Exhibit____(FP-18)

BEFORE THE
STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Cases 09-E-0715, 09-G-0716, 09-E-0717, and 09-G-0718

IN THE MATTER OF

New York State Electric & Gas Corporation
And
Rochester Gas & Electric Corporation

ELECTRIC AND GAS RATES

January 2010

Exhibit____(Staff Finance Panel-18)

STANDARD
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Global Credit Portal
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Decoupling: The Vehicle For Energy Conservation?

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Decoupling: The Vehicle For Energy Conservation?

Although decoupling rate mechanisms have been in effect since the early 1980s, they were initially introduced only on a limited basis. Recent changes, including rising global warming concerns, and soaring commodity prices and building material costs, have brought decoupling to the forefront of the U.S. utility sector. To address some of the challenges, regulators are turning towards energy-efficiency programs and focusing on decoupling as the means for their implementation. In general, Standard & Poor's Ratings Services views decoupling as beneficial to the utilities' credit quality. Nevertheless, achieving energy conservation through decoupling may present risks and unforeseen challenges.

Traditional Rate Mechanism

Utility regulators have historically set electricity rates that allow the utility to recover its operating costs and earn a return on equity. Once the new rate is realized, it will remain in effect until the completion of a subsequent rate case. During the interim period, a utility's actual distribution revenues earned may fluctuate from the amount forecasted due to changes in the weather and the regional economy. For example, if the weather is warmer than expected, customers will use more kilowatt-hours (kWh) and the utility will earn more distribution revenue than was previously forecasted. Conversely, if there is an economic downturn, customers will use less kWh and the utility's actual revenues would be less than projected.

Under the traditional rate mechanism, every kWh sold adds to a utility's profits and every kWh lost due to conservation reduces profits. Thus, a utility's traditional response to higher electric demand was to increase its rate base by adding generation. There was no incentive to lower demand through an energy-efficiency program. This can be especially frustrating to both the utility and to its customers when the most cost-effective solution is to reduce demand rather than to increase supply. To attempt to resolve this inherent conflict, regulators and utilities have turned to decoupling.

Is Decoupling The Solution?

Decoupling is a mechanism that severs the relationship between sales and revenues, thereby allowing a utility to earn a predetermined level of distribution revenue regardless of the actual kWh sold. There are several variations as to how decoupling is computed, including normalizations for weather and number of customers, and caps for maximizing the rate adjustment. Still, its basic principle is that a true-up mechanism is applied to actual sales, allowing the utility to earn a predetermined level of distribution revenue. Similar to traditional rate mechanism, decoupling charges customers based on rate per kWh, but adjusts the rate to ensure that the predetermined distribution revenue is earned. By using a decoupled rate mechanism, the utility is indifferent as to the amount of kWh customers consume. This mechanism removes the disincentive for utilities to conserve, and allows a utility to execute an energy plan of either supply growth or demand reduction based on solid economics and/or other policy issues. Other potential benefits for decoupling include the following:

- Fewer rate cases filings, which result in lower overall costs for the utilities;
- Reduced need for new power plants whose costs have skyrocketed during the past five years; and

- Overall lower customer bills due to energy conservation.

However, decoupling on its own doesn't guarantee that a utility will implement a successful energy-efficiency program; it only ensures that a utility is indifferent as to the customer's usage. To persuade a utility to actively and successfully implement an energy-efficiency program, some regulators have established a separate program that provides penalties and incentives for meeting certain energy-efficiency standards. For example, Arizona Public Service Co. has $10 million annually in base rates for energy efficiency and the utility may earn an incentive of up to 10% of the net economic benefits based on its energy-efficiency performance.

Credit Implications Of Decoupling

Standard & Poor's views decoupling as a positive development from a credit perspective. Decoupling allows utilities to project cash flow more accurately and avoid much of the earnings volatility from changes to weather/economy under traditional rate mechanism. To decouple sales and revenues, most regulators use a tracking mechanism, such as a balancing account, to record deviations from the financial projections. Standard & Poor's will only consider a decoupled mechanism good for credit quality if it minimizes the lag time before deferrals are included in rates, and does not subject the rate changes to a protracted prudence review.

Nevertheless, decoupling has not been widely adopted due to the following factors:

- Some utilities prefer the traditional rate mechanism, which provides for a windfall when the weather is hotter than normal;
- Decoupling may shift the risk of sales volume variations associated with weather/economy from the utility to the customer;
- Regulators may require a lower ROE in exchange for decoupling's reduced risks;
- Decoupling's guaranteed level of distribution revenue, regardless of actual performance, may promote mediocrity in the management of a utility and cause a decline in customer service; and
- Previously failed decoupling experiences.

Gas Decoupling More Prevalent

Regulators have approved and implemented decoupling mechanisms for gas utilities in 11 states and for electric utilities in only three states. This discrepancy can be traced to the per-customer usage of each commodity (see charts 1 and 2). Natural-gas use per customer has been in decline since the 1980s due to the improvement in housing insulation, the installation of efficient gas boilers, and global warming.

Chart 1

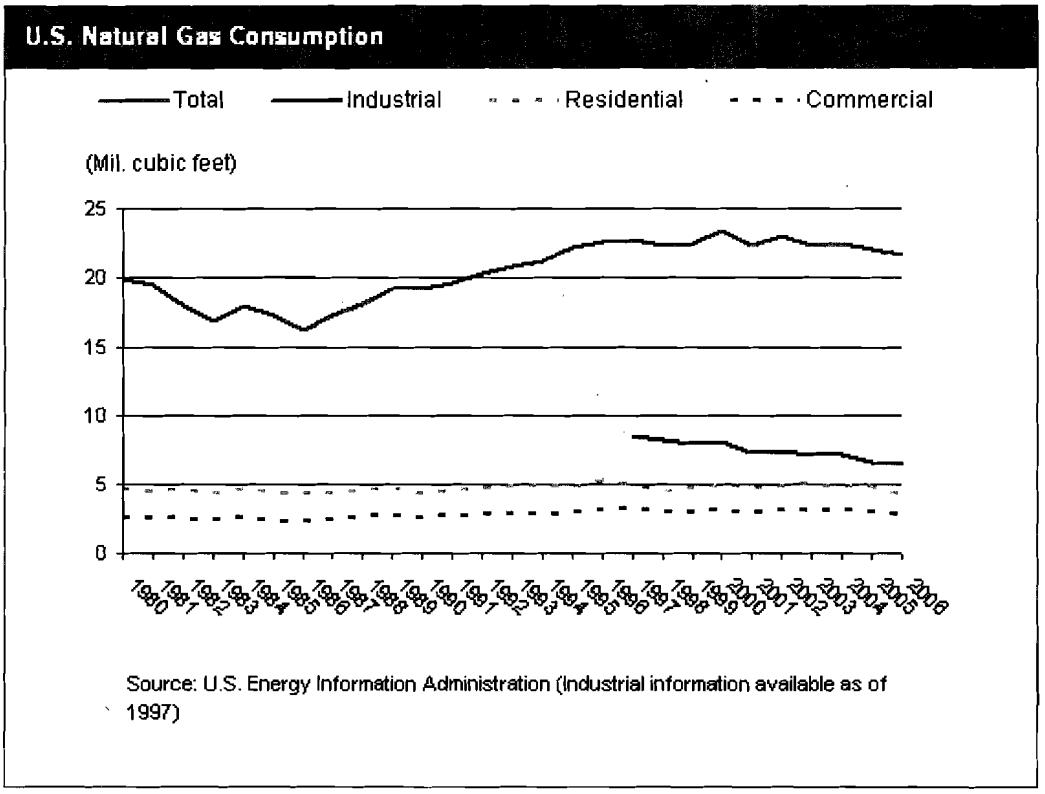
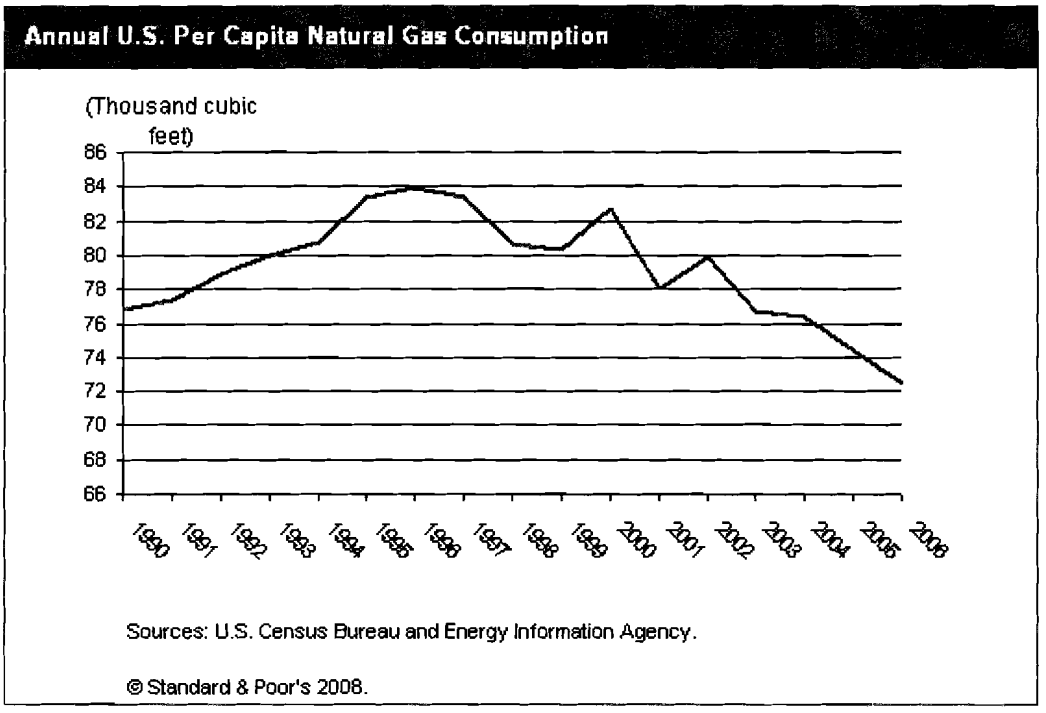
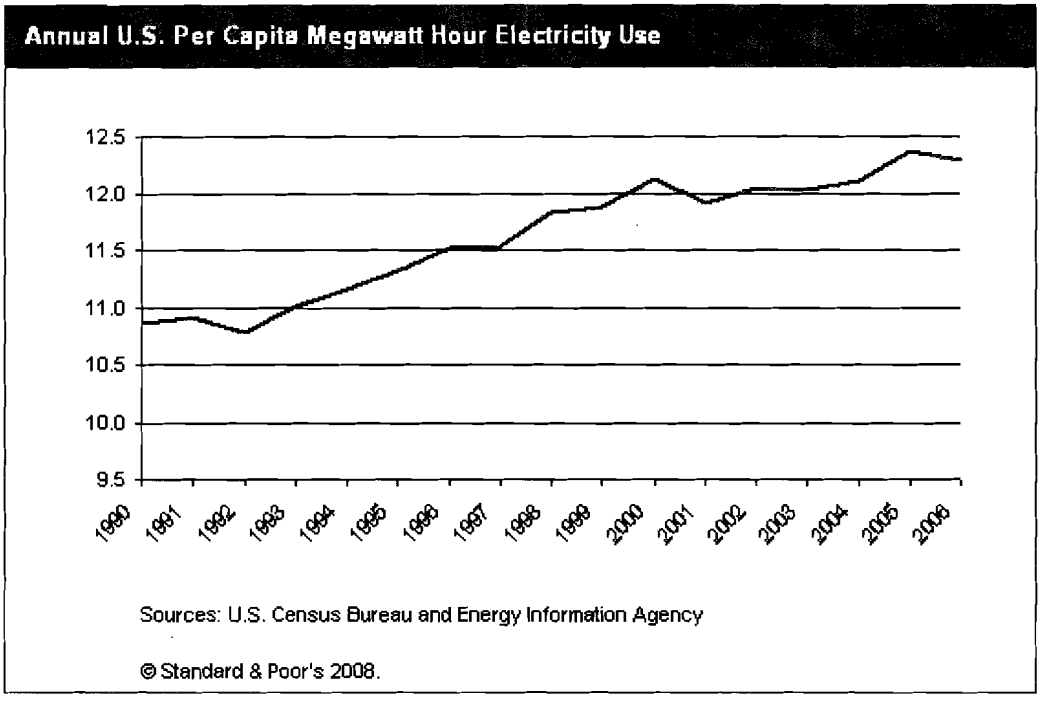


Chart 2



Electricity use per customer, for the most part, has increased over the same period (see chart 3). Despite the availability of energy-efficient air conditioners, refrigerators, and light bulbs, electric use per customer has risen due to larger homes and greater use of technology.

Chart 3



To help offset the earnings loss due to energy efficiency, gas utilities have been working with regulators to establish a decoupling mechanism. On the other hand, electric utilities may potentially face lower earnings due to decoupling because they would have to forgo the potential benefits of warmer weather or an upturn in the economy.

Decoupling's Pros and Cons

Some decoupling mechanisms isolate the kWh consumption changes solely from energy efficiency and are not affected by energy changes due to the weather/economy. These types of decoupling mechanisms effectively preserve the status quo that the risk of weather/economy remains with the utility. For example, the Illinois Commerce Commission recently approved a gas decoupling mechanism for the Peoples Gas Light and Coke Co. that provides a credit/charge to customers when the weather varies from normal and theoretically retains the risk of weather with the utility. However, these mechanisms can be complex and for the most part, many of the existing decoupling models are directly affected by changes to weather/economy and thereby shift those risks to the customer from the utility. Reacting to this shift in risk, advocacy groups and regulators have requested that customers be compensated in the form of a lower authorized ROE for utilities. These basic changes to historical risks and assumed returns have been partially attributable for the resistance towards implementing a decoupled rate mechanism.

Maine

Another setback for decoupling has been some of the past failures of its implementation. In the 1990s, Maine introduced a decoupling mechanism that led to an abrupt rise in electricity rates, and the state ultimately abandoned the program. The steep rate hike was due to the recession, rise in deferred balances over an extended period instead of a periodic true-up, and no cap on the rate increase. This and other similar experiences point to the potential risks

involved when implementing a decoupled mechanism and its unintended consequences.

California

California is the most successful example of the use of a decoupling mechanism. California first set up decoupling in 1982 and has subsequently combined it with various energy-efficiency incentive programs. This has led to today's per capita use of electricity in California to be virtually the same as in the 1980s and compares favorably to the significant increase of per capita electricity usage for the rest of the country. As of 2006, California had the lowest per capita use of electricity in the U.S. (see table). California was able to achieve these results by making energy efficiency a top priority and requiring utilities to invest in energy efficiency whenever it was cheaper than procuring power. In addition, the state successfully collaborated with businesses, non-profit organizations, government agencies, and utilities to work together to implement conservation solutions. California is clearly the best example of how implementing a decoupling mechanism can be an integral part of the overall conservation package.

Annual Per Capita Megawatt Hour Electricity Use*

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Wyoming	25.9	25.6	25.1	25.1	24.4	23.1	23.5	24.1	23.7	24.0	25.0	26.3	25.9	26.5	26.9	27.9	29.1
Kentucky	16.5	17.2	17.8	17.9	18.8	19.2	19.6	19.4	19.0	19.7	19.3	19.7	21.3	20.7	20.9	21.4	21.1
Alabama	14.8	14.9	15.0	15.4	15.9	16.3	16.9	17.1	18.0	18.1	18.8	17.8	18.6	18.7	19.3	19.6	19.8
District of Columbia	16.3	17.0	16.8	17.4	17.5	17.8	17.7	17.8	18.2	18.3	18.6	18.8	19.2	19.0	19.7	20.3	19.5
South Carolina	15.9	16.0	16.1	16.8	16.7	17.4	17.7	17.8	18.5	18.4	19.1	18.4	19.0	18.6	19.0	19.1	18.7
Louisiana	15.1	15.2	15.2	15.7	16.1	16.6	17.1	17.2	17.5	17.5	18.1	16.7	17.7	17.4	17.8	17.2	18.3
West Virginia	12.9	13.1	13.2	13.4	13.6	14.2	14.3	14.4	14.6	15.0	15.3	15.4	15.8	15.7	16.0	16.7	17.9
North Dakota	11.0	11.4	11.2	11.6	11.9	12.2	12.8	12.7	12.7	14.1	14.7	15.4	16.1	16.5	16.5	17.0	17.6
Tennessee	15.8	15.8	15.6	15.5	15.8	15.4	16.2	15.8	16.5	16.5	16.8	16.7	16.9	16.6	16.9	17.3	17.1
Indiana	13.3	13.7	13.6	14.3	14.5	14.9	15.1	15.0	15.3	16.0	16.1	16.0	16.5	16.2	16.6	17.0	16.8
Arkansas	11.6	11.9	11.8	12.9	13.1	13.7	14.0	14.2	15.0	15.0	15.5	15.5	15.7	15.8	15.9	16.7	16.6
Mississippi	12.5	12.7	12.7	13.1	13.6	13.9	14.4	14.4	15.2	15.5	15.9	15.5	15.9	15.9	15.9	15.8	16.2
Idaho	17.8	17.3	17.7	16.9	17.4	16.7	18.1	18.2	17.6	17.8	17.6	16.0	15.4	15.6	15.7	15.3	15.5
Nebraska	11.3	11.7	11.0	11.5	12.1	12.6	12.8	13.4	13.6	13.4	14.2	14.4	14.9	14.9	14.8	15.4	15.5
Oklahoma	13.5	12.4	11.9	12.5	12.5	12.5	13.0	13.2	14.1	13.6	14.3	14.3	14.2	14.4	14.5	15.2	15.3
Texas	13.9	13.8	13.5	13.8	13.9	13.9	14.4	14.5	15.1	14.7	15.2	14.9	14.8	14.6	14.3	14.6	14.6
Montana	16.4	16.6	15.9	15.3	15.3	15.3	15.6	13.4	15.8	14.8	16.1	12.6	14.1	14.0	14.0	14.4	14.6
Iowa	10.6	11.0	10.7	11.3	11.6	12.0	12.2	12.5	12.9	13.0	13.3	13.5	14.0	14.0	13.9	14.5	14.6
Georgia	12.4	12.3	12.2	12.8	12.6	13.1	13.5	13.3	14.1	14.0	14.5	14.0	14.4	14.2	14.5	14.5	14.4
Kansas	10.9	11.3	10.7	11.3	11.5	11.7	12.0	12.2	12.8	12.6	13.3	13.3	13.5	13.5	13.6	14.2	14.4
North Carolina	13.5	13.6	13.7	14.2	13.9	14.3	14.4	14.2	14.5	14.5	14.8	14.5	14.7	14.4	14.7	14.8	14.3
Missouri	10.5	10.9	10.4	11.1	11.2	11.6	11.9	12.0	12.5	12.4	13.0	13.0	13.2	13.0	12.9	14.0	14.0
Virginia	11.7	11.9	11.9	12.5	12.5	12.8	13.0	12.8	13.1	13.3	13.6	13.4	13.8	13.8	14.1	14.4	14.0
Nevada	13.4	12.8	13.1	13.1	13.4	13.1	13.5	13.7	13.5	13.6	13.8	13.4	13.5	13.5	13.4	13.5	13.9
Delaware	12.4	12.5	12.3	12.9	13.0	13.1	13.0	13.5	13.6	13.6	14.3	14.3	14.9	15.4	14.2	14.4	13.5
Ohio	13.1	13.3	13.1	13.4	13.8	14.2	14.1	14.1	14.1	14.5	14.5	13.7	13.4	13.3	13.5	14.0	13.4
Washington	18.6	18.4	17.3	17.1	16.2	16.1	15.9	16.0	16.4	16.9	16.3	13.1	12.4	12.8	12.9	13.3	13.3
Oregon	15.0	14.9	14.3	14.6	14.4	14.4	14.9	14.7	14.0	14.0	14.7	13.2	12.9	12.7	12.7	12.8	13.0
Minnesota	10.7	11.0	10.5	10.8	11.1	11.6	11.7	11.7	11.8	11.8	12.1	12.2	12.4	12.5	12.5	12.9	13.0

Annual Per Capita Megawatt Hour Electricity Use*(cont.)																	
South Dakota	9.1	9.5	9.1	9.6	9.8	10.0	10.4	10.4	10.5	10.6	11.0	11.4	11.7	11.8	11.9	12.6	12.8
Florida	11.0	10.9	10.8	11.0	11.2	11.5	11.6	11.5	12.1	11.9	12.2	12.3	12.6	12.8	12.6	12.7	12.6
Wisconsin	10.0	10.3	10.1	10.5	10.8	11.2	11.2	11.4	11.7	11.9	12.1	12.1	12.3	12.3	12.3	12.7	12.5
USA	10.9	10.9	10.8	11.0	11.2	11.3	11.5	11.5	11.8	11.9	12.1	11.9	12.0	12.0	12.1	12.4	12.3
Arizona	11.3	11.0	11.1	10.9	11.1	11.0	11.4	11.5	11.4	11.5	11.8	11.7	11.5	11.5	11.7	11.7	11.9
Pennsylvania	9.6	9.7	9.7	9.9	10.1	10.3	10.4	10.5	10.6	10.5	10.9	11.0	11.4	11.4	11.6	12.0	11.8
Maryland	10.3	10.5	10.4	10.8	10.9	11.1	11.1	10.9	11.1	11.2	11.4	11.5	12.6	13.0	12.1	12.3	11.3
Illinois	9.7	10.1	9.6	10.0	10.2	10.5	10.4	10.4	10.7	10.7	10.8	10.9	11.0	10.8	11.0	11.4	11.1
New Mexico	9.1	9.1	9.0	9.1	9.4	9.5	9.8	9.9	10.1	10.0	10.3	10.2	10.4	10.3	10.5	10.8	11.0
Michigan	8.8	9.0	8.8	9.2	9.5	9.8	9.9	9.9	10.2	10.5	10.5	10.2	10.4	10.8	10.6	10.9	10.7
Colorado	9.3	9.3	9.1	9.1	9.3	9.2	9.5	9.5	9.6	9.6	9.9	10.0	10.2	10.2	10.1	10.3	10.4
Utah	8.9	8.9	9.0	8.9	9.1	9.2	9.6	9.6	9.6	9.9	10.3	10.1	10.0	10.1	10.1	10.0	10.2
Maine	9.4	9.2	9.3	9.6	9.3	9.3	9.4	9.5	9.2	9.4	9.5	9.5	8.8	9.2	9.4	9.4	9.3
Vermont	8.4	8.3	8.6	8.7	8.7	8.7	8.8	8.9	8.9	9.1	9.2	9.1	9.1	8.7	9.2	9.5	9.3
New Jersey	8.1	8.3	8.0	8.3	8.3	8.3	8.2	8.0	8.2	8.5	8.3	8.6	8.7	8.9	9.0	9.5	9.2
Alaska	7.7	7.5	7.4	7.3	7.5	7.7	7.9	7.9	8.2	8.5	8.5	8.6	8.5	8.5	8.7	8.8	9.1
Connecticut	8.3	8.2	8.2	8.2	8.5	8.4	8.5	8.5	8.6	8.8	8.8	8.9	9.0	9.2	9.3	9.5	9.1
Massachusetts	7.5	7.4	7.5	7.5	7.6	7.6	7.7	7.7	7.8	7.8	8.1	8.2	8.4	8.6	8.7	8.9	8.7
New Hampshire	8.1	7.9	8.0	7.8	7.8	7.8	7.8	7.7	7.7	8.1	8.2	8.2	8.2	8.6	8.5	8.6	8.5
Hawaii	7.5	7.5	7.5	7.4	7.5	7.7	7.8	7.7	7.6	7.8	8.0	8.0	8.1	8.4	8.6	8.3	8.3
New York	7.2	7.1	7.0	7.1	7.1	7.0	7.1	7.1	7.2	7.4	7.5	7.6	7.7	7.5	7.5	7.8	7.4
Rhode Island	6.4	6.3	6.3	6.5	6.5	6.5	6.5	6.6	6.7	6.9	6.9	7.0	7.1	7.3	7.4	7.5	7.3
California	7.0	6.8	6.9	6.7	6.8	6.7	6.8	7.0	7.2	7.0	7.2	7.2	6.7	6.9	7.1	7.1	7.3

*Sorted based on 2006 data.

Sources: U.S. Census Bureau and Energy Information Agency

Overall, Standard & Poor's views decoupling as positive for the credit quality of a utility. However, there are many other complex issues that regulators and utilities must consider, including unintended consequences, when establishing a decoupling rate mechanism. During the past 25 years, some companies have executed a successful energy-efficiency program (i.e., Northwest Natural Gas Co. and Pacific Gas and Electric Co.) through the use of decoupling, while others have failed (i.e., Puget Sound Energy Inc., and Central Maine Power Co.). As issues such as global warming continue to be part of the political landscape, increased focus on energy conservation appears inevitable, as well as the pressure for individual states to properly implement a decoupling mechanism to help facilitate conservation.

Click on this link to see other articles in "Special Report: The Credit Cost Of Going Green For U.S. Electric Utilities."

Click on this link to go to the Special Report Archive.

Exhibit____(FP-19)

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Cases 09-E-0715, 09-G-0716, 09-E-0717, and 09-G-0718

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ELECTRIC AND GAS RATES

January 2010

Exhibit____(Staff Finance Panel-19)

The McGraw-Hill Companies

STANDARD
&POOR'S

Press Release

S&P Estimates 6.1% Dividend Increase for the S&P 500 Companies in 2010; 2009 Dividend Payment Expected to Post 21.4% Decline

New York, December 7, 2009 – Standard & Poor's, the world's leading index provider, announced today that it expects the 2009 dividend payment for the S&P 500 to end the year at $22.31, a 21.4% decline from the $28.39 paid in 2008. The decline equates to an aggregate payment of $195.3 billion, compared to the $247.9 billion paid in 2008 leaving investors with $52.6 billion less in dividend payments for 2009.

Year-to-date, there were 147 dividend increases in the S&P 500 (adding $9.5 billion to payments) compared to 241 increases for all of 2008 (which added $19.1 billion). According to S&P Indices senior index analyst, Howard Silverblatt, the difficulty has not been so much the lack of increases, but the high number of decreases. "There were 78 dividend cuts so far this year which decreased payments by $48.0 billion, and that was on top of the 62 cuts in 2008 that reduced payments by $40.6 billion," explains Silverblatt.

At the start of 2009, Financials represented 20.5% of all dividend income in the S&P 500, down from the sector's peak of 30%, and now accounts for just 9% of the payments. However, cuts were posted across all sector lines, with the lone exception of Consumer Staples. Year-to-date, 33 of the 34 dividend actions in Consumer Staples were positive as the sector became the leading and most consistent dividend payer in the Index accounting for 17.4% of the payments.

As for 2010, Standard & Poor's overall view for dividends is positive. "While we do expect additional dividend decreases, Standard & Poor's believes that improving economic conditions will inspire companies to slowly increase their payouts," notes Howard Silverblatt, Senior Index Analyst at S&P Indices. "We expect dividend rate increases to average in the mid to high single digits, with the second half of the year much better than the first half as companies will need time to reassure themselves of their product and financial position."

"Our initial S&P 500 dividend estimate for 2010 is set at $23.67, a 6.1% gain over our 2009 estimate of $22.31. However, given a historical 5.6% dividend growth rate, it would takes years of above par increases to yield back what has been lost," adds Silverblatt. "Our optimistic outlook is set at $24.30, or an 8.9% increase over the 2009 estimate."

"On the pessimistic side of the equation, an increase in unemployment, stimulus spending and government-based programs would reduce our estimate to $17.91," continues Silverblatt. "However, under this scenario, dividends might be the least of our problems."

Additional dividend research from Standard & Poor's can be found by visiting: www.marketattributes.standardandpoors.com and clicking on "Dividends".

Exhibit____(FP-20)

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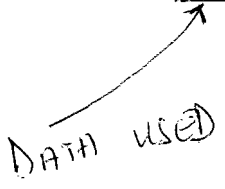
Exhibit____(Staff Finance Panel-20)

Banc of America Securities-Merrill Lynch Universe Sector/Industry Factor Evaluation (cont'd)

			Valuation Analysis								Expectation Analysis							
	# of	% ML	Impl.	Reqd	DDM	Eqty.	BAS-ML	P/E	Price/		Earnings (Decile)					PR 5yr	EPS Growth	
	Comp	Univ	Return	Return	Alpha	Duration	Adj ßeta	Ratio	Book	Yield	Surprise	Risk	Torp	Disp	Est. Rev.	Growth	2009E	2010E
Duration																		
7.80 To 22.43	114	13.9	13.4	11.7	1.7	19.3	1.0	13.3	2.1	3.8	5	4	5	4	5	11.8	-15	8
22.47 To 25.89	114	11.6	12.6	12.1	0.5	24.5	1.0	13.5	2.6	2.3	6	4	5	4	6	11.0	-13	11
25.94 To 29.49	114	14.2	12.0	11.3	0.7	27.6	0.9	14.0	2.8	2.2	5	3	6	3	5	10.4	-9	15
29.54 To 33.56	114	9.3	10.8	12.1	-1.3	31.6	1.0	15.1	2.4	1.1	6	4	6	3	5	10.2	-7	11
33.57 To 85.15	114	14.6	10.6	13.1	-2.5	41.2	1.1	16.4	2.2	0.8	5	6	7	5	4	9.3	2	24
Uncoded	648	36.5		12.5			1.1	15.0	1.6	2.0	5	5	5	6	5	6.4	38	nm
Growth Sectors																		
Growth	444	30.6	12.2	12.3	-0.1	27.4	1.0	15.6	2.3	1.3	6	4	6	4	5	12.2	-10	16
Growth Cyclical	299	21.9	11.4	14.3	-2.9	34.7	1.2	18.0	1.6	1.4	5	6	5	6	5	10.0	nm	36
Growth Defensive	145	14.3	12.8	10.5	2.3	28.4	0.8	12.1	2.4	2.4	5	3	6	2	5	7.4	31	14
Cyclical	216	12.4	10.7	14.4	-3.7	31.3	1.3	17.5	1.7	1.7	4	6	5	6	5	7.5	-41	72
Defensive	111	20.9	11.9	9.8	2.1	22.8	0.8	11.7	2.2	3.9	5	4	4	4	6	5.9	-27	21
EPS Surprise																		
Most Optimistic	144	16.1	12.2	12.9	-0.7	28.7	1.1	12.5	2.2	1.9	1	5	6	5	5	9.4	4	18
Optimistic	144	11.9	11.8	12.3	-0.5	28.5	1.0	15.9	2.1	2.5	3	5	5	5	5	9.7	-14	40
Neutral	144	17.3	11.7	11.4	0.3	28.6	1.0	13.5	2.2	2.7	5	4	6	3	5	8.7	-10	17
Less Optimistic	144	12.2	12.2	12.8	-0.6	29.7	1.1	15.8	1.8	1.7	7	5	6	4	5	10.0	484	20
Not Optimistic	144	13.7	11.7	12.9	-1.2	29.1	1.1	17.5	2.6	1.6	9	3	6	4	5	8.1	-20	17
Uncoded	498	28.9	11.5	11.6	-0.1	31.0	1.0	14.5	1.7	2.0		5	5	5	6	9.0	-8	35
Quality Rank																		
A+	36	14.3	12.5	9.7	2.8	27.4	0.8	13.8	3.0	2.5	5	2	5	3	6	9.1	-22	17
A	57	9.9	12.5	11.6	0.9	25.2	1.0	13.3	2.4	2.6	4	3	5	3	5	8.9	-17	8
A-	83	10.4	12.0	11.7	0.3	28.0	1.0	15.2	1.9	2.5	6	4	5	5	5	8.3	-29	39
B+	226	27.5	11.4	12.3	-0.9	29.9	1.0	13.8	2.0	2.1	6	5	5	4	5	8.8	32	17
B	213	17.1	11.9	13.1	-1.2	32.9	1.1	15.4	1.6	2.1	6	7	6	5	5	8.9	30	30
B-	173	5.9	11.7	13.7	-2.0	29.7	1.2	17.1	1.9	0.7	4	7	5	5	5	10.5	-17	45
C & D	99	2.2	7.9	14.4	-6.5	44.7	1.3	584.9	2.1	0.1	6	9	8	7	5	-5.2	nm	145
Not Rated	331	12.9	12.4	13.3	-0.9	25.8	1.1	13.6	2.0	1.7	5	5	6	4	5	12.6	5	21
B+ or Better	402	62.0	11.9	11.5	0.4	28.2	1.0	13.9	2.2	2.3	5	4	5	4	5	8.8	-5	18
B or Worse	816	38.0	11.9	13.3	-1.4	30.2	1.1	15.9	1.8	1.6	5	6	6	5	5	9.6	17	39
ML Universe	1218	100.0	11.9	12.2	-0.3	28.9	1.0	17.4	2.0	2.1						8.8	1	25
S&P 500	500	89.2	11.9	12.0	-0.1	29.0	1.0	16.8	2.0	2.1						9.0	0	21



BofAML Universe Sector/Industry Factor Evaluation (cont'd)

			Valuation Analysis								Expectation Analysis							
											Earnings (Decile)					PR 5yr	EPS Growth	
	# of Comp	% Univ BOFAML	Impl. Return	Reqd Return	DDM Alpha	Eqty. Duration	BofAML Adj ßeta	P/E Ratio	Price/ Book	Yield	Surprise	Risk	Torp	Disp	Est. Rev.	Growth	2009E	2010E
Duration																		
9.18 To 22.86	116	12.5	13.3	11.3	2.0	19.3	1.0	13.6	2.4	3.7	5	4	5	3	5	12.5	-13	14
22.87 To 26.62	117	15.3	12.5	11.9	0.6	25.2	1.0	14.3	2.7	2.4	6	3	5	4	6	10.3	-18	11
26.71 To 30.32	117	13.6	11.5	11.5	0.0	28.5	1.0	14.5	2.6	1.9	5	4	6	3	5	10.6	-9	13
30.37 To 34.29	117	9.0	11.1	11.9	-0.8	32.6	1.0	14.9	2.6	0.9	5	5	6	4	5	10.2	-7	14
34.37 To 85.38	116	15.4	10.3	13.0	-2.7	41.9	1.1	16.8	2.3	0.7	5	6	7	5	4	9.2	4	25
Uncoded	643	34.4		12.4			1.1	15.0	1.6	2.1	6	5	5	6	6	7.0	60	nm
Growth Sectors																		
Growth	444	30.7	12.0	12.2	-0.2	28.3	1.0	16.2	2.5	1.3	6	4	6	4	5	11.9	-9	16
Growth Cyclical	301	22.3	11.3	14.1	-2.8	35.2	1.3	18.0	1.7	1.3	5	6	5	6	5	9.6	nm	47
Growth Defensive	144	13.5	12.7	10.4	2.3	28.9	0.9	12.4	2.4	2.4	5	3	6	3	5	9.9	32	14
Cyclical	218	12.6	10.7	14.3	-3.6	32.0	1.3	17.5	1.8	1.5	5	6	5	6	5	8.0	-41	89
Defensive	116	20.9	11.7	9.6	2.1	23.7	0.8	11.7	2.2	3.7	5	4	4	4	6	5.9	-26	20
EPS Surprise																		
Most Optimistic	145	18.4	11.4	12.4	-1.0	30.9	1.1	12.9	2.4	2.2	1	4	6	5	5	8.7	4	20
Optimistic	145	12.4	11.5	12.4	-0.9	30.3	1.1	16.7	2.0	1.6	4	6	6	5	5	10.7	-14	43
Neutral	145	13.9	12.0	11.4	0.6	26.3	1.0	13.4	2.2	2.7	6	4	5	3	5	9.2	-9	18
Less Optimistic	145	13.4	11.7	12.4	-0.7	29.0	1.1	16.0	1.9	1.9	7	5	6	4	5	9.5	290	32
Not Optimistic	145	13.7	11.9	13.3	-1.4	32.0	1.2	18.1	3.1	1.2	10	4	6	4	5	11.1	-17	17
Uncoded	501	28.4	12.4	11.4	1.0	27.3	1.0	14.6	1.8	2.1		5	5	5	6	8.3	-8	37
Quality Rank																		
A+	37	13.9	12.4	9.6	2.8	27.8	0.8	13.8	3.1	2.4	4	2	5	3	6	9.2	-21	18
A	55	10.0	12.3	11.6	0.7	25.8	1.0	13.9	2.6	2.5	4	3	5	4	6	8.3	-16	8
A-	84	10.3	11.6	11.4	0.2	29.6	1.0	14.9	1.9	2.5	6	4	5	5	5	8.6	-28	40
B+	228	27.3	11.3	12.2	-0.9	30.6	1.1	14.1	2.0	2.0	6	5	5	4	5	8.7	39	19
B	212	17.1	11.8	13.0	-1.2	33.5	1.1	15.6	1.7	1.9	6	7	6	5	5	8.8	25	44
B-	177	6.1	11.4	13.6	-2.2	31.4	1.2	17.5	2.0	0.8	4	7	5	6	5	11.1	-17	47
C & D	99	2.3	8.1	14.3	-6.2	44.5	1.3	101.9	2.2	0.1	6	9	8	7	4	11.4	nm	153
Not Rated	334	13.1	12.3	13.2	-0.9	26.1	1.2	14.2	2.1	1.7	5	5	6	4	5	11.9	4	22
B+ or Better	404	61.5	11.7	11.4	0.3	28.9	1.0	14.2	2.3	2.3	5	4	5	4	5	8.7	-3	20
B or Worse	822	38.5	11.8	13.3	-1.5	31.0	1.2	16.2	1.9	1.5	5	6	6	5	5	10.4	14	46
BofAML Universe	1226	100.0	11.7	12.1	-0.4	29.7	1.0	18.3	2.1	2.0						9.1	2	28
S&P 500	500	88.6	11.8	11.9	-0.1	29.8	1.0	17.6	2.1	2.0						9.0	1	23

DATA USED

BofAML Universe Sector/Industry Factor Evaluation (cont'd)

			Valuation Analysis								Expectation Analysis							
	# of	% Univ	Impl.	Reqd	DDM	Eqty.	BofAML	P/E	Price/		Earnings (Decile)					PR 5yr	EPS Growth	
	Comp	BOFAML	Return	Return	Alpha	Duration	Adj ßeta	Ratio	Book	Yield	Surprise	Risk	Torp	Disp	Est. Rev.	Growth	2009E	2010E
Duration																		
8.67 To 22.33	121	11.8	13.5	12.1	1.4	18.6	1.0	12.6	2.2	3.6	4	4	5	4	5	12.7	-14	16
22.36 To 25.63	122	13.9	12.6	11.7	0.9	24.0	1.0	13.2	2.2	2.7	6	4	4	3	6	10.1	-15	10
25.66 To 29.41	121	15.2	12.1	11.4	0.7	27.8	1.0	13.9	2.8	1.9	5	3	6	3	6	11.0	-7	14
29.41 To 33.82	122	9.2	10.9	12.2	-1.3	31.4	1.0	13.7	2.4	1.1	6	4	6	4	5	10.0	-3	12
33.85 To 85.22	121	16.5	10.4	13.0	-2.6	41.1	1.1	15.5	2.3	0.7	5	6	7	5	4	9.5	13	26
Uncoded	632	33.4		12.3			1.0	14.4	1.6	2.2	6	6	5	6	6	7.4	60	nm
Growth Sectors																		
Growth	447	30.1	12.1	12.3	-0.2	28.0	1.0	15.3	2.4	1.3	6	4	6	4	5	12.0	-8	17
Growth Cyclical	300	21.2	11.4	14.2	-2.8	34.5	1.2	15.6	1.7	1.4	5	6	6	6	4	10.3	nm	41
Growth Defensive	141	13.4	12.6	10.4	2.2	28.8	0.8	12.6	2.3	2.5	6	3	6	2	5	9.9	22	18
Cyclical	230	13.6	11.0	14.2	-3.2	31.0	1.2	16.2	1.7	1.5	5	6	5	6	5	8.8	-37	84
Defensive	118	21.7	12.0	9.7	2.3	22.9	0.8	11.3	2.2	3.7	5	4	4	4	6	6.0	-25	19
EPS Surprise																		
Most Optimistic	153	16.3	12.1	12.4	-0.3	32.0	1.1	12.4	2.6	2.1	2	5	6	4	4	10.1	9	31
Optimistic	154	18.6	11.7	12.1	-0.4	27.5	1.0	14.4	2.1	2.3	3	5	6	4	5	10.8	-7	28
Neutral	154	13.8	12.2	13.1	-0.9	27.0	1.1	14.1	1.8	2.1	6	5	5	5	5	8.5	132	29
Less Optimistic	154	14.4	12.1	11.9	0.2	29.2	1.0	14.2	2.2	1.9	8	4	5	4	5	8.8	-9	10
Not Optimistic	154	12.6	11.3	12.4	-1.1	29.7	1.1	16.3	2.3	1.3	10	4	5	4	5	10.6	-20	14
Uncoded	470	24.3	10.9	11.5	-0.6	34.2	1.0	13.7	1.7	2.2		5	4	6	6	8.9	1	44
Quality Rank																		
A+	36	14.2	12.5	9.7	2.8	27.3	0.8	13.6	3.0	2.4	6	3	5	3	6	9.3	-21	18
A	56	9.9	12.4	11.6	0.8	25.1	1.0	13.2	2.4	2.6	5	3	5	3	6	8.4	-16	9
A-	84	10.5	11.6	11.5	0.1	29.8	1.0	14.3	1.9	2.5	6	5	5	5	5	9.9	-24	35
B+	231	27.2	11.3	12.3	-1.0	30.3	1.0	13.4	2.1	2.1	5	5	5	4	5	8.3	37	21
B	212	16.9	12.0	13.1	-1.1	32.4	1.1	13.9	1.6	2.0	4	6	6	5	5	9.3	41	34
B-	178	5.9	11.4	13.8	-2.4	31.0	1.2	16.1	1.9	0.7	5	7	6	6	4	11.0	-16	51
C & D	99	2.1	8.4	14.5	-6.1	43.3	1.3	67.0	2.0	0.1	6	8	8	7	4	11.3	nm	145
Not Rated	343	13.3	12.4	13.2	-0.8	25.7	1.1	13.5	2.0	1.7	5	5	6	4	5	12.7	5	23
B+ or Better	407	61.8	11.8	11.5	0.3	28.6	1.0	13.6	2.3	2.3	6	4	5	4	5	8.8	-2	20
B or Worse	832	38.2	11.9	13.3	-1.4	30.2	1.2	14.7	1.8	1.6	5	6	6	5	5	10.9	21	44
BofAML Universe	**1239**	**100.0**	**11.9**	**12.2**	**-0.3**	**29.2**	**1.0**	**17.7**	**2.1**	**2.0**						**9.4**	**4**	**28**
S&P 500	**500**	**88.1**	**11.9**	**12.0**	**-0.1**	**29.3**	**1.0**	**16.8**	**2.1**	**2.1**						**9.4**	**4**	**24**

DATA USED

Exhibit____(FP-21)

BEFORE THE
STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Cases 09-E-0715, 09-G-0716, 09-E-0717, and 09-G-0718

IN THE MATTER OF

New York State Electric & Gas Corporation
And
Rochester Gas & Electric Corporation

ELECTRIC AND GAS RATES

January 2010

Exhibit____(Staff Finance Panel-21)

The Journal of Porfolio Management Fall 1999

The Shrinking Equity Premium

Historical facts and future forecasts.

Jeremy J. Siegel

Few conundrums have caught the imagination of economists and practitioners as much as the "Equity Premium Puzzle," the title chosen by Rajneesh Mehra and Edward Prescott for their seminal 1985 article in the *Journal of Monetary Economics*. Mehra and Prescott show that the historical return on stocks has been too high in relation to the return on risk-free assets to be explained by the standard economic models of risk and return without invoking unreasonably high levels of risk aversion.[1] They calculate the margin by which stocks outperformed safe assets — the *equity premium* — to be in excess of 6 percentage points per year, and claim that the profession is at a loss to explain its magnitude.

There have been many attempts since to explain the size of the equity premium by variations of the standard finance model. I shall not enumerate them here, but refer readers to reviews by Abel [1991], Kocherlakota [1996], Cochrane [1997], and Siegel and Thaler [1997].

I review here the estimates of the equity premium derived from historical data, and offer some reasons why I believe that most of the historical data underestimate the real return on fixed-income assets and overestimate the expected return on equities. I shall also offer some reasons why, given the current high level of the stock market relative to corporate earnings, the forward-looking equity premium may be considerably lower than the historical average.

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REAL RETURNS ON "RISK-FREE" ASSETS

From 1889 through 1978, Mehra and Prescott estimate the real return on short-dated fixed-income

assets (commercial paper until 1920 and Treasury bills thereafter) to have been 0.8%. In 1976 and again in 1982, Roger Ibbotson and Rex Sinquefield formally estimated the real risk-free rate to be even lower — at zero, based on historical data analyzed from 1926. This extremely low level of the short-term real rate is by itself puzzling, and has been termed the "real rate puzzle" by Weil [1989]. The essence of this puzzle is that, given the historical growth of per capita income, it is surprising that the demand to borrow against tomorrow's higher consumption has not resulted in higher borrowing rates.

The low measured level of the risk-free rate may in fact be in part an artifact of the time period examined. There is abundant evidence that the real rate both during the nineteenth century and after 1982 has been substantially higher. Exhibit 1, based on Siegel [1998], indicates that over the entire period from 1802 through 1998, the real compound annual return on Treasury bills (or equivalent safe assets) has been 2.9%, while the realized return on long-term government bonds has been 3.5%. Exhibit 2 presents the historical equity premium for selected time periods for both bonds and bills based on the same data.[2]

EXHIBIT 1
COMPOUND ANNUAL REAL RETURNS (%)
U.S. DATA, 1802-1998

	Stocks	Bonds	Bills	Gold	Inflation
1802-1998	7.0	3.5	2.9	−0.1	1.3
1802-1870	7.0	4.8	5.1	0.2	0.1
1871-1925	6.6	3.7	3.2	−0.8	0.6
1926-1998	7.4	2.2	0.7	0.2	3.1
1946-1998	7.8	1.3	0.6	−0.7	4.2

Source: Siegel [1998] updated.

The danger of using historical averages — even over long periods — to make forecasts is readily illustrated by noting Ibbotson and Sinquefield's long-term predictions made in 1976 and again in 1982 on the basis of their own analysis of the historical data. In 1976, they made predictions for the twenty-five-year period from

EXHIBIT 2
EQUITY PREMIUMS (%) — U.S. DATA, 1802-1998

	Equity Premium with Bonds		Equity Premium with Bills	
	Geometric	Arithmetic	Geometric	Arithmetic
1802-1998	3.5	4.7	5.1	5.5
1802-1870	2.2	3.2	1.9	2.9
1871-1925	2.9	4.0	3.4	4.6
1926-1998	5.2	6.7	6.7	8.6
1946-1998	6.5	7.3	7.2	8.6

Source: Siegel [1998] updated.

1976 through 2000, and in 1982 they made predictions for the twenty-year period from 1982 through 2001. Their forecasts are shown in Exhibit 3. Since we now have data for most of these forecast periods, it is of interest to assess their estimates.

The last two decades have been extremely good for financial assets, so it is not surprising that Ibbotson and Sinquefield underestimate all their real returns. But their most serious underestimation is for fixed-income assets, where they forecast the real bill rate to average essentially zero and the real return on bonds to be less than 2%. Given the standard deviation of estimates, realized annual real bond and bill returns have been 9.9% and 2.9%, respectively, significantly above their estimates. Since negative real returns on fixed-income assets persisted between the two surveys, Ibbotson and Sinquefield more seriously underestimate long-term real bill rates in their 1982 forecasts than they did in 1976.[3]

My purpose here is not to highlight errors in Ibbotson's and Sinquefield's past forecasts. Their analysis was state-of-the-art, and their data have rightly formed the benchmark for the risk and return estimates used by both professional and academic economists. I bring these forecasts to light to show that even the fifty-year history of financial returns available to economists at that time was insufficient to estimate future real fixed-income returns.

It is not well understood why the real rate of returns on fixed-income assets was so low during the 1926-1980 period. The bursts of unanticipated inflation following the end of World War II and during the 1970s certainly had a negative effect on the realized real returns from long-term bonds. Perhaps the shift from a gold standard to a paper monetary standard had a negative effect on these real returns until investors fully adjusted to the inflationary bias inherent in the new monetary standard.[4]

Whatever the reasons, the current yields on the Treasury inflation-protected securities, or TIPS, first issued in 1997 support the assertion that the future real returns on risk-free assets will be substantially above the level estimated over the Ibbotson-Sinquefield period. This is so even when the estimating period includes the higher real rates of the past two decades. In August 1999, the ten- and thirty-year TIPS bond yielded 4.0%, nearly twice the realized rate of return on long-dated government bonds over the past seventy-five years.[5]

The market projects real returns on risk-free assets to be substantially higher in the future than they have been over most of this century. It is also likely that the expected returns in the past are substantially greater than they have turned out ex post, especially for longer-dated securities. If one uses a 3.5% real return on fixed-income assets, the geometric equity premium for a 7.0% real stock return falls to 3.5%.

EXHIBIT 3
LONG-TERM FORECASTS OF REAL RETURNS — COMPOUND ANNUAL RATES OF RETURN

Forecast Period		Stocks	Bonds	Bills	Inflation
1976-2000	Forecast	6.3 (23.5)	1.5 (8.0)	0.4 (4.6)	6.4 (4.8)
	Actual*	11.0	5.3	2.1	4.8
1982-2001	Forecast	7.6 (21.9)	1.8 (8.3)	0.0 (4.4)	12.8 (5.1)
	Actual*	14.6	9.9	2.9	3.3

*Data through 1998.
Standard deviations of annual returns in parentheses.
Source: Ibbotson and Sinquefield [1976, 1982].

HISTORICAL EQUITY RETURNS AND SURVIVORSHIP BIAS

The real return on stocks, as I have emphasized [1998], has displayed a remarkable long-term stability. Over the entire 196-year period that I examine, the long-term after-inflation geometric annual rate of return on equity averages 7.0%. In the 1926-1998 period, the real return has been 7.4%, and since 1946 (when virtually all the thirteenfold increase in the consumer price index over the past two hundred years has taken place) the real return on equity has been 7.8%. The relative stability of long-term real equity returns is in marked contrast to the unstable real returns on fixed-income assets.

Some economists believe the 7% historical real

return on equities very likely overstates the true expected return on stocks. They claim that using the ex post equity returns in the United States to represent returns expected by shareholders is misleading. This is because no investor in the nineteenth or early twentieth century could know for certain that the United States would be the most successful capitalist country in history and experience the highest equity returns.

This "survivorship bias" hypothesis, as it has been called, is examined by Jorion and Goetzmann [1999] in "Global Stock Markets in the Twentieth Century." They conclude that of thirty-nine equity markets that existed in 1921, none of them show as high a real capital appreciation as the United States, and most of them have had substantial disruptions in their operations or have disappeared altogether. They report that the median real capital appreciation of non-U.S. markets has been only 0.8% per year as opposed to 4.3% in the U.S.[6]

But this evidence may be misleading. Total returns of a portfolio, especially over long periods of time, are a very non-linear function of the returns of the individual components. Mathematically it can be shown that if individual stock returns are lognormal, the performance of the *median* stock is almost always worse than the market portfolio performance.[7]

So, it is not surprising that the median performance of individual countries will not match the "world portfolio" or the returns in the dominant market. Jorion and Goetzmann recognize this near the end of their study when they show that compound annual real return on a GDP-weighted portfolio of equities in all countries falls only 28 basis points short of the U.S. return. In fact, because of the real depreciation of the dollar over this time, the compound annual *dollar* return on a GDP-weighted world is actually 30 basis points *higher* than the return on U.S. equities.[8]

But examining international stock returns alone does not give us a better measure of the equity premium. The equity premium measures the *difference* between the returns on stocks and safe bonds. Although stock returns may be lower in foreign countries than the U.S., the real returns on foreign bonds are substantially lower. Almost all disrupted markets experienced severe inflation, in some instances wiping out the value of fixed-income assets. (One could say that the equity premium in Germany covering any period including the 1922-1923 hyperinflation is over 100%, since the real value of fixed-income assets fell to zero while equities did not.)

Even investors who purchased bonds that promised precious metals or foreign currency experienced significant defaults. It is my belief that if one uses a world portfolio of stocks and bonds, the equity *premium* will turn out higher, not lower, than found in the U.S.[9]

TRANSACTION COSTS AND DIVERSIFICATION

I believe that 7.0% per year does approximate the long-term real return on equity indexes. But the return on equity *indexes* does not necessarily represent the *realized* return to the equityholder. There are two reasons for this: transaction costs and the lack of diversification.[10]

Mutual funds and, more recently, low-cost "index funds" were not available to investors of the nineteenth or early twentieth century. Prior to 1975, brokerage commissions on buying and selling individual stocks were fixed by the New York Stock Exchange, and were substantially higher than today. This made the accumulation and maintenance of a fully diversified portfolio of stocks quite costly.

The advent of mutual funds has substantially lowered the cost of maintaining a diversified portfolio. And the cost of investing in mutual funds has declined over the last several decades. Rea and Reid [1998] report a decline of 76 basis points (from 225 to 149) in the average annual fee for equity mutual funds from 1980 to 1997 (see also Bogle [1999, p. 69]). Index funds with a cost of less than 20 basis points per year are now available to small investors.

Furthermore, the risk experienced by investors unable to fully diversify their portfolios made the risk-return trade-off less desirable than that calculated from stock indexes. On a risk-adjusted basis, a less-than-fully diversified portfolio has a lower expected return than the total market.

Given transaction costs and inadequate diversification, I assume that equity investors experienced real returns more in the neighborhood of 5% to 6% over most of the nineteenth and twentieth century rather than the 7% calculated from indexes. Assuming a 3.5% real return on bonds, the historical equity premium may be more like 1.5 to 2.5 percentage points, rather than the 6.0 percentage points recorded by Mehra and Prescott.

PROJECTING FUTURE EQUITY RETURNS

Future stock returns should not be viewed independently of current fundamentals, since the price of

stocks is the present discounted value of all expected future cash flows. Earnings are the source of these cash flows, and the average price-to-earnings (P-E) ratio in the U.S. from 1871 through 1998 is 14 (see Shiller [1989] for an excellent source for this series).

Using data from August 13, 1999, the S&P 500 stock index is 1327, and the mean 1999 estimate for operating earnings of the S&P 500 stock index of fifteen analysts polled by Bloomberg News is $48.47.[11] This yields a current P-E ratio on the market of 27.4. But due to the increased number of write-offs and other special charges taken by management over the last several years, operating earnings have exceeded total earnings by 10% to 15%.[12] On the basis of reported earnings, which is what most historical series report (including Shiller's), the P-E ratio of the market is currently about 32.[13]

There are two long-term consequences of the high level of stock prices relative to fundamentals. Either 1) future stock returns are going to be lower than historical averages, or 2) earnings (and hence other fundamentals such as dividends or book value) are going to rise at a more rapid rate in the future. A third possibility, that P-E ratios will rise continually without bound, is ruled out since this would cause an unstable bubble in stock prices that must burst.

If future dividends grow no faster than they have in the past, forward-looking real stock returns will be lower than the 7% historical average. As is well known from the dividend discount model, the rate of return on stocks can be calculated by adding the current dividend yield to the expected rate of growth of future dividends. The current dividend yield on the S&P 500 index is 1.2%. Since 1871, the growth of real per share dividends on the index has been 1.3%, but since 1946, due in part to a higher reinvestment rate, growth has risen to 2.1%. If we assume future growth of real per share dividends to be close to the most recent average of 2.1%, we obtain a 3.3% real return on equities, less than one-half the historical average.

A second method of calculating future real returns yields a similar figure. If the rate of return on capital equals the return investors require on stocks, the *earnings yield*, or the reciprocal of the price-earnings ratio, equals the forward-looking real long-term return on equity (see Phillips [1999] for a more formal development of this proposition). Long-term data support this contention; a 14 price-to-earnings ratio corresponds to a 7.1% earnings yield, which approximates the long-term real return on equities. The current P-E ratio on the S&P 500 stock index is between 27 to 32, depending on whether total or operating earnings are considered. This indicates a current earnings yield, and hence a future long-term and real return, of between 3.1% to 3.7% on equities.

One way to explain these projected lower future equity returns is that investors are bidding up the price of stocks to higher levels as the favorable historical data about the risks and returns in the equity market become incorporated into investor decisions.[14] Lower transaction costs further enable investors to assemble diversified portfolios of stocks to take advantage of these returns. The desirability of stocks may be further reinforced by the perception that the business cycle has become less severe over time and has reduced the inherent risk in equities.[15]

If these factors are the cause of the current bull market, then the revaluation of equity prices is a one-time adjustment. This means that future expected equity returns should be lower, not higher, than in the past. During this period of upward price adjustment, however, equity returns will be higher than average, increasing the historical measured returns in the equity market.

This divergence between increased historical returns and lower future returns could set the stage for some significant investor disappointment, as survey evidence suggests that many investors expect future returns to be higher, not lower, than in the past (see "PaineWebber Index of Investor Optimism" [1999]).

SOURCES OF FASTER EARNINGS GROWTH

Although the increased recognition of the risks and returns to equity may be part of the explanation for the bull market in stocks, there must be other reasons. This is because the forward-looking rates of return we derive for equities fall below the current 4.0% yield on inflation-protected government bonds. Although one could debate whether in the long run stocks or *nominal* bonds are riskier in real terms, there should be no doubt that the inflation-protected bonds are safer than equities and should have a lower expected return.

Hence, some part of the current bull market in stocks must be due to the expectations that future earnings (and dividend) growth will be significantly above the historical average. Optimists frequently cite higher growth of real output and enhanced productivity, enabled by the technological and communications revolution, as the source of this higher growth. Yet the long-run relation between the growth of real output and *per share* earn-

ings growth is quite weak on both theoretical and empirical grounds. Per share earnings growth has been primarily determined by the reinvestment rate of the firm, or the earnings yield minus the dividend yield, not the rate of output growth.[16]

The reason why output growth does not factor into per share earnings growth is that new shares must be issued (or debt floated) to cover the expansion of productive technology needed to increase output. Over the long run, the returns to technological progress have gone to workers in the form of higher real wages, while the return per unit of capital has remained essentially unchanged. Real output growth could spur growth in per share earnings only if it were "capital-enhancing," in the growth terminology, which is contrary to the labor-augmenting and wage-enhancing technological change that has marked the historical data (see Diamond [1999] for a discussion of growth and real return).

But there are factors that may contribute to higher future earnings growth of U.S. corporations, at least temporarily. The United States has emerged as the leader in the fastest-growing segments of the world economy: technology, communications, pharmaceuticals, and, most recently, the Internet and Internet technology. Furthermore, the penetration of U.S. brand names such as Coca-Cola, Procter & Gamble, Disney, Nike, and others into the global economy can lead to temporarily higher profit growth for U.S. firms.

Nonetheless, the level of corporate earnings would have to double to bring the P-E ratio down to the long-term average, or to increase by 50% to bring the P-E ratio down to 20. A 20 price-to-earnings yield corresponds to a 5% earnings yield or a 5% real return, a return that I believe approximates realized historical equity returns after transaction costs are subtracted. For per share earnings to temporarily grow to a level 50% above the long-term trend is clearly possible in a world economy where the U.S. plays a dominant role, but it is by no means certain.

CONCLUSION

The degree of the equity premium calculated from data estimated from 1926 is unlikely to persist in the future. The real return on fixed-income assets is likely to be significantly higher than that estimated on earlier data. This is confirmed by the yields available on Treasury inflation-linked securities, which currently exceed 4%. Furthermore, despite the acceleration in earnings growth, the return on equities is likely to fall from its historical level due to the very high level of equity prices relative to fundamentals.[17]

All of this makes it very surprising that Ivo Welch [1999] in a survey of over 200 academic economists finds that most estimate the equity premium at 5 to 6 percentage points over the next thirty years. Such a premium would require a 9% to 10% real return on stocks, given the current real yield on Treasury inflation-indexed securities. This means that real per share dividends would have to grow by nearly 8.0% to 9.0% per year, given the current 1.2% dividend yield, to prevent the P-E ratio from rising farther from its current record levels. This growth rate is more than six times the growth rate of real dividends since 1871 and more than triple their growth rate since the end of World War II.

Unless there is a substantial increase in the productivity of capital, dividend growth of this magnitude would mean an ever-increasing share of national income going to profits. This by itself might cause political ramifications that could be negative for shareholders.

ENDNOTES

This article is adapted from a paper delivered at the UCLA Conference, "The Equity Premium and Stock Market Valuations," and a Princeton Center for Economic Policy Studies Conference, "What's Up with the Stock Market?" both held in May 1999. The author thanks participants in these seminars and particularly Jay Ritter, Robert Shiller, and Peter L. Bernstein for their comments.

[1]A few economists believe these high levels of risk aversion are not unreasonable; see, e.g., Kandel and Stambaugh [1991].

[2]In the capital asset pricing model, equity risk premiums are derived from the *arithmetic* and not geometric returns. Compound annual geometric returns are almost universally used in characterizing long-term returns.

[3]Their wildly high 12.8% long-term inflation estimate in 1982 is derived by subtracting their low historical real yield from the high nominal bond rate. This overprediction has no effect on their estimated *real* returns.

[4]But real rates on *short-dated* bonds, for which unanticipated inflation should have been less important, were also extremely low between 1926 and 1980.

[5]I am very persuaded by the research of Campbell and Viceira [1998], who argue that in a multiperiod world the proper risk-free asset is an inflation-indexed annuity rather than the short-dated Treasury bill. This conclusion comes from intertemporal models where agents desire to hedge against unanticipated changes in the real rate of interest. The duration of such an indexed annuity is closely approximated by the ten-year inflation-indexed bonds.

[6]They are unable to construct dividend series for most foreign countries, but they make a not-unreasonable assumption that dividend yields in the U.S. were at least as high as abroad.

[7]Intuitively, the return of the winners more than compensates for the lower returns of the more numerous losers.

[8]Furthermore, the dollar return on the foreign portfolio is much better measured than the real return. These data are taken from Jorion and Goetzmann [1991], Tables VI and VII.

[9]To avoid the problems with default, gold is considered the "risk-free" alternative in many countries. But gold's long-term real returns are negative in the U.S. even before one considers storage and insurance costs. And precious metals are far from risk-free in real terms. The real return on gold since 1982 has been a negative 7% per year.

[10]I abstract from taxes, which reduce the return on both bonds and stocks.

[11]These data were taken from the Bloomberg terminal on August 16, 1999.

[12]From 1970 through 1989, operating earnings exceeded reported earnings by an average of 2.29%. Since 1990, the average has been 12.93%.

[13]There are other factors that distort reported earnings, some upward (underreporting option costs: see Murray, Smithers, and Emerson [1998]) and some downward (overexpensing R&D; see Nakamura [1999]). No clear bias is evident.

[14]This is particularly true on a long-term, after-inflation basis. See Siegel [1998, Chapter 2].

[15]Bernstein [1998] has emphasized the role of economic stability in stock valuation. Also see Zarnowitz [1999] and Romer [1999]. Other reasons given for the high price of equities rely on demographic factors, specifically the accumulations of "baby boomers." This should, however, reduce both stock and bond returns, yet we see real bond returns as high if not higher than historically.

[16]From 1871 to 1998, the growth of real per share earnings is only 1.7% per year, slightly less than obtained by subtracting the median dividend yield of 4.8% from the median earnings yield of 7.2%.

[17]This should not be construed as predicting that equity prices need fall significantly, or that the expected returns on equities are not higher, even at current levels, than those on fixed-income investments.

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Exhibit____(FP-22)

BEFORE THE
STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Cases 09-E-0715, 09-G-0716, 09-E-0717, and 09-G-0718

IN THE MATTER OF

New York State Electric & Gas Corporation
And
Rochester Gas & Electric Corporation

ELECTRIC AND GAS RATES

January 2010

Exhibit____(Staff Finance Panel-22)

ECONOMIC PROJECTIONS AND THE BUDGET OUTLOOK

February 28, 2009

The economic projections underlying the Administration's budget have received considerable attention. Here we briefly address the projections and some of the issues that have been raised.

1. Comparison of the Administration Forecasts to Comparable Forecasts

The Administration's economic assumptions were largely completed in early January and finalized on February 3rd. Therefore, the appropriate comparison is to other forecasts completed at the same time. The key summary variable for budget purposes is the rate of real GDP growth. Below we show comparisons to three alternative forecasts:

- **Blue Chip Consensus**
  This forecast is a summary of a number of private forecasts. It was released on January 10, 2009. The January survey only covered 2009 and 2010.
- **Congressional Budget Office**
  The CBO forecast is explicitly a pre-policy forecast. It was released on January 8, 2009.[1] The CBO also did an analysis of the American Recovery and Reinvestment Act of 2009 on February 11th.[2] This analysis gives a low and a high estimate of the effect of the Act on output. We use these to construct a low and a high estimate of the implicit CBO post-policy forecast, based on the January 8 baseline.[3]
- **Macroeconomic Advisers**
  Macroeconomic Advisers is a respected private forecaster reported in the Blue Chip Consensus. Their comparable forecast was released on December 24, 2009.

Table 1 shows the forecasted year-over-year growth rates for the four forecasts. Figure 1 shows the forecasted path of GDP (in chained 2000 dollars) from the four forecasts.

Table 1
Forecasted GDP Growth (Year/Year)

	2009	2010
Administration	-1.2%	3.2%
CBO (Average of Low and High)	-0.9	2.6
Blue Chip (Jan.)	-1.6	2.4
Macroeconomic Advisers (Dec.)	-1.3	3.7

Value of Ex-Dividend Adjustment.

	Company	Growth [1] Rate, g (Percent) [a]	Expected 2 Dividend ($) [b]	Adjusted 3 Stock Price, P0 ($) [c]	Dividend [4] Z (Percent) [d] = [b/c]	ROE, ke [5] Before S&I (Percent) [e] = [a + d]	S&I [6] Adjusted Stock Price ($) [f]	S&I ROE Impact (Basis Points) [g] = [h-i]	S&I Adjusted ROE (Percent) [h] = [b/f]+[a]
1	ALLETE	2.87	1.79	28.70	6.24	9.11	27.44	29	9.39
2	Alliant Energy	4.67	1.52	25.15	6.04	10.70	24.05	28	10.98
3	Ameren Corp.	2.10	2.08	24.32	8.56	10.67	23.26	39	11.06
4	American Electric Pow	4.13	1.71	28.15	6.07	10.19	26.92	28	10.47
5	Avista Corp.	3.79	0.78	17.16	4.54	8.33	16.41	21	8.53
6	Cleco Corp.	6.87	0.96	22.04	4.36	11.23	21.08	20	11.43
7	Consolidated Edison	3.41	2.43	36.98	6.57	9.98	35.36	30	10.28
8	DPL Inc.	7.29	1.20	22.85	5.26	12.55	21.85	24	12.79
9	DTE Energy Co.	5.78	2.24	31.81	7.05	12.83	30.42	32	13.15
10	Duke Energy Corp.	4.20	0.97	14.50	6.68	10.88	13.86	31	11.19
11	Edison International	5.34	1.30	30.78	4.23	9.57	29.43	19	9.76
12	Empire Dist. Elec.	7.26	1.37	16.65	8.25	15.51	15.92	38	15.88
13	Entergy Corp.	5.78	3.17	75.92	4.18	9.96	72.60	19	10.16
14	FirstEnergy Corp.	4.96	2.31	39.59	5.83	10.79	37.86	27	11.06
15	FPL Group, Inc.	7.73	1.98	56.43	3.50	11.23	53.97	16	11.39
16	Hawaiian Electric	6.72	1.32	17.80	7.43	14.15	17.02	34	14.49
17	IdaCorp	4.02	1.25	25.17	4.96	8.98	24.07	23	9.21
18	MGE Energy	5.05	1.52	33.20	4.58	9.62	31.75	21	9.83
19	NiSource Inc.	1.30	0.93	11.67	7.99	9.29	11.16	36	9.65
20	Northeast Utilities	4.20	0.94	21.80	4.30	8.50	20.85	20	8.70
21	NSTAR	6.99	1.58	30.97	5.10	12.08	29.61	23	12.31
22	PG&E Corp.	5.62	1.71	37.82	4.52	10.15	36.17	21	10.35
23	Pinnacle West	5.70	2.22	29.35	7.56	13.27	28.07	35	13.61
24	Portland General	5.58	1.05	18.79	5.56	11.14	17.97	25	11.40
25	Progress Energy	3.36	2.56	36.95	6.92	10.28	35.33	32	10.60
26	Public Service Enter	7.77	1.41	32.18	4.39	12.16	30.78	20	12.36
27	Southern Co.	5.48	1.81	30.28	5.97	11.45	28.96	27	11.72
28	Teco Energy, Inc.	8.74	0.87	11.92	7.30	16.04	11.40	33	16.37
29	Vectren Corp.	5.30	1.40	23.33	6.00	11.30	22.31	27	11.57
30	Wisconsin Energy	7.45	1.31	40.57	3.22	10.67	38.80	15	10.82
31	Xcel Energy, Inc.	5.92	1.02	18.32	5.55	11.47	17.51	25	11.72
	Average					**11.10 %**		**26**	**11.36**

Notes:

[1] Simple Average of Value Line and BR+SV growth rates. See Exhibit JDM-11.

[2] Expected Dividend = [D0*(1+g)]. See Exhibit JDM-8.

[3] Adjusted Stock Price. See Exhibit JDM-7.

[4] Forward Annual Dividend per Share (Df) = {[D0*(1+g)]/P0}.

[5] Not adjusted for selling and issuance expenses.

[6] S&I Adjusted Stock Price = (Average S&I Expense)*(Adjusted Stock Price).

Exhibit____(FP-24)

BEFORE THE
STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Cases 09-E-0715, 09-G-0716, 09-E-0717, and 09-G-0718

IN THE MATTER OF

New York State Electric & Gas Corporation
And
Rochester Gas & Electric Corporation

ELECTRIC AND GAS RATES

January 2010

Exhibit____(Staff Finance Panel-24)

Hawaii Electric Dividend Demonstration

Company	Beta	Price	EPS 2012-14	DPS 2009	DPS 2010	DPS 2012-14	BPS 2009	BPS 2010	BPS 2012-14	# of Shares 2009	# of Shares 2012-14	DPS Growth 2011-14
Hawaiian Electric	0.75	$17.72	1.75	1.24	1.24	1.24	20.90	21.40	22.25	135.00	157.00	0.00%
Hawaiian Electric	0.75	$17.72	1.75	1.24	1.28	1.40	20.90	21.40	22.13	135.00	157.00	2.33%
Hawaiian Electric	0.75	$17.72	1.91	1.24	1.24	1.24	20.90	21.40	22.25	135.00	157.00	0.00%

Company	Retention Rate 2012	Return on Equity 2012	B x R	Increase in Shares	PBR 2008	S Factor	V Factor	S x V	Sustainable Growth	Long-Form ROE
Hawaiian Electric	29.14%	7.92%	2.31%	3.85%	0.85	0.03	-0.18	-0.59%	1.72%	8.32%
Hawaiian Electric	20.00%	7.95%	1.59%	3.85%	0.85	0.03	-0.18	-0.59%	1.00%	8.53%
Hawaiian Electric	35.08%	8.64%	3.03%	3.85%	0.85	0.03	-0.18	-0.59%	2.44%	8.89%
Median									**1.72%**	**8.53%**

Summary of Recent ROE Awards in Other Jurisdictions as of December 28, 2009
(Excluding unreported ROE Cases and NYS PSC cases)

	State	Company	Case Identification	Service	Increase Requested						Increase Authorized								
					Date	Rate increase ($M)	Return on rate base (%)	Return on Equity (%)	Common Equity/Total Cap(%)	Rate Base($M)	Date	Rate increase ($M)	Return on rate base (%)	Return on Equity (%)	Common Equity/Total Cap(%)	Test Year End	Rate Base($M)	Rate Base valuation Method	Lag (Months)
1	Arkansas	Oklahoma Gas and Electric Co.	D-08-103-U	Electric	8/29/2008	26.4	7.38	12.25	41.96	386.5	5/20/2009	13.3	6.43	10.25	36.04	Dec-07	358.7	Year-end	8
2	Arkansas	Southwestern Electric Power Co	D-09-008-U	Electric	2/19/2009	25.3	7	11.5	35.68	609.00	11/24/2009	17.8	6.01	10.25	33.99	Dec-08	612.30	Year-end	9
3	Arizona	Arizona Public Service Co.	D-E-01345A-08-0172	Electric	3/24/2008	448.2	8.86	11.5	53.8	5,360.00	12/16/2009	344.7	8.58	11	53.79	Dec-07	5,582.10	Year-end	21
4	California	Sierra Pacific Power Co.	AP-08-08-004	Electric	8/1/2008	8.9	8.81	11.4	43.71	146.50	11/3/2009	5.5	8.51	10.7	43.71	Dec-09	141.50	Average	15
5	California	Southern California Edison Co.	Ap-07-11-011	Electric	11/19/2007	738.7	8.75	11.5	48	13,242.00	3/12/2009	308.1	8.75	11.5	48	Dec-09	12,766.50	Average	15
6	Colorado	Public Service Co. of CO	D-09AL-299E	Electric	5/1/2009	285.5	9.14	11.25	58.05	4,440.50	12/3/2009	237.9	NA	10.5	NA	Dec-08	NA	Average	7
7	Colorado	Public Service Co. of CO	D-08S-520E	Electric	11/14/2008	159.3	9.01	11	58.08	4,122.20	5/27/2009	112.2	NA	NA	NA	NA	NA	NA	6
8	Connecticut	CT Natural Gas Corp.	D-08-12-06	Natural Gas	1/16/2009	7.4	10.09	12.2	58	355.00	6/30/2009	-16.2	7.92	9.31	52.52	Jun-08	332.90	Date Certain	5
9	Connecticut	Southern Connecticut Gas Co.	D-08-12-07	Natural Gas	1/20/2009	34.2	10.08	12.2	57.61	484.50	7/17/2009	-12.5	8.05	9.26	52	Jun-08	436.80	Date Certain	5
10	Connecticut	United Illuminating Co.	D-08-07-04	Electric	8/8/2008	52.4	8.75	10.75	50	511.30	2/4/2009	6.1	7.59	8.75	50	Dec-07	498.70	Average	6
11	Florida	Florida Public Utilities Co.	D-080366-GU	Natural Gas	12/17/2008	9.9	8.74	11.75	42.41	73.70	5/27/2009	8.5	8.17	10.85	42.17	Dec-09	73.30	Average	5
12	Florida	Peoples Gas System	D-080318-GU	Natural Gas	8/11/2008	26.5	8.88	11.5	48.54	563.60	5/5/2009	19.2	8.5	10.75	48.51	Dec-09	560.80	Average	8
13	Florida	Tampa Electric Co.	D-080317-EI	Electric	8/11/2008	228.2	8.82	12	50.21	3,656.80	3/17/2009	147.7	8.29	11.25	47.49	Dec-09	3,613.00	Average	7
14	Iowa	Black Hills Iowa Gas Utility	D-RPU-08-3	Natural Gas	6/3/2008	13.6	9.51	11.5	52.31	94.20	6/3/2009	10.4	8.71	10.1	51.38	Dec-07	87.60	Average	12
15	Idaho	Avista Corp.	C-AVU-E-09-01	Electric	1/23/2009	31.2	8.8	11	50	577.40	7/17/2009	12.5	8.55	10.5	50	Sep-08	576.30	Average	5
16	Idaho	Avista Corp.	C-AVU-G-09-01	Natural Gas	1/23/2009	2.7	8.8	11	50	90.50	7/17/2009	1.9	8.55	10.5	50	Sep-08	90.00	Average	5
17	Idaho	Idaho Power Co.	C-IPC-E-09-07	Electric	3/13/2009	11.2	8.18	10.5	49.27	NA	5/29/2009	10.5	8.18	10.5	49.27	Dec-09	NA	NA	2
18	Idaho	Idaho Power Co.	C-IPC-E-08-10	Electric	6/27/2008	66.6	8.55	11.25	49.27	2,093.40	1/30/2009	27	8.18	10.5	49.27	Dec-08	2,094.10	Year-end	7
19	Idaho	PacifiCorp	C-PAC-E-08-07	Electric	NA	19.4	8.49	10.75	50.4	565.40	4/16/2009	4.4	NA	NA	NA	NA	NA	NA	
20	Illinois	Northern Illinois Gas Co.	D-08-0363	Natural Gas	4/29/2008	140.4	9.27	11.15	56.8	1,515.70	3/25/2009	80.2	8.09	10.17	51.07	Dec-09	1,336.60	Average	11
21	Indiana	Indiana Michigan Power Co.	Ca-43306	Electric	1/31/2008	80.2	8.1	11.5	45.8	1,999.10	3/4/2009	19.1	7.62	10.5	45.8	Sep-07	2,000.90	Year-end	13
22	Kansas	Kansas City Power & Light	D-09-KCPE-246-RTS	Electric	9/5/2008	71.6	8.75	10.75	55.39	1,254.10	6/24/2009	59	NA	NA	NA	Dec-07	NA	Year-end	9
23	Kansas	Kansas Gas and Electric Co.	D-08-WSEE-1041-RTS (KG&E)	Electric	5/28/2008	87.6	8.69	10.95	48.46	1,517.30	1/21/2009	65	NA	NA	NA	NA	NA	NA	7
24	Kansas	Westar Energy inc.	D-08-WSEE-1041-RTS (WR)	Electric	5/28/2008	90	8.68	10.95	48.46	1,641.10	1/21/2009	65	NA	NA	NA	NA	NA	NA	7
25	Kentucky	Columbia Gas of Kentucky Inc	C-2009-00141	Natural Gas	5/1/2009	11.6	9	12.25	52.02	181.70	10/26/2009	6.1	NA	NA	NA	NA	NA	NA	5
26	Kentucky	Kentucky Utilities Co.	C-2008-00251	Electric	7/29/2008	22.2	7.77	11.25	52.63	2,216.90	2/5/2009	-8.9	NA	NA	NA	NA	NA	NA	6
27	Kentucky	Louisville Gas & Electric Co.	C-2008-00252 (elec.)	Electric	7/29/2008	15.1	8.3	11.25	52.48	1,795.20	2/5/2009	-13.2	NA	NA	NA	NA	NA	NA	6
28	Kentucky	Louisville Gas & Electric Co.	C-2008-00252 (gas)	Natural Gas	7/29/2008	29.8	8.12	11.25	52.48	438.50	2/5/2009	22	NA	NA	NA	NA	NA	NA	6
29	Louisiana	Cleco Power LLC	D-U-30689	Electric	7/14/2008	250.1	9.38	12.25	52.04	1,907.50	10/14/2009	173.3	8.52	10.7	51	Jun-09	1,936.70	Average	15
30	Louisiana	Entergy New Orleans Inc.	D-UD-08-03 (elec.)	Electric	7/31/2008	-18.2	8.78	11.75	48.66	347.60	4/2/2009	-24.7	NA	11.1	NA	Dec-08	NA	Year-end	8
31	Louisiana	Entergy New Orleans Inc.	D-UD-08-03 (gas)	Natural Gas	7/31/2008	8.4	8.78	11.75	48.66	77.80	4/2/2009	5	NA	10.75	NA	Dec-08	NA	Year-end	8
32	Massachusetts	Bay State Gas Co.	DPU 09-30	Natural Gas	4/16/2009	34.6	9.41	12.25	53.57	468.80	10/30/2009	19.1	8.18	9.95	53.57	Dec-08	467.10	Year-end	6
33	Massachusetts	Massachusetts Electric Co.	DPU 09-39	Electric	5/15/2009	111.3	9.2	11.6	50.36	1,485.70	11/30/2009	43.9	7.85	10.35	43.15	Dec-08	1,521.00	Year-end	6
34	Massachusetts	New England Gas Company	DPU 08-35	Natural Gas	7/17/2008	5.6	8.73	11.4	47	51.90	2/2/2009	3.7	7.74	10.05	34.19	Dec-07	50.70	Year-end	6
35	Maryland	Delmarva Power & Light Co.	C-9192	Electric	5/6/2009	14.1	8.58	11.25	49.87	310.40	12/2/2009	7.5	7.96	NA	NA	Dec-08	NA	Average	7
36	Michigan	Consumers Energy Co.	C-U-15645	Electric	11/14/2008	179	7.12	11	40.88	6,267.00	11/2/2009	139.4	6.98	10.7	40.51	Dec-09	6,146.80	Average	11
37	Michigan	Michigan Gas Utilities Corp	C-U-15990	Natural Gas	7/1/2009	8.4	7.79	12	47.27	189.90	12/16/2009	3.5	7.16	10.75	47.27	Dec-10	NA	NA	5
38	Michigan	Michigan Gas Utilities Corp	C-U-15549	Natural Gas	5/16/2008	13.9	7.97	11.25	46.49	204.00	1/13/2009	6	7.6	10.45	46.49	Dec-09	NA	NA	8
39	Michigan	Upper Peninsula Power Co.	C-U-15988	Electric	6/26/2009	12.2	8.67	12	49.52	145.50	12/16/2009	6.5	7.83	10.9	49.52	Dec-10	NA	NA	5
40	Minnesota	ALLETE (Minnesota Power)	D-E-015/GR-08-415	Electric	5/2/2008	45	8.68	11.15	54.79	713.10	4/3/2009	20.4	8.45	10.74	54.79	Jun-09	703.00	Average	11
41	Minnesota	CenterPoint Energy Resources	D-G-008/GR-08-1075	Natural Gas	11/3/2008	59.8	8.29	11	50.45	692.00	12/1/2009	43	8.09	10.24	52.55	Dec-09	NA	NA	13
42	Minnesota	Minnesota Energy Resources	D-G-007,011/GR-08-835	Natural Gas	7/31/2008	17.9	8.73	11.75	48.77	189.40	5/21/2009	15.4	7.98	10.21	48.77	Dec-08	189.40	Average	9
43	Minnesota	Northern States Power Co. - MN	D-E-002/GR-08-1065	Electric	11/3/2008	135.8	8.89	11	52.47	4,067.40	10/23/2009	91.4	8.83	10.88	52.47	Dec-09	4,070.40	Average	11
44	Missouri	Kansas City Power & Light	C-ER-2009-0089	Electric	9/5/2008	101.5	8.69	10.75	53.82	1,501.40	6/10/2009	95	NA	NA	NA	Dec-07	NA	Year-end	9
45	Missouri	KCP&L Greater Missouri Op Co	C-ER-2009-0090 (L&P)	Electric	9/5/2008	17.1	9.29	10.75	53.82	305.00	6/10/2009	15	NA	NA	NA	Dec-07	NA	Year-end	9
46	Missouri	KCP&L Greater Missouri Op Co	C-ER-2009-0090 (MPS)	Electric	9/5/2008	66	8.93	10.75	53.82	1,202.20	6/10/2009	48	NA	NA	NA	Dec-07	NA	Year-end	9
47	Missouri	Union Electric Co.	C-ER-2008-0318	Electric	4/4/2008	242.7	8.36	10.9	50.93	5,954.20	1/27/2009	161.7	8.34	10.76	52.01	Mar-08	5,786.80	Year-end	9
48	North Carolina	Duke Energy Carolinas LLC	D-E-7, Sub 909	Electric	6/2/2009	481.7	8.84	11.5	53	9,673.10	12/7/2009	315.2	8.38	10.7	52.5	Dec-08	9,533.00	Year-end	6
49	North Dakota	Otter Tail Corp.	C-PU-08-862	Electric	11/3/2008	6.1	8.89	11.25	53.3	187.20	11/25/2009	3.1	8.62	10.75	53.3	Dec-07	187.40	Average	12
50	New Hampshire	EnergyNorth Natural Gas Inc	D-DG-08-009	Natural Gas	2/25/2008	8.8	9.64	12.25	50	145.90	5/29/2009	5.5	8.28	9.54	50	Jun-07	145.90	Average	15
51	New Jersey	Pivotal Utility Holdings Inc.	D-GR-09030195	Natural Gas	3/10/2009	17.4	8.41	11.25	49.7	444.10	12/17/2009	2.9	7.64	10.3	47.89	Sep-09	420.00	Year-end	9
52	New Mexico	El Paso Electric Co.	C-09-00171-UT	Electric	5/29/2009	12.7	9.06	11.5	49.35	339.30	12/10/2009	5.5	NA	NA	NA	NA	339.30	Year-end	6
53	New Mexico	Public Service Co. of NM	C-08-00273-UT	Electric	9/22/2008	123.3	9.4	11.75	50.47	1,599.20	5/28/2009	77	8.77	10.5	50.47	Mar-08	1,489.00	Year-end	8
54	New Mexico	Southwestern Public Service Co	C-08-00354-UT	Electric	12/18/2008	24.6	9.5	12	50	321.00	7/14/2009	14.2	NA	NA	NA	NA	NA	NA	6
55	Nevada	Nevada Power Co.	D-08-12002	Electric	12/1/2008	305.7	8.86	11.26	44.15	5,009.50	6/24/2009	222.7	8.66	10.8	44.15	Jun-08	4,680.90	Year-end	6
56	Nevada	Southwest Gas Corp.	D-09-04003 (Southern)	Natural Gas	4/3/2009	26.5	7.7	10.8	47.09	823.40	10/28/2009	17.6	7.4	10.15	47.09	Nov-08	819.70	Year-end	6
57	Nevada	Southwest Gas Corp.	D-09-04003 (Northern)	Natural Gas	4/3/2009	1.3	8.6	10.8	47.09	119.10	10/28/2009	-0.5	8.3	10.15	47.09	Nov-08	116.60	Year-end	6
58	Ohio	Cleveland Elec Illuminating Co	C-07-0551-EL-AIR (CEI)	Electric	6/7/2007	108.6	9.15	11.75	49	1,295.80	1/21/2009	29.2	8.48	10.5	49	Feb-08	983.60	Date Certain	19
59	Ohio	Duke Energy Ohio Inc.	C-08-0709-EL-AIR	Electric	7/25/2008	85.6	9.1	11	58.28	979.50	7/8/2009	55.3	8.61	10.63	51.59	Dec-08	963.80	Date Certain	11
60	Ohio	Ohio Edison Co.	C-07-0551-EL-AIR (OE)	Electric	6/7/2007	160.8	9.06	11.75	49	1,590.80	1/21/2009	68.9	8.48	10.5	49	Feb-08	1,251.30	Date Certain	19
61	Ohio	Toledo Edison Co.	C-07-0551-EL-AIR (TE)	Electric	6/7/2007	70.5	8.95	11.75	49	523.30	1/21/2009	38.5	8.48	10.5	49	Feb-08	414.00	Date Certain	19

Summary of Recent ROE Awards in Other Jurisdictions as of December 28, 2009
(Excluding unreported ROE Cases and NYS PSC cases)

	State	Company	Case Identification	Service	Increase Requested Date	Rate Increase ($M)	Return on rate base (%)	Return on Equity (%)	Common Equity/Total Cap(%)	Rate Base($M)	Increase Authorized Date	Rate Increase ($M)	Return on rate base (%)	Return on Equity (%)	Common Equity/Total Cap(%)	Test Year End	Rate Base($M)	Rate Base valuation Method	Lag (Months)
62	Ohio	Vectren Energy Delivery Ohio	C-07-1080-GA-AIR	Natural Gas	11/20/2007	27	9.36	11.5	52	231.90	1/7/2009	14.8	8.89	NA	NA	May-08	234.80	Date Certain	13
63	Oklahoma	Oklahoma Gas and Electric Co.	Ca-PUD200800398	Electric	2/27/2009	110.3	9.64	12.25	54.14	2,862.70	7/24/2009	48.3	NA	NA	NA	Sep-08	NA	Year-end	4
64	Oklahoma	ONEOK Inc.	Ca-PUD200900110	Natural Gas	6/26/2009	66.1	8.81	11	55.3	764.20	12/14/2009	54.5	8.53	10.5	55.3	Dec-08	752.70	Year-end	5
65	Oklahoma	Public Service Co. of OK	Ca-PUD-200800144	Electric	7/11/2008	132.6	8.64	11.25	44.1	1,545.20	1/14/2009	59.3	8.31	10.5	44.1	Feb-08	1,467.30	Year-end	6
66	Oregon	Avista Corp.	D-UG-186	Natural Gas	6/25/2009	14.2	8.96	11	51.45	147.60	10/26/2009	8.8	8.19	10.1	50	Dec-10	133.40	Average	4
67	Pennsylvania	Equitable Gas Company	C-R-2008-2029325	Natural Gas	6/30/2008	51.9	8.89	11.95	50	583.30	2/26/2009	38.4	NA	NA	NA	Dec-08	NA	NA	8
68	Pennsylvania	UGI Central Penn Gas	R-2008-2079675	Natural Gas	1/29/2009	19.6	8.95	12.25	49.03	254.00	8/27/2009	10	NA	NA	NA	Sep-09	NA	NA	7
69	Pennsylvania	UGI Penn Natural Gas	R-2008-2079660	Natural Gas	1/29/2009	38.1	8.95	12.25	49.03	423.30	8/27/2009	19.8	NA	NA	NA	Sep-09	NA	NA	7
70	Tennessee	Atmos Energy Corp.	D-08-00197	Natural Gas	10/15/2008	7.4	9.04	11.7	50	190.10	3/9/2009	2.5	8.24	10.3	48.12	Mar-10	190.10	Average	4
71	Texas	Entergy Texas Inc.	D-34800	Electric	9/26/2007	107.5	8.67	11	48.69	1,746.10	3/11/2009	30.5	NA	NA	NA	Mar-07	NA	NA	17
72	Texas	Oncor Electric Delivery Co.	D-35717	Electric	6/27/2008	241.6	8.55	11.5	40	7,302.60	8/13/2009	115.1	8.28	10.25	40	Dec-07	7,073.70	Year-end	13
73	Texas	Southwestern Public Service Co	D-35763	Electric	6/12/2008	94.4	8.85	11.25	51.01	989.40	5/22/2009	57.4	NA	NA	NA	Dec-07	NA	NA	11
74	Texas	Texas-New Mexico Power Co.	D-36025	Electric	8/29/2008	24.4	10.16	11.25	40	430.10	8/13/2009	12.7	NA	NA	NA	Mar-08	NA	NA	11
75	Utah	PacifiCorp	D-08-035-38	Electric	7/17/2008	137.8	8.69	11	51.5	4,549.60	4/21/2009	45	8.36	10.61	51	Dec-09	NA	Average	9
76	Washington	Avista Corp.	D-UE-090134	Electric	1/23/2009	69.8	8.68	11	47.51	1,007.10	12/22/2009	12.1	8.25	10.2	46.5	Sep-08	991.00	Average	11
77	Washington	Avista Corp.	D-UG-090135	Natural Gas	1/23/2009	4.9	8.68	11	47.51	178.30	12/22/2009	0.6	8.25	10.2	46.5	Sep-08	169.60	Average	11
78	Washington	PacifiCorp	D-UE-090205	Electric	2/9/2009	38.5	8.51	11	50.1	737.90	12/16/2009	13.5	8.06	NA	NA	NA	NA	NA	10
79	Wisconsin	Madison Gas and Electric Co.	D-3270-UR-116 (elec)	Electric	4/29/2009	16	9.26	10.8	56.05	412.10	12/22/2009	11.9	8.67	10.4	55.34	Dec-10	420.20	Average	7
80	Wisconsin	Madison Gas and Electric Co.	D-3270-UR-116 (gas)	Natural Gas	4/29/2009	4.4	9.18	10.8	56.05	130.20	12/22/2009	-1.5	8.86	10.4	55.34	Dec-10	122.70	Average	7
81	Wisconsin	Northern States Power Co - WI	D-4220-UR-116 (elec)	Electric	6/1/2009	30.4	9.22	10.75	53.12	644.00	12/22/2009	6.4	8.93	10.4	52.3	Dec-10	644.00	Average	6
82	Wisconsin	Wisconsin Electric Power Co.	D-5-UR-104 (WEP-EL)	Electric	3/13/2009	126.6	9.53	10.75	52.97	3,229.70	12/18/2009	85.8	8.96	10.4	53.02	Dec-10	3,181.90	Average	9
83	Wisconsin	Wisconsin Electric Power Co.	D-5-UR-104 (WEP-GAS)	Natural Gas	3/13/2009	22.1	9.45	10.75	52.97	412.90	12/18/2009	-2	8.85	10.4	53.02	Dec-10	402.00	Average	9
84	Wisconsin	Wisconsin Gas LLC	D-5-UR-104 (WG)	Natural Gas	3/13/2009	38.9	10.2	10.75	46.68	611.40	12/18/2009	5.7	9.09	10.5	46.62	Dec-10	592.40	Average	9
85	Wisconsin	Wisconsin Power and Light Co	6680 UR-117 (elec)	Electric	5/8/2009	85.5	11.52	10.6	53.54	1,362.00	12/18/2009	58.6	9.81	10.4	50.38	Dec-10	1,381.20	Average	7
86	Wisconsin	Wisconsin Power and Light Co	6680-UR-117 (gas)	Natural Gas	5/8/2009	6.2	9.71	10.6	53.54	212.20	12/18/2009	5.6	8.84	10.4	50.38	Dec-10	214.90	Average	7
87	West Virginia	Hope Gas Inc	C-08-1783-G-42T	Natural Gas	10/16/2008	34.4	9.55	12	50.59	169.10	11/20/2009	8.8	6.86	9.45	42.34	Mar-08	75.60	Average	13
88	Wyoming	PacifiCorp	D-20000-333-ER-08	Electric	7/24/2008	28.7	8.53	10.75	51.9	1,490.00	5/20/2009	18	NA	NA	NA	NA	NA	NA	10
											Median		10.50	49.40				
											Average		10.41	48.54				
											Minimum		8.75	34.19				
											Maximum		11.50	55.34				

Source
Regulatory Research Associates Website accessed on December 28, 2009
Link:
RRA Rate Case History for 2009, Excluding NYS