bonds | S\&P 500 average compound <br> return (1926 to forecast date) |
| 3 | the rate on <br> 90-day Treasury bills | S\&P 500 average compound <br> return (1950 to forecast date) |
| 4 | the rate on <br> $7-$ 7ear Treasury bonds | S\&P 500 average compound <br> return (1950 to forecast date) |

*Several investment management organizations have started to provide forecasts for the market return. Although these forecasts were not available for the full period studied, a forecast for the market return from May 1975 to December 1979 provided by Wells Fargo Investment Advisors was tested. The results were similar to the results given by the four basic models for the same period, but the MSEs for all the models tested over this period were smaller. Thus the period over which forecasts are made seems to be more important than how the forecasts are made, in determining the magnitude of the error.

Table VIII Minimum MSE Estimate by Model (three-year horizon)

|  | Utility Sample |  | Industrial Sample |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Model | MSE (source) |  | Mean Forecast |  | MSE (source) |
| ( | Mean Forecast |  |  |  |  |
| PF | 0.0080 (OLS) | 0.0880 |  | 0.0231 (Naive 2) | 0.0797 |
| 1 | 0.0104 (Naive 2) | 0.0896 |  | 0.0251 (RF3) | 0.0956 |
| 2 | 0.0105 (Naive 2) | 0.0896 | 0.0252 (RF1) | 0.0934 |  |
| 3 | 0.0098 (Naive 2) | 0.1026 | 0.0255 (OLSB) | 0.0936 |  |
| 4 | 0.0098 (Naive 2) | 0.1026 |  | 0.0256 (OLS) | 0.1036 |

*The Drexel beta, based on a more limited sample, outperformed all other forecasting methods on the basis of smaller, matched samples.
0.0880 . Even though the size of the error varies from stock to stock, the potential exists for a major misforecast. The same is true for the industrial sample, where the mean forecast, using perfect foresight, was 0.0797 , with a mean error of 0.1520 .

Finally, the accuracy of the forecast depended on the time over which it was tested (a fact of which investment professionals are all too aware), the size of the portfolio, and the length of the horizon. Again, longer periods and larger portfolios yielded the smallest errors.

## Conclusion

Forecast accuracy seems to depend more on stability of the equity markets during the time period over which one is forecasting than on any elegantly refined forecast. Using beta to forecast returns compounds forecasting difficulty but, at least in some cases, reaps the benefits of offsetting errors.
The test has provided discouraging results: No method is very accurate. If we cannot develop an
accurate beta forecast from history, is beta as a concept practically useless? No, for it is possible that history is a poor proxy for the future, and it is possible that no one has yet forecast beta with the required level of skill. Since the concept is economically logical, and the uses alluring, the arena is open for new and innovative artists. Meanwhile, Caveat Emptor.

## Footnotes

1. The CAPM is:

$$
\tilde{\mathrm{R}}_{\mathrm{j}}=\tilde{\mathrm{R}}_{\mathrm{f}}+\tilde{\beta}_{\mathrm{j}}\left(\tilde{\mathrm{R}}_{\mathrm{m}}-\tilde{\mathrm{R}}_{\mathrm{f}}\right),
$$

where:
$\tilde{\mathrm{R}}_{\mathrm{i}}=$ the expected return for the asset, security or portfolio,
$\widetilde{\mathrm{R}}_{f}=$ the expected return on a risk-free asset,
$\tilde{\mathrm{R}}_{\mathrm{m}}=$ the expected average return on all risky assets, and
$\tilde{\beta}_{j}=$ a measure of risk-the expected volatility of the asset's or portfolio's returns over time, relative to returns of $\mathrm{R}_{\mathrm{m}}$.
2. See D.R. Harrington, "The Changing Use of

Capital Asset Pricing Model in Utility Regulation," Public Utilities Fortnightly, 14 February 1980, pp. $28-30$ and "Trends in Capital Asset Pricing Model Use," Public Utilities Fortnightly, 13 August 1981, pp. 27-31.
3. $\mathrm{S} \rightarrow \mathrm{M}$. Blume, "Betas and Their Regression Tendencies," Journal of Finance, June 1975, pp. 785-796.
4. Barr Rosenberg Associates, Fundamental Risk Measurement Service (Berkeley, CA: Barr Rosenberg Associates, October 21, 1977) and Wilshire Associates, Inc., Capital Equilibrium Statistics (Santa Monica, CA: Wilshire Associates, Inc., June 30, 1978).
5. The actual betas are estimated as described in Table II and were not adjusted in any way. I was not attempting to form better forecasts from historical data, but to represent the actual relative volatility of the stocks' returns over the period being forecast.
6. The richest version of mean square error is calculated as follows:

$$
M S E=\frac{1}{n} \sum_{j=1}^{n}\left(A_{i}-P_{i}\right)^{2}
$$

where:
$\mathrm{n}=$ the number of predictions,
$j=$ the particular stock or portfolio,
$A=$ the actual beta for the security or portfolio, and
$P=$ the predicted beta for the security or portfolio;
or:

$$
\operatorname{MSE}=(\overline{\mathrm{A}}-\overline{\mathrm{P}})^{2}+\left(1-\beta_{1}\right)^{2} \mathrm{~S}_{\mathrm{p}}^{2}+\left(1-\gamma_{\mathrm{AP}}^{2}\right) \mathrm{S}_{\mathrm{A}}^{2}
$$

where:
$(\overline{\mathrm{A}}-\overline{\mathrm{P}})^{2}=$ bias, to indicate whether the average prediction $(\mathrm{P})$ is over or under the average realization (A),
$\left(1-\beta_{1}\right)^{2} S_{\mathrm{P}}{ }^{2}=$ inefficiency, the tendency for errors to be negative for high beta forecasts and positive for low beta forecasts. Where $\beta_{1}$ is the slope coefficient of $A$ regressed on $P$ and $S_{P}{ }^{2}$ is the variance of $P$, and
$\left(1-\gamma_{\mathrm{AP}}{ }^{2}\right) \mathrm{S}_{\mathrm{A}}{ }^{2}=$ random error, where $\gamma_{\mathrm{AP}}{ }^{2}$ is the coefficient of determination for the regression of $A$ on P , and $\mathrm{S}_{\mathrm{A}}{ }^{2}$ is the variance of $A$ on $P$.
To estimate the one-year MSE, the beta forecast for each stock was compared with its actual beta for the next 12 months. Since forecasts were
typically updated monthly, the reported MSE for a stock is the average of the squared errors for each of the 60 forecast dates. The MSE for the sample was the average of the average MSEs for each stock in the sample.
7. Other methods of testing forecast accuracy are reported in G. Hawawini and A. Vora, "Investment Horizon, Diversification and the Efficiency of Alternative Beta Forecasts."
$\rightarrow$ M. Blume, "On the Assessment of Risk," Joumal of Finance, March 1971, pp. 1-10 ar $\rightarrow$ R.C. Klemkosky and J.D. Martin, 'The Adjustment of Beta Forecasts," Joumal of Finance, September 1975, pp. 1123-1128.
9. The full results are provided in D.R. Harrington, 'Predicting Betas and Returns Using Commercially Available Beta Forecasts" (Darden School Working Paper, Darden Graduate School of Business, University of Virginia, Charlottesville, 1982). In addition to the results for the different forecasting methods, the paper reports the results of using other measures of predictive accuracy, including the mean difference.
10. Historical market returns were calculated using data from R.G. Ibbotson and R.A. Sinquefield, Stocks, Bonds, Bills and Inflation (Charlottesville, VA: Financial Analysts Research Foundation, 1980). Tests of the accuracy of beta in predicting returns are really a joint test of the accuracy of the beta forecast and forecasts for the market return and the risk-free rate; all could be forecast imperfectly.
11. For example, to develop the January 31, 1974 oneyear perfect foresight forecast for any stock, the beta forecast for that stock as of January 31, 1974, the actual return on 90 -day Treasury bills and the S\&P 500 for the period February 1, 1974 to January 31, 1975, were combined.

## BALTIMORE GAS AND ELECTRIC COMPANY

Dividends have been declared for the quarter ending June 30, 1983 at the following rates per share:

Common Stock-71 cents.
Preferred and Preference Stock-at the specified rates.

All are payable July 1, 1983 to holders of record at the close of business on June 10, 1983.
B. C. TRUESCHLER

Charman of the Board


[^0]:    -     -         -             -                 -                     - 

    Guarantee over bonds
    $\lfloor-\infty-]$

    ```
    Regulatory ringfence
    ```

[^1]:    ${ }^{3}$ For diversified gas companies, the "North American Diversified Natural Gas Transmission and Distribution Company" rating methodology is applied.

[^2]:    ${ }^{4}$ When take-or-pay contracts, outsourcing agreements, PPAs and other rights to capacity are accounted for as leases under US GAAP or IFRS, they are treated by Moody's as such for analytical purposes.

[^3]:    5 See "The Analysis of Off-Balance Sheet Exposures - A Global Perspective", Rating Methodology, July 2004.
    6 SFAS 167 "Amendments to FASB Interpretation No. 46(r)" will be effective Q1 2010.

[^4]:    Past performance should not and cannot be viewed as an indicator of future performance. A complete performance record is available upon request.

[^5]:    Source: BofA Merrill Lynch US Quantitative Strategy

[^6]:    * Months in screen since inception

[^7]:    Source: BofA Merrill Lynch US Quantitative Strategy
    The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

[^8]:    Months in screen since inception

[^9]:    * Months in screen since inception

[^10]:    Source: BofA Merrill Lynch US Equity and US Quant Strategy

[^11]:    ource: BofA Merrill Lynch US Equity and US Quant Strategy
    The performance does not reflect transaction costs or tax withholdings or any applicable advisory fees. Had these costs been reflected, the performance would have been lower. Performance is calculated on the basis of price return unless
     for a full explanation.

[^12]:    Past performance should not and cannot be viewed as an indicator of future performance. A complete performance record is available upon request.

[^13]:    * Months in screen since inception

[^14]:    Months in screen since inception

[^15]:    * Months in screen since inception

[^16]:    Source: BofA Merrill Lynch US Quantitative Strategy

[^17]:    BofA Merrill Lynch does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

[^18]:    Source: BofA Merrill Lynch US Equity and US Quant Strategy
    The performance does not reflect transaction costs or tax withholdings or any applicable advisory fees. Had these costs been reflected, the performance would have been lower. Performance is calculated on the basis of price return unless noted. Total return performance calculations assume that dividends paid on securities in a portfolio are deposited in a cash account on the ex-dividend date, and are not reinvested. Please see Performance Calculation methodology on page 59 for a full explanation

[^19]:    Past performance should not and cannot be viewed as an indicator of future performance. A complete performance record is available upon request.

[^20]:    Source: BofA Merrill Lynch US Quantitative Strategy

[^21]:    * Months in screen since inception

[^22]:    Months in screen since inception

[^23]:    * Months in screen since inception

[^24]:    Source: BotA Merril Lynch US Quantitative Strategy
    The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded
    portion represents actual performance since January 1989. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance

[^25]:    Source: BofA Merrill Lynch US Equity and US Quant Strategy

[^26]:    ${ }^{1}$ Merrill Lynch cost of market figure is average of Implied and Required Returns for the 3 months ending June 2012

[^27]:    William J. Bernstein is principal at Efficient Frontier Advisors, LLC, Eastford, Connecticut. Robert D. Arnott is chairman of First Quadrant, LP, and Research Affiliates, LLC, Pasadena, California.
    Note: This article was accepted for publication prior to Mr. Arnott's appointment as editor of the Financial Analysts Journal.

[^28]:    Bradford Cornell is professor of financial economics at California Institute of Technology, Pasadena.

[^29]:    *Lehigh University
    **Lehigh University
    ***Texas Tech University

[^30]:    ...analysts in public utility rate-relief proceedings to estimate the expected return on equity for a given public utility; this return-the cost of equity-when combined with the costs of other capital, becomes part of the expenses allowed the public utility when

    1. Footnotes appear at end of article.

    Diana Harrington is Associate Professor at the Colgate Darden Graduate School of Business Administration of the University of Virginia. Research for this article was funded by the Institute for Quantitative Research in Finance and the sponsors of the Darden Graduate School of Business.

[^31]:    Source: D.R. Harrington, 'Predicting Betas and Returns Using Commercially Available Beta Forecasts" (Darden School Working Paper, Darden Graduate School of Business, University of Virginia, Charlottesville, 1982).

