Missouri Gas Energy
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to the Financial Supporting Exhibits
of Frank J. Hanley

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Missouri Gas Energy
Summary of Cost of Capital and Fair Rate of Return
Based on a Hypothetical Capital Structure

Type of Capital	Ratios (1)	Cost Rate	Weighted Cost Rate
Long-Term Debt	41.06%	6.080% (2)	2.496%
Short-Term Debt	10.94%	4.920% (3)	0.538%
Total Debt	52.00%		
Common Equity	48.00%	11.250% (4)	5.400%
Total	100.00%		8.434%

Based on the Actual Capital Structure of Southern Union Company at December 31, 2008

Type of Capital	Ratios (5)	Cost Rate	Weighted Cost Rate
Long-Term Debt	56.16%	6.258% (5)	3.514%
Short-Term Debt	3.26%	5.920% (6)	0.193%
Preferred Equity	1.92%	7.758% (5)	0.149%
Common Equity	38.66%	15.250% (4)	5.896%
Total	100.00%		9.752%

(1) The 52.00% total debt ratio has been allocated between the long-term and short-term debt based upon the average long-term and short-term debt ratios of the proxy group of nine Value Line natural gas distribution companies for the five quarters ended December 31, 2008 as shown on Page 4 of Schedule FJH-5. The allocation is derived as follows:

	Average for the Five Quarters ended December 31, 2008	Proxy Group of Nine Value Line Natural Gas Distribution Companies	Percent of Total Debt
Long-Term Debt	40.84 %		78.96 %
Short-Term Debt	10.88 %		21.04 %
Total Debt	51.73 %		100.00 %

Therefore, the hypothetical long-term debt ratio of 41.06% is derived as 78.96% * 52.00%, and the short-term debt ratio of 10.94% is derived as 21.04% * 52.00%.

(2) Derived on Schedule FJH-9.
(3) Based on 250 basis points plus an 100 basis points upfront cost above the six-quarter projected average beginning with the fist quarter of 2009 and ending with the second quarter of 2010 of the 3-month LIBOR rate of 1.42% (from Page 7 of Schedule FJH-15).
(4) Based upon informed judgment from the entire study, the principal results of which are summarized on page 2 of Schedule FJH-1.
(5) Provided by Southern Union Company.
(6) Based on 350 basis points plus an 100 basis points upfront cost above the six-quarter projected average beginning with the fist quarter of 2009 and ending with the second quarter of 2010 of the 3-month LIBOR rate of 1.42% (from Page 7 of Schedule FJH-15).

Missouri Gas Energy
Brief Summary of Common Equity Cost Rate

No.	Principal Methods	Proxy Group of Nine Value Line Natural Gas Distribution Companies	Southern Union Company
1.	Discounted Cash Flow Model (DCF) (1)	9.82 %	13.74 %
2.	Risk Premium Model (RPM) (2)	12.36	14.50
3.	Capital Asset Pricing Model (CAPM) (3)	11.33	15.10
4.	Comparable Earnings Model (CEM) (4)	NMF	15.50
5.	Indicated Common Equity Cost Rate before Adjustment for Business Risk (5)	11.09 %	14.62 %
6.	Business Risk Adjustment (6)	0.15	0.65
7.	Indicated Common Equity Cost Rate	11.24 %	15.27 %
8.	Recommended Common Equity Cost Rate	**11.25 %**	**15.25 %**

Notes:
(1) From Schedule FJH-11.
(2) From page 1 of Schedule FJH-15.
(3) From page 1 Schedule FJH-18.
(4) The CEM results are on Pages 1 and 2 of Schedule FJH-19. Mr. Hanley considers the result for the proxy group of nine Value Line natural gas distribution companies abberant relative to the other cost of equity models and are not meaningful (NMF) in this particular study as explained in his direct testimony.
(5) Mid-point of the range of common equity cost rates produced by the cost of common equity models. For example, the indicated common equity cost rate for the proxy group of nine Value Line natural gas distribution companies, 11.09%, is the mid-point of the range of its cost of common equity results which is 9.82% - 12.36%. If the results of the cost of common equity models were averaged instead of taking the mid-point of the range, the indicated common equity cost rate would be 11.17% for the proxy group and 14.71% for SUG.
(6) Business risk adjustment to reflect Missouri Gas Energy's greater business risk due to its small size relative to the proxy groups as detailed in Mr. Hanley's accompanying direct testimony.

Missouri Gas Energy
Derivation of Investment Risk Adjustment Based upon
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE/AMEX/NASDAQ

Line No.		1 Market Capitalization on February 13, 2009 (1) (millions)	(times larger)	2 Applicable Decile of the NYSE/AMEX/ NASDAQ (2)	3 Applicable Size Premium (3)	4 Spread from Applicable Size Premium for (4)
1.	Missouri Gas Energy					
a.	Based Upon the Proxy Group of Nine Value Line Natural Gas Distribution Companies	$ 681.129		8	2.20%	
b.	Based on Southern Union Company	$ 298.652		9 -10	4.19%	
2.	Proxy Group of Nine Value Line Natural Gas Distribution Companies	$ 1,588.999	2.3 x	6	1.60%	0.60%
3.	Southern Union Company	$ 1,725.432	5.8	6	1.60%	2.59%

(A) Decile	(B) Number of Companies	(C) Recent Total Market Capitalization (millions)	(D) Recent Average Market Capitalization (millions)	(E) Size Premium (Return in Excess of CAPM) (2)
1 - Largest	167	$ 10,357,817.750	$ 62,022.861	-0.34%
2	174	2,327,351.920	$ 13,375.586	0.68%
3	192	1,111,672.200	$ 5,789.959	0.76%
4	184	709,696.610	$ 3,857.047	0.93%
5	203	541,399.790	$ 2,666.994	1.47%
6	251	411,039.680	$ 1,637.608	1.60%
7	275	379,465.160	$ 1,379.873	1.50%
8	380	291,182.590	$ 766.270	2.20%
9	641	284,538.240	$ 443.897	2.56%
10 - Smallest	1775	201,705.150	$ 113.637	5.82%

*From pages 7 and 14 of this Schedule

Notes:
(1) From Page 3 of this Schedule.
(2) Gleaned from Column (D) on the bottom of this page. The appropriate decile (Column (A)) corresponds to the market capitalization of the proxy group, which is found in Column 1.
(3) Corresponding risk premium to the decile is provided on Column (E) on the bottom of this page.
(4) Line No. 1a Column 3 – Line No. 2 Column 3 and Line No. 1b, Column 3 – Line No. 3 of Column 3 etc. For example, the 0.60% in Column 4, Line No. 2 is derived as follows 0.60% = 2.20% - 1.60%.
(5) From MGE's 2007 Annual Report to the Public Service Commission of Missouri.
(6) Derived on Schedule FJH-5.
(7) Derived on Schedule FJH-6.

Missouri Gas Energy
Market Capitalization of Missouri Gas Energy
the Proxy Group of Nine Value Line Natural Gas Distribution Companies,
and Southern Union Company

Company	Exchange	1 Common Stock Shares Outstanding at December 31, 2007 (millions)	2 Book Value per Share at December 31, 2007 (1)	3 Total Common Equity at December 31, 2007 (millions)	4 Closing Stock Market Price on February 13, 2009	5 Market-to-Book Ratio on February 13, 2009 (2)	6 Market Capitalization on February 13, 2009 (3) (millions)
Missouri Gas Energy		NA	NA	$ 389.885 (4)	NA		
Based Upon the Proxy Group of Nine Value Line Natural Gas Distribution Companies						174.7 % (5)	$ 681.129 (6)
Based on Southern Union Company						76.6 %(7)	$ 298.652 (8)
Proxy Group of Nine Value Line Natural Gas Distribution Companies							
AGL Resources Inc.	NYSE	76.900	$ 21.482	$ 1,652.000	$ 31.460	146.4 %	$ 2,419.274
Atmos Energy Corp.	NYSE	90.815	22.601	2,052.492	25.190	111.5	2,287.622
The Laclede Group, Inc.	NYSE	21.993	22.119	486.479	45.300	204.8	996.304
New Jersey Resources Corp.	NYSE	42.176	17.236	726.958	39.230	227.6	1,654.564
Northwest Natural Gas Co.	NYSE	26.594	23.628	628.373	43.870	185.7	1,166.679
Piedmont Natural Gas Co., Inc.	NYSE	73.246	12.113	887.244	26.030	214.9	1,906.593
South Jersey Industries, Inc.	NYSE	29.843	17.265	515.254	37.860	219.3	1,129.856
Southwest Gas Corporation	NYSE	44.192	23.485	1,037.841	24.210	103.1	1,069.877
WGL Holdings, Inc.	NYSE	49.917	20.986	1,047.564	33.460	159.4	1,670.219
Average		50.631	$ 20.102	$ 1,003.801	$ 34.068	174.7 %	$ 1,588.999
Southern Union Company	NYSE	125.122	$ 18.006	$ 2,252.952	$ 13.790	76.6 %	$ 1,725.432

NA = Not Available

Notes:
(1) Column 3 / Column 1.

(2) Column 4 / Column 2.

(3) Column 5 * Column 3.

(4) From MGE's 2007 Annual Report to the Public Service Commission of Missouri.

(5) The market-to-book ratio of Missouri Gas Energy on February 13, 2009 is assumed to be equal to the average market-to-book ratio at February 13, 2009 of the Proxy Group of Nine Value Line Natural Gas Distribution Companies.

(6) Missouri Gas Energy's common stock, if traded, would trade at a market-to-book ratio equal to the average market-to-book ratio at February 13, 2009 of the Proxy Group of Nine Value Line Natural Gas Distribution Companies, 174.7%, and Missouri Gas Energy's market capitalization on February 13, 2009 would thisefore have been $681.129 million. ($681.129 = $389.885 * 174.7%).

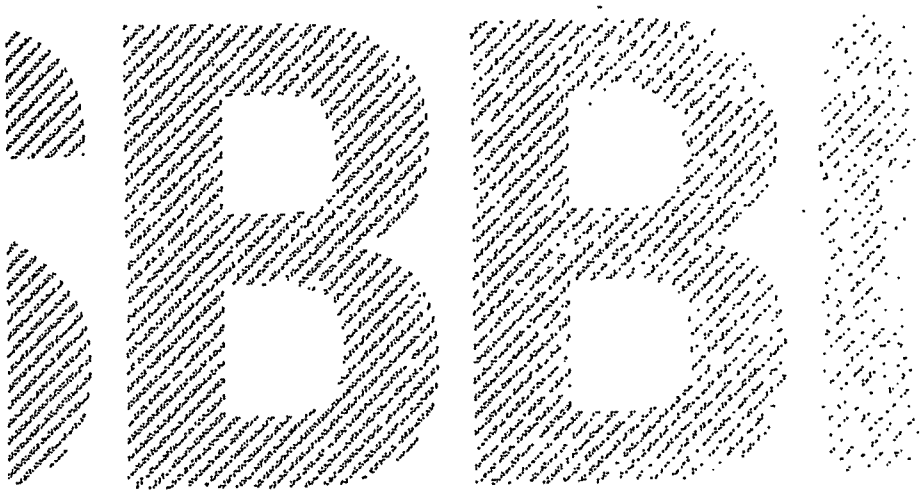
(7) The market-to-book ratio of Missouri Gas Energy on February 13, 2009 is assumed to be equal to the average market-to-book ratio at February 13, 2009 of Southern Union Company.

(8) Missouri Gas Energy's common stock, if traded, would trade at a market-to-book ratio equal to the average market-to-book ratio at February 13, 2009 of Southern Union Company, 76.6%, and Missouri Gas Energy's market capitalization on February 13, 2009 would thisefore have been $298.596 million. ($298.596 = $389.885 * 76.6%).

Source of Information: 2007 Annual Forms 10K
yahoo.finance.com

Ibbotson® SBBI®
2008 Valuation Yearbook

Market Results for
Stocks, Bonds, Bills, and Inflation
1926–2007



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Chapter 7

Firm Size and Return

The Firm Size Phenomenon

One of the most remarkable discoveries of modern finance is that of a relationship between firm size and return. The relationship cuts across the entire size spectrum but is most evident among smaller companies, which have higher returns on average than larger ones. Many studies have looked at the effect of firm size on return.[1] In this chapter, the returns across the entire range of firm size are examined.

Construction of the Decile Portfolios

The portfolios used in this chapter are those created by the Center for Research in Security Prices (CRSP) at the University of Chicago's Graduate School of Business. CRSP has refined the methodology of creating size-based portfolios and has applied this methodology to the entire universe of NYSE/AMEX/NASDAQ-listed securities going back to 1926.

The New York Stock Exchange universe excludes closed-end mutual funds, preferred stocks, real estate investment trusts, foreign stocks, American Depository Receipts, unit investment trusts, and Americus Trusts. All companies on the NYSE are ranked by the combined market capitalization of their eligible equity securities. The companies are then split into 10 equally populated groups, or deciles. Eligible companies traded on the American Stock Exchange (AMEX) and the Nasdaq National Market (NASDAQ) are then assigned to the appropriate deciles according to their capitalization in relation to the NYSE breakpoints. The portfolios are rebalanced, using closing prices for the last trading day of March, June, September, and December. Securities added during the quarter are assigned to the appropriate portfolio when two consecutive month-end prices are available. If the final NYSE price of a security that becomes delisted is a month-end price, then that month's return is included in the quarterly return of the security's portfolio. When a month-end NYSE price is missing, the month-end value of the security is derived from merger terms, quotations on regional exchanges, and other sources. If a month-end value still is not determined, the last available daily price is used.

Base security returns are monthly holding period returns. All distributions are added to the month-end prices, and appropriate price adjustments are made to account for stock splits and dividends. The return on a portfolio for one month is calculated as the weighted average of the returns for its individual stocks. Annual portfolio returns are calculated by compounding the monthly portfolio returns.

Size of the Deciles

Table 7-1 reveals that the top three deciles of the NYSE/AMEX/NASDAQ account for most of the total market value of its stocks. Nearly two-thirds of the market value is represented by the first decile, which currently consists of 167 stocks, while the smallest decile accounts for just over one percent of the

1 Rolf W. Banz was the first to document this phenomenon. See Banz, Rolf W. "The Relationship Between Returns and Market Value of Common Stocks," *Journal of Financial Economics*, Vol. 9, 1981, pp. 3–18.

market value. The data in the second column of Table 7-1 are averages across all 82 years. Of course, the proportion of market value represented by the various deciles varies from year to year.

Columns three and four give recent figures on the number of companies and their market capitalization, presenting a snapshot of the structure of the deciles near the end of 2007.

Table 7-1‡
Size-Decile Portfolios of the NYSE/AMEX/NASDAQ Size and Composition
1926 through September 30, 2007

Decile	Historical Average Percentage of Total Capitalization	Recent Number of Companies	Recent Decile Market Capitalization (in thousands)	Recent Percentage of Total Capitalization
1-largest	63.22%	167	$10,357,817,750	62.34%
2	13.97%	174	2,327,351,920	14.01%
3	7.56%	192	1,111,672,200	6.69%
4	4.73%	184	709,696,610	4.27%
5	3.24%	203	541,399,790	3.26%
6	2.38%	251	411,039,680	2.47%
7	1.75%	275	379,465,160	2.28%
8	1.30%	380	291,182,590	1.75%
9	1.02%	641	284,538,240	1.71%
10-Smallest	0.83%	1775	201,705,150	1.21%
Mid-Cap 3-5	15.53%	579	2,362,768,280	14.22%
Low-Cap 6-8	5.43%	906	1,081,687,170	6.51%
Micro-Cap 9-10	1.85%	2,416	486,243,740	2.93%

Historical average percentage of total capitalization shows the average, over the last 82 years, of the decile market values as a percentage of the total NYSE/AMEX/NASDAQ calculated each month. Number of companies in deciles, recent market capitalization of deciles, and recent percentage of total capitalization are as of September 30, 2007.

Table 7-2 gives the current breakpoints that define the composition of the NYSE/AMEX/NASDAQ size deciles. The largest company and its market capitalization are presented for each decile. Table 7-3 shows the historical breakpoints for each of the three size groupings presented throughout this chapter. Mid-cap stocks are defined here as the aggregate of deciles 3–5. Based on the most recent data (Table 7-2), companies within this mid-cap range have market capitalizations at or below $9,206,713,000 but greater than $2,411,794,000. Low-cap stocks include deciles 6–8 and currently include all companies in the NYSE/AMEX/NASDAQ with market capitalizations at or below $2,411,794,000 but greater than $723,258,000. Micro-cap stocks include deciles 9–10 and include companies with market capitalizations at or below $723,258,000. The market capitalization of the smallest company included in the micro-capitalization group is currently $1,922,000.

‡ Source: ©2008 CRSP®, Center for Research in Security Prices. Graduate School of Business, The University of Chicago used with permission. All rights reserved. www.crsp.chicagogsb.edu

Table 7-2[1]
Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, Largest Company and Its Market Capitalization by Decile
September 30, 2007

Decile	Market Capitalization of Largest Company (in thousands)	Company Name
1-Largest	$472,518,672	Exxon Mobil Corp.
2	20,234,526	General Mills Inc
3	9,206,713	Reliant Energy Inc.
4	5,012,577	Manitowoc Co. Inc.
5	3,422,743	FMC Corp.
6	2,411,794	Webster Financial Corp.
7	1,633,320	Simpson Manufacturing Co. Inc.
8	1,128,765	Metal Management Inc
9	723,258	Citadel Broadcasting Corp.
10-Smallest	363,479	Emergency Medical Services Corp.

Presentation of the Decile Data

Summary statistics of annual returns of the 10 deciles over 1926–2007 are presented in Table 7-4. Note from this exhibit that both the average return and the total risk, or standard deviation of annual returns, tend to increase as one moves from the largest decile to the smallest. Furthermore, the serial correlations of returns are near zero for all but the smallest deciles. Serial correlations and their significance will be discussed in detail later in this chapter.

Graph 7-1 depicts the growth of one dollar invested in each of three NYSE/AMEX/NASDAQ groups broken down into mid-cap, low-cap, and micro-cap stocks. The index value of the entire NYSE/AMEX/NASDAQ is also included. All returns presented are value-weighted based on the market capitalizations of the deciles contained in each subgroup. The sheer magnitude of the size effect in some years is noteworthy. While the largest stocks actually declined 9 percent in 1977, the smallest stocks rose more than 20 percent. A more extreme case occurred in the depression-recovery year of 1933, when the difference between the first and tenth decile returns was far more substantial, with the largest stocks rising 46 percent, and the smallest stocks rising 218 percent. This divergence in the performance of small and large company stocks is a common occurrence.

Table 7-3
Size-Decile Portfolios of the NYSE/AMEX/NASDAQ
Largest and Smallest Company by Size Group

from 1926 to1965

	Capitalization of Largest Company (in thousands)			Capitalization of Smallest Company (in thousands)		
Date (Sept 30)	Mid-Cap 3-5	Low-Cap 6-8	Micro-Cap 9-10	Mid-Cap 3-5	Low-Cap 6-8	Micro-Cap 9-10
1926	$60,103	$13,795	$4,213	$13,800	$4,263	$43
1927	$64,820	$14,491	$4,415	$14,522	$4,450	$65
1928	$80,910	$18,761	$5,074	$18,788	$5,119	$135
1929	$103,054	$24,328	$5,862	$24,480	$5,873	$118
1930	$66,750	$12,918	$3,359	$13,050	$3,369	$30
1931	$42,607	$8,142	$1,927	$8,222	$1,944	$15
1932	$12,212	$2,208	$468	$2,223	$469	$19
1933	$40,298	$7,210	$1,830	$7,280	$1,875	$120
1934	$38,019	$6,638	$1,673	$6,669	$1,691	$69
1935	$37,631	$6,549	$1,350	$6,605	$1,383	$38
1936	$46,963	$11,505	$2,754	$11,526	$2,800	$98
1937	$51,750	$13,635	$3,539	$13,793	$3,563	$68
1938	$35,019	$8,372	$2,195	$8,400	$2,200	$60
1939	$35,409	$7,478	$1,819	$7,500	$1,854	$75
1940	$29,903	$7,990	$1,861	$8,007	$1,872	$51
1941	$30,362	$8,316	$2,086	$8,336	$2,087	$72
1942	$26,037	$6,868	$1,770	$6,870	$1,779	$82
1943	$42,721	$11,403	$3,847	$11,475	$3,903	$395
1944	$46,221	$13,066	$4,812	$13,068	$4,820	$309
1945	$55,125	$17,325	$6,413	$17,575	$6,428	$225
1946	$77,784	$24,192	$10,149	$24,199	$10,168	$829
1947	$57,830	$17,719	$6,373	$17,735	$6,380	$508
1948	$67,238	$19,632	$7,329	$19,651	$7,348	$683
1949	$56,082	$14,549	$5,037	$14,577	$5,108	$379
1950	$66,143	$18,675	$6,225	$18,700	$6,243	$303
1951	$82,517	$22,750	$7,598	$22,860	$7,600	$668
1952	$95,636	$25,405	$8,428	$25,452	$8,480	$480
1953	$98,218	$25,340	$8,156	$25,374	$8,168	$459
1954	$125,834	$29,707	$8,488	$29,791	$8,502	$463
1955	$170,829	$41,445	$12,366	$41,681	$12,444	$553
1956	$183,792	$46,805	$13,524	$46,886	$13,623	$1,122
1957	$194,300	$47,658	$13,844	$48,509	$13,848	$925
1958	$195,536	$46,774	$13,789	$46,871	$13,816	$550
1959	$256,283	$64,110	$19,548	$64,221	$19,701	$1,804
1960	$252,292	$61,485	$19,293	$61,529	$19,344	$831
1961	$296,261	$77,983	$23,562	$77,996	$23,613	$2,455
1962	$250,786	$58,785	$18,952	$58,866	$18,968	$1,018
1963	$308,903	$71,846	$23,927	$71,971	$24,056	$296
1964	$349,675	$79,508	$25,595	$79,937	$25,607	$223
1965	$365,675	$84,600	$28,483	$85,065	$28,543	$250

Table 7-3 (continued)
Size-Decile Portfolios of the NYSE/AMEX/NASDAQ
Largest and Smallest Company by Size Group

from 1966 to 2007

	Capitalization of Largest Company (in thousands)			Capitalization of Smallest Company (in thousands)		
Date (Sept 30)	Mid-Cap 3-5	Low-Cap 6-8	Micro-Cap 9-10	Mid-Cap 3-5	Low-Cap 6-8	Micro-Cap 9-10
1966	$403,137	$99,960	$34,884	$100,107	$34,966	$381
1967	$459,438	$118,988	$42,188	$119,635	$42,237	$381
1968	$531,306	$150,893	$60,543	$151,260	$60,719	$592
1969	$518,485	$146,792	$54,353	$147,311	$54,503	$2,119
1970	$382,884	$94,754	$29,916	$94,845	$29,932	$822
1971	$551,690	$147,426	$45,570	$147,810	$45,571	$865
1972	$557,181	$143,835	$46,728	$144,263	$46,757	$1,031
1973	$431,354	$96,699	$29,352	$96,710	$29,430	$561
1974	$356,876	$79,878	$23,355	$80,280	$23,400	$444
1975	$477,054	$102,313	$30,353	$103,283	$30,394	$540
1976	$566,296	$121,717	$34,864	$121,992	$34,901	$564
1977	$584,577	$139,196	$40,700	$139,620	$40,765	$513
1978	$580,881	$164,093	$47,927	$164,455	$48,038	$830
1979	$665,019	$177,378	$51,197	$177,769	$51,274	$948
1980	$762,195	$199,312	$50,496	$199,315	$50,544	$549
1981	$962,397	$264,690	$72,104	$264,783	$72,450	$1,446
1982	$770,517	$210,301	$55,336	$210,630	$55,423	$1,060
1983	$1,209,911	$353,889	$104,382	$356,238	$104,588	$2,025
1984	$1,075,436	$315,965	$91,004	$316,103	$91,195	$2,093
1985	$1,440,436	$370,224	$94,875	$370,729	$94,887	$760
1986	$1,857,621	$449,015	$110,617	$449,462	$110,953	$706
1987	$2,059,143	$468,948	$113,419	$470,662	$113,430	$1,277
1988	$1,957,926	$421,340	$94,449	$421,675	$94,573	$696
1989	$2,145,947	$480,975	$100,285	$483,623	$100,384	$96
1990	$2,171,217	$474,065	$93,750	$474,477	$93,790	$132
1991	$2,129,863	$457,958	$87,586	$458,853	$87,733	$278
1992	$2,428,671	$500,327	$103,352	$500,346	$103,500	$510
1993	$2,705,192	$603,588	$137,105	$607,449	$137,137	$602
1994	$2,470,244	$596,059	$148,104	$597,975	$148,216	$598
1995	$2,789,938	$647,210	$155,386	$647,253	$155,532	$89
1996	$3,142,657	$751,316	$193,001	$751,680	$193,016	$1,043
1997	$3,484,440	$813,923	$228,900	$814,355	$229,058	$585
1998	$4,216,707	$925,688	$252,553	$926,215	$253,031	$1,671
1999	$4,251,741	$875,309	$220,397	$875,582	$220,456	$1,502
2000	$4,143,902	$840,000	$192,083	$840,730	$192,439	$1,393
2001	$5,156,315	$1,108,224	$265,734	$1,108,969	$265,736	$443
2002	$4,930,326	$1,116,525	$308,980	$1,124,331	$309,245	$501
2003	$4,744,580	$1,163,369	$329,060	$1,163,423	$329,529	$332
2004	$5,241,953	$1,607,854	$505,437	$1,607,931	$506,410	$1,393
2005	$7,187,244	$1,728,888	$586,393	$1,729,364	$587,243	$1,079
2006	$7,777,183	$1,946,588	$626,955	$1,947,240	$627,017	$2,247
2007	$9,206,713	$2,411,794	$723,258	$2,413,583	$725,267	$1,922

Table 7-4‡
Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, Summary Statistics of Annual Returns 1926–2007

Decile	Geometric Mean	Arithmetic Mean	Standard Deviation	Serial Correlation
1-Largest	9.6	11 3	18.91	0.08
2	10 9	13 2	21.62	0.04
3	11 3	13 7	23.31	–0 03
4	11.1	14 1	25.68	–0.01
5	11.7	14.8	26.49	–0 02
6	11.7	15.1	27.10	0 03
7	11.6	15.5	29.47	0.01
8	11.8	16.6	34.18	0.05
9	11 9	17.3	36.45	0.04
10-Smallest	13 6	21.0	44.58	0 16
Mid-Cap, 3–5	11.3	14.0	24.42	–0.02
Low-Cap, 6–8	11 7	15.5	29.03	0.03
Micro-Cap, 9–10	12.5	18 5	38.84	0.08
NYSE/AMEX/NASDAQ Total Value-Weighted Index	10.1	12 0	19 94	0.03

Aspects of the Firm Size Effect

The firm size phenomenon is remarkable in several ways. First, the greater risk of small stocks does not, in the context of the capital asset pricing model (CAPM), fully account for their higher returns over the long term. In the CAPM only systematic, or beta risk, is rewarded; small company stocks have had returns in excess of those implied by their betas.

Second, the calendar annual return differences between small and large companies are serially correlated. This suggests that past annual returns may be of some value in predicting future annual returns. Such serial correlation, or autocorrelation, is practically unknown in the market for large stocks and in most other equity markets but is evident in the size premia.

Third, the firm size effect is seasonal. For example, small company stocks outperformed large company stocks in the month of January in a large majority of the years. Such predictability is surprising and suspicious in light of modern capital market theory. These three aspects of the firm size effect—long-term returns in excess of systematic risk, serial correlation, and seasonality—will be analyzed thoroughly in the following sections.

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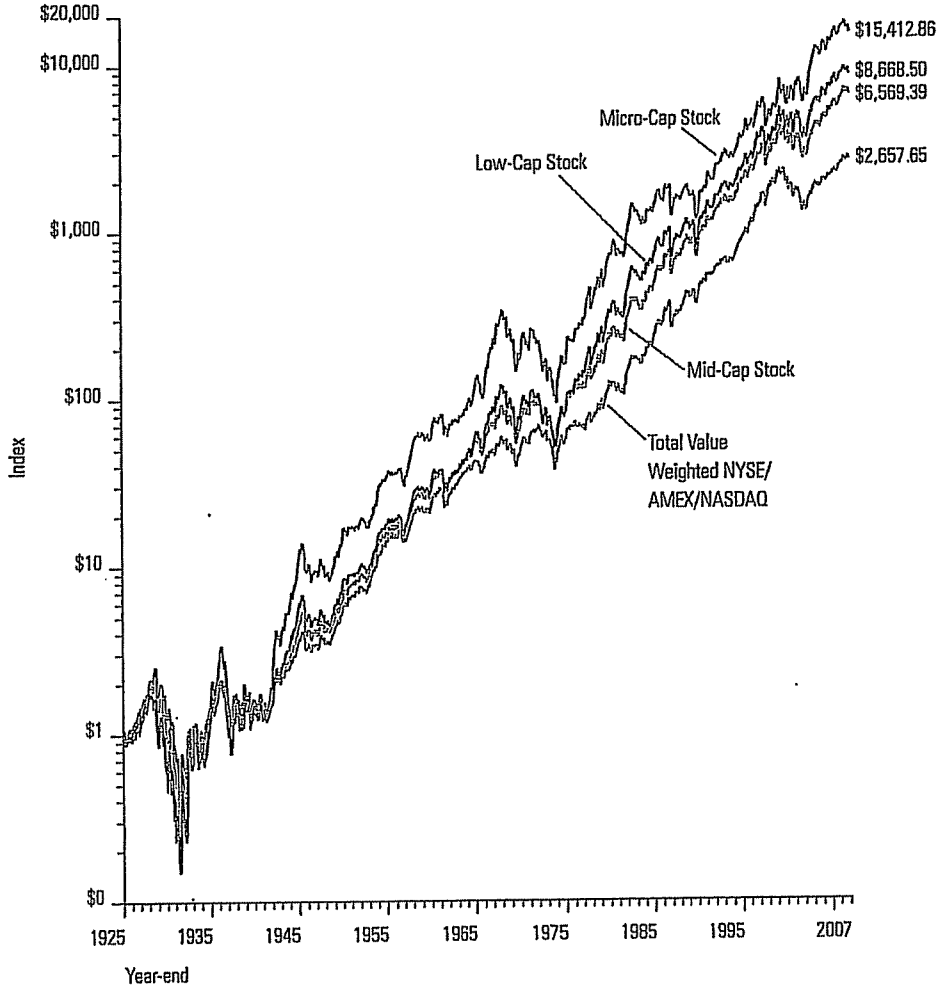
Graph 7-1[1]
Size-Decile Portfolios of the NYSE/AMEX/NASDAQ: Wealth Indices of Investments in Mid-, Low-, Micro- and Total Capitalization Stocks
Year-end 1925 = $1.00

1925–2007



Long-Term Returns in Excess of Systematic Risk

The capital asset pricing model (CAPM) does not fully account for the higher returns of small company stocks. Table 7-5 shows the returns in excess of systematic risk over the past 82 years for each decile of the NYSE/AMEX/NASDAQ. Recall that the CAPM is expressed as follows:

$$k_s = r_f + (\beta_s \times ERP)$$

Table 7-5 uses the CAPM to estimate the return in excess of the riskless rate and compares this estimate to historical performance. According to the CAPM, the expected return on a security should consist of the riskless rate plus an additional return to compensate for the systematic risk of the security. The return in excess of the riskless rate is estimated in the context of the CAPM by multiplying the equity risk premium by β (beta). The equity risk premium is the return that compensates investors for taking on risk equal to the risk of the market as a whole (systematic risk).[2] Beta measures the extent to which a security or portfolio is exposed to systematic risk.[3] The beta of each decile indicates the degree to which the decile's return moves with that of the overall market.

A beta greater than one indicates that the security or portfolio has greater systematic risk than the market; according to the CAPM equation, investors are compensated for taking on this additional risk. Yet, Table 7-5 illustrates that the smaller deciles have had returns that are not fully explained by their higher betas. This return in excess of that predicted by CAPM increases as one moves from the largest companies in decile 1 to the smallest in decile 10. The excess return is especially pronounced for micro-cap stocks (deciles 9–10). This size-related phenomenon has prompted a revision to the CAPM, which includes a size premium. Chapter 4 presents this modified CAPM theory and its application in more detail.

This phenomenon can also be viewed graphically, as depicted in the Graph 7-2. The security market line is based on the pure CAPM without adjustment for the size premium. Based on the risk (or beta) of a security, the expected return lies on the security market line. However, the actual historic returns for the smaller deciles of the NYSE/AMEX/NASDAQ lie above the line, indicating that these deciles have had returns in excess of that which is appropriate for their systematic risk.

2 The equity risk premium is estimated by the 82-year arithmetic mean return on large company stocks, 12.26 percent, less the 82-year arithmetic mean income-return component of 20-year government bonds as the historical riskless rate, in this case 5.21 percent. (It is appropriate, however, to match the maturity, or duration, of the riskless asset with the investment horizon.) See Chapter 5 for more detail on equity risk premium estimation.

3 Historical betas were calculated using a simple regression of the monthly portfolio (decile) total returns in excess of the 30-day U.S. Treasury bill total returns versus the S&P 500 total returns in excess of the 30-day U.S. Treasury bill, January 1926–December 2007. See Chapter 6 for more detail on beta estimation.

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Table 7-5*
Long-Term Returns in Excess of CAPM Estimation for Decile Portfolios of the NYSE/AMEX/NASDAQ
1926–2007

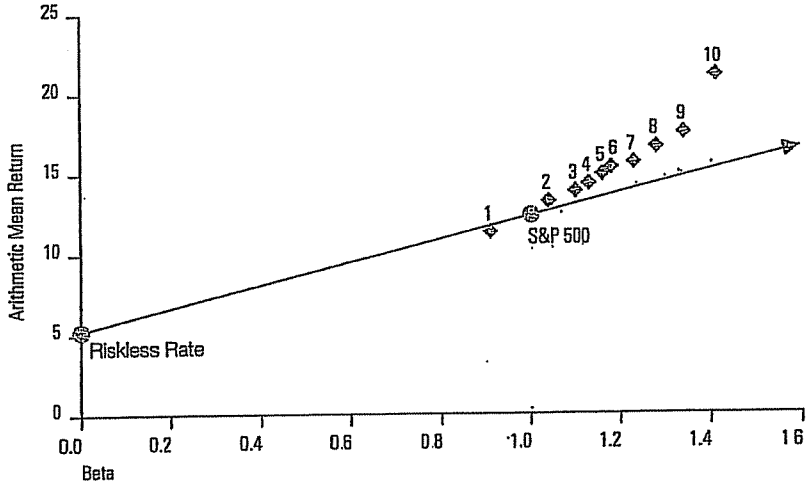
Decile	Beta*	Arithmetic Mean Return	Realized Return in Excess of Riskless Rate**	Estimated Return in Excess of Riskless Rate†	Size Premium (Return in Excess of CAPM)
1-Largest	0 91	11.31%	6 10%	6.45%	−0.34%
2	1 03	13.16%	7 95%	7 27%	0 68%
3	1.10	13 72%	8.51%	7.75%	0.76%
4	1.12	14.07%	8.86%	7 93%	0 93%
5	1 16	14.85%	9 64%	8.17%	1.47%
6	1 18	15 14%	9.93%	8 33%	1 60%
7	1 24	15 46%	10.26%	8.76%	1 50%
8	1 30	16 58%	11.38%	9.18%	2 20%
9	1 35	17.28%	12.07%	9.51%	2.56%
10-Smallest	1.41	20.98%	15 77%	9.95%	5.82%
Mid-Cap, 3–5	1 12	14 01%	8.81%	7.88%	0.92%
Low-Cap, 6–8	1.22	15.49%	10.29%	8.64%	1.65%
Micro-Cap, 9–10	1 36	18.46%	13.25%	9 59%	3.65%

*Betas are estimated from monthly portfolio total returns in excess of the 30-day U S Treasury bill total return versus the S&P 500 total returns in excess of the 30-day U.S. Treasury bill, January 1926–December 2007.

**Historical riskless rate is measured by the 82-year arithmetic mean income return component of 20-year government bonds (5.21 percent)

†Calculated in the context of the CAPM by multiplying the equity risk premium by beta. The equity risk premium is estimated by the arithmetic mean total return of the S&P 500 (12 26 percent) minus the arithmetic mean income return component of 20-year government bonds (5 21 percent) from 1926–2007.

Graph 7-2‡
Security Market Line versus Size-Decile Portfolios of the NYSE/AMEX/NASDAQ
1926–2007



Further Analysis of the 10th Decile

The size premia presented thus far do a great deal to explain the return due solely to size in publicly traded companies. However, by splitting the 10th decile into two size groupings we can get a closer look at the smallest companies. This magnification of the smallest companies will demonstrate whether the company size to size premia relationship continues to hold true.

As previously discussed, the method for determining the size groupings for size premia analysis was to take the stocks traded on the NYSE and break them up into 10 deciles, after which stocks traded on the AMEX and NASDAQ were allocated into the same size groupings. This same methodology was used to split the 10th decile into two parts: 10a and 10b, with 10b being the smaller of the two. This is equivalent to breaking the stocks down into 20 size groupings, with portfolios 19 and 20 representing 10a and 10b.

Table 7-7 shows that the pattern continues; as companies get smaller their size premium increases. There is a noticeable increase in size premium from 10a to 10b, which can also be demonstrated visually in Graph 7-3. This can be useful in valuing companies that are extremely small. Table 7-6 presents the size, composition, and breakpoints of deciles 10a and 10b. First, the recent number of companies and total decile market capitalization are presented. Then the largest company and its market capitalization are presented.

Breaking the smallest decile down lowers the significance of the results compared to results for the 10th decile taken as a whole, however. The same holds true for comparing the 10th decile with the Micro-Cap aggregation of the 9th and 10th deciles. The more stocks included in a sample the more significance can be placed on the results. While this is not as much of a factor with the recent years of data, these size premia are constructed with data back to 1926. By breaking the 10th decile down into smaller components we have cut the number of stocks included in each grouping. The change over time of the number of stocks included in the 10th decile for the NYSE/AMEX/NASDAQ is presented in Table 7-8. With fewer stocks included in the analysis early on, there is a strong possibility that just a few stocks can dominate the returns for those early years.

While the number of companies included in the 10th decile for the early years of our analysis is low, it is not too low to still draw meaningful results even when broken down into subdivisions 10a and 10b. All things considered, size premia developed for deciles 10a and 10b are significant and can be used in cost of capital analysis. These size premia should greatly enhance the development of cost of capital analysis for very small companies.

Table 7-6‡
Size-Decile Portfolios 10a and 10b of the NYSE/AMEX/NASDAQ, Largest Company and Its Market Capitalization
September 30, 2007

Decile	Recent Number of Companies	Recent Decile Market Capitalization (in thousands)	Market Capitalization of Largest Company (in thousands)	Company Name
10a	386	108,458,780	363,479	Emergency Medical Services Corp.
10b	1,405	143,681,297	211,590	Miller Industries Inc., Tenn.

Note: These numbers may not aggregate to equal decile 10 figures

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Table 7-7[1]
Long-Term Returns in Excess of CAPM Estimation for Decile Portfolios of the NYSE/AMEX/NASDAQ, with 10th Decile Split
1926–2007

	Beta*	Arithmetic Mean Return	Realized Return in Excess of Riskless Rate**	Estimated Return in Excess of Riskless Rate†	Size Premium (Return in Excess of CAPM)
1-Largest	0.91	11.31%	6.10%	6.45%	–0.34%
2	1.03	13.16%	7.95%	7.27%	0.68%
3	1.10	13.72%	8.51%	7.75%	0.76%
4	1.12	14.07%	8.86%	7.93%	0.93%
5	1.16	14.85%	9.64%	8.17%	1.47%
6	1.18	15.14%	9.93%	8.33%	1.60%
7	1.24	15.46%	10.26%	8.76%	1.50%
8	1.30	16.58%	11.38%	9.18%	2.20%
9	1.35	17.28%	12.07%	9.51%	2.56%
10a	1.42	19.22%	14.01%	10.02%	3.99%
10b-Smallest	1.39	24.71%	19.50%	9.77%	9.73%
Mid-Cap, 3–5	1.12	14.01%	8.81%	7.88%	0.92%
Low-Cap, 6–8	1.22	15.49%	10.29%	8.64%	1.65%
Micro-Cap, 9–10	1.36	18.46%	13.25%	9.59%	3.65%

*Betas are estimated from monthly portfolio total returns in excess of the 30-day U.S. Treasury bill total return versus the S&P 500 total returns in excess of the 30-day U.S. Treasury bill, January 1926–December 2007.

**Historical riskless rate is measured by the 82-year arithmetic mean income return component of 20-year government bonds (5.21 percent)

†Calculated in the context of the CAPM by multiplying the equity risk premium by beta. The equity risk premium is estimated by the arithmetic mean total return of the S&P 500 (12.26 percent) minus the arithmetic mean income return component of 20-year government bonds (5.21 percent) from 1926–2007.

Graph 7-3[1]
Security Market Line versus Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, with 10th Decile Split
1926-2007

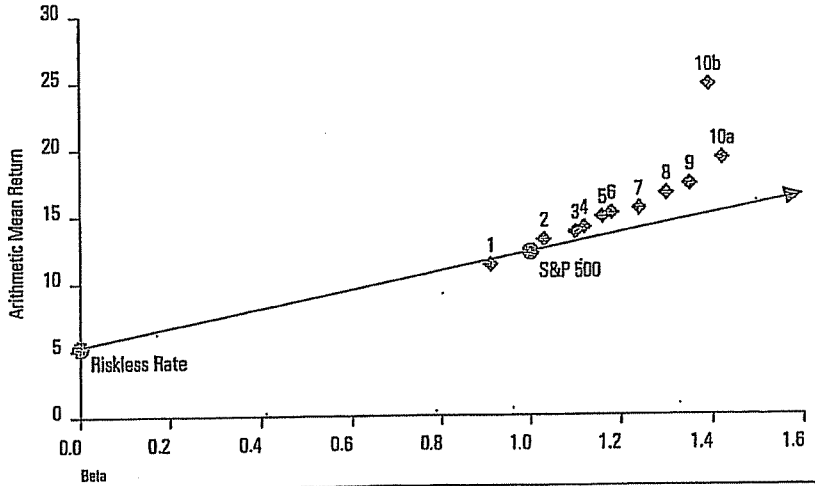

Table 7-8‡
Historical Number of Companies for NYSE/AMEX/NASDAQ Decile 10

Sept.	Number of Companies
1926	52*
1930	72
1940	78
1950	100
1960	109
1970	865
1980	685
1990	1,814
2000	1,927
2005	1,746
2006	1,744
2007	1,775

*The fewest number of companies was 49 in March, 1926

Alternative Methods of Calculating the Size Premia

The size premia estimation method presented above makes several assumptions with respect to the market benchmark and the measurement of beta. The impact of these assumptions can best be examined by looking at some alternatives. In this section we will examine the impact on the size premia of using a different market benchmark for estimating the equity risk premia and beta. We will also examine the effect on the size premia study of using sum beta or an annual beta.[4]

Changing the Market Benchmark

In the original size premia study, the S&P 500 is used as the market benchmark in the calculation of the realized historical equity risk premium and of each size group's beta. The NYSE total value-weighted index is a common alternative market benchmark used to calculate beta. Table 7-9 uses this market benchmark in the calculation of beta. In order to isolate the size effect, we require an equity risk premium based on a large company stock benchmark. The NYSE deciles 1–2 large company index offers a mutually exclusive set of portfolios for the analysis of the smaller company groups: mid-cap deciles 3–5, low-cap deciles 6–8, and micro-cap deciles 9–10. The size premia analyses using these benchmarks are summarized in Table 7-9 and depicted graphically in Graph 7-4.

For the entire period analyzed, 1926–2007, the betas obtained using the NYSE total value-weighted index are higher than those obtained using the S&P 500. Since smaller companies had higher betas using the NYSE benchmark, one would expect the size premia to shrink. However, as was illustrated in Chapter 5, the equity risk premium calculated using the NYSE deciles 1–2 benchmark results in a value of 6.35, as opposed to 7.05 when using the S&P 500. The effect of the higher betas and lower equity risk premium cancel each other out, and the resulting size premia in Table 7-9 are slightly higher than those resulting from the original study.

4 Sum beta is the method of beta estimation described in Chapter 6 that was developed to better account for the lagged reaction of small stocks to market movements. The sum beta methodology was developed for the same reason that the size premia were developed; small company betas were too small to account for all of their excess returns.

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Utilities

The utilities rating methodology encompasses two basic components: business risk analysis and financial analysis. Evaluation of industry characteristics, the utility's position within that industry, its regulation, and its management provides the context for assessing a firm's financial condition.

Historical analysis is a tool for identifying strengths and weaknesses, and provides a starting point for evaluating financial condition. Business position assessment is the qualitative measure of a utility's fundamental creditworthiness. It focuses on the forces that will shape the utilities' future.

Utilities credit analysis factors

Business risk	Financial risk
• Markets and service area economy	• Earnings protection
• Competitive position	• Capital structure
• Operations	• Cash flow adequacy
• Regulation	• Financial flexibility/capital attraction
• Management	
• Fuel, power, and water supply	
• Asset concentration	

The credit analysis of utilities is quickly evolving, as utilities are treated less as regulated monopolies and more as entities faced with a host of challengers in a competitive environment. Marketplace dynamics are supplanting the power of regulation, making it critically important to reduce costs and/or market new services in order to thwart competitors' inroads.

Markets and service area economy

Assessing service territory begins with the economic and demographic evaluation of the area in which the utility has its franchise. Strength of long-term demand for the product is examined from a macroeconomic perspective. This enables Standard & Poor's to evaluate the affordability of rates and the staying power of demand.

Standard & Poor's tries to discern any secular consumption trends and, more importantly, the reasons for them. Specific items examined include the size and growth rate of the market, strength of the franchise, historical and projected sales growth, income levels and trends in population, employment, and per capita income. A utility with a healthy economy and customer base—as illustrated by diverse employment opportunities, average or above-average wealth and income statistics, and low unemployment—will have a greater capacity to support its operations.

For electric and gas utilities, distribution by customer class is scrutinized to assess the depth and diversity of the utility's customer mix. For example, heavy industrial concentration is viewed cautiously, since a utility may have significant exposure to cyclical volatility. Alternatively, a large residential component yields a stable and more predictable revenue stream. The largest utility customers are identified to determine their importance to the bottom line and assess the risk of their loss and potential adverse effect on the utility's financial position. Credit concerns arise when individual customers represent more than 5% of revenues. The company or industry may play a significant role in the overall economic base of the service area. Moreover, large customers may turn to cogeneration or alternative power supplies to meet their energy needs, potentially leading to reduced cash flow for the utility (even in cases where a large customer pays discounted rates and is not a profitable account for the utility). Customer concentration is less significant for water and telecommunication utilities.

Competitive position

As competitive pressures have intensified in the utilities industry, Standard & Poor's analysis has deepened to include a more thorough review of competitive position.

Electric utility competition

For electric utilities, competitive factors examined include: percentage of firm wholesale revenues that are most vulnerable to competition; industrial load concentration; exposure of key customers to alternative suppliers; commercial concentrations; rates for various customer classes; rate design and flexibility; production costs, both marginal and fixed; the regional capacity situation; and transmission constraints. A regional focus is evident, but high costs and rates relative to national averages are also of significant concern because of the potential for electricity substitutes over time.

Mounting competition in the electric utility industry derives from excess generating capacity, lower barriers to entering the electric generating business, and marginal costs that are below embedded costs. Standard & Poor's has already witnessed declining prices in wholesale markets, as *de facto* retail competition is already being seen in several parts of the country. Standard & Poor's believes that over the coming years more and more customers will want and demand lower prices. Initial concerns focus on the largest industrial loads, but other customer classes will be increasingly vulnerable. Competition will not necessar-

ily be driven by legislation. Other pressures will arise from global competition and improving technologies, whether it be the declining cost of incremental generation or advances in transmission capacity or substitute energy sources like the fuel cell. It is impossible to say precisely when wide-open retail competition will occur; this will be evolutionary. However, significantly greater competition in retail markets is inevitable.

Gas utility competition

Similarly, gas utilities are analyzed with regard to their competitive standing in the three major areas of demand: residential, commercial, and industrial. Although regulated as holders of monopoly power, natural gas utilities have for some time been actively competing for energy market share with fuel oil, electricity, coal, solar, wood, etc. The long-term staying power of market demand for natural gas cannot be taken for granted. In fact, as the electric utility industry restructures and reduces costs, electric power will become more cost competitive and threaten certain gas markets. In addition, independent gas marketers have made greater inroads behind the city gate and are competing for large gas users. Moreover, the recent trend by state regulators to unbundle utility services is creating opportunities for outsiders to market niche products. Distributors still have the upper hand, but those who do not reduce and control costs, and thus rates, could find competition even more difficult.

Natural gas pipelines are judged to carry a somewhat higher business risk than distribution companies because they face competition in every one of their markets. To the extent a pipeline serves utilities versus industrial end users, its stability is greater. Over the next five years, pipeline competition will heat up since many service contracts with customers are expiring. Most distributor or end-use customers are looking to reduce pipeline costs and are working to improve their load factor to do so. Thus, pipelines will likely find it difficult to recontract all capacity in coming years. Being the pipeline of choice is a function of attractive transportation rates, diversity and quality of services provided, and capacity available in each particular market. In all cases though, periodic discounting of rates to retain customers will occur and put pressure on profitability.

Water utility competition

As the last true utility monopoly, water utilities face very little competition and there is currently no challenge to the continuation of franchise areas. The only exceptions have been cases where investor-owned water companies have been subject to condemnation and municipalization because of poor service or political motivations. In that regard, Standard & Poor's pays close attention to costs and rates in relation to neighboring utilities and national averages. (In contrast, the privatization of public water facilities has begun, albeit at a slower pace than anticipated. This is occurring mostly in the form of operating contracts and public/private partnerships, and not in asset transfers. This trend should continue as cities look for ways to balance their tight budgets.) Also, water utilities are not fully immune to the forces of competition; in a few instances wholesale customers can access more than one supplier.

Telephone competition

The Telecommunications Act of 1996 accelerates the continuing challenge to the local exchange companies' (LECs) century-old monopoly in the local loop. Competitive access providers (CAPs), both facilities-based and resellers, are aggressively pursuing customers, generally targeting metropolitan areas, and promising lower rates and better service.

Most long-distance calls are still originated and terminated on the local telephone company network. To complete such a call, the long-distance provider (including AT&T, MCI, Sprint and a host of smaller interexchange carriers or "IXCs") must pay the local telephone company a steep "access" fee to compensate the local phone company for the use of its local network. CAPs, in contrast, build or lease facilities that directly connect customers to their long-distance carrier, bypassing the local telephone company and avoiding access fees, and thereby can offer lower long-distance rates. But the LECs are not standing still; they are combating the loss of business to CAPs by lowering access fees, thereby reducing the economic incentive for a high usage long-distance customer to use a CAP. LECs are attempting to make up for the loss of revenues from lower access fees by increasing basic local service rates (or at least not lowering them), since basic service is far less subject to competition. LECs are improving operating efficiency and marketing high margin, value-added new services. Additionally, in the wake of the Telecommunications Act, LECs will capture at least some of the inter-LATA long-distance market. As a result of these initiatives, LECs continue to rebuild themselves—from the traditional utility monopoly to leaner, more marketing oriented organizations.

While LECs, and indeed all segments of the telecommunications sector, face increasing competition, there are favorable industry factors that tend to offset heightened business risk and auger for overall ratings stability for most LECs. Importantly, telecommunications is a declining-cost business. With increased deployment of fiber optics, the cost of transport has fallen dramatically and digital switching hardware and software have yielded more capable, trouble-free and cost-efficient networks. As a result, the cost of network maintenance has dropped sharply, as illustrated by the ratio of employees per 10,000 access lines, an oft-cited measurement of efficiency. Ratios as low as 25 employees per 10,000 lines are being seen, down from the typical 40 or more employees per 10,000 ratio of only a few years ago.

In addition, networks are far more capable. They are increasingly digitally switched and able to accommodate high-speed communications. The infrastructure needed to accommodate switched broadband services will be built into telephone networks over the next few years. These advanced networks will enable telephone companies to look to a greater variety of high-margin, value-added serv-

ices. In addition to those current services such as call waiting or caller ID, the delivery of hundreds of broadcast and interactive video channels will be possible. While these services offer the potential of new revenue streams, they will simultaneously present a formidable challenge. LECs will be entering the new (to them) arena of multimedia entertainment and will have to develop expertise in marketing and entertainment programming acumen; such skills stand in sharp contrast to LECs' traditional strengths in engineering and customer service.

Operations

Standard & Poor's focuses on the nature of operations from the perspective of cost, reliability, and quality of service. Here, emphasis is placed on those areas that require management attention in terms of time or money and which, if unresolved, may lead to political, regulatory, or competitive problems.

Operations of electric utilities

For electrics, the status of utility plant investment is reviewed with regard to generating plant availability and utilization, and also for compliance with existing and contemplated environmental and other regulatory standards. The record of plant outages, equivalent availability, load factors, heat rates, and capacity factors are examined. Also important is efficiency, as defined by total megawatt hour per employee and customers per employee. Transmission interconnections are evaluated in terms of the number of utilities to which the utility in question has access, the cost structures and available generating capacity of these other utilities, and the price paid for wholesale power.

Because of mounting competition and the substantial escalation in decommissioning estimates, significant weight is given to the operation of nuclear facilities. Nuclear plants are becoming more vulnerable to high production costs that make their rates uneconomic. Significant asset concentration may expose the utility to poor performance, unscheduled outages or premature shutdowns, and large deferrals or regulatory assets that may need to be written off for the utility to remain competitive. Also, nuclear facilities tend to represent significant portions of their operators' generating capability and assets. The loss of a productive nuclear unit from both power supply and rate base can interrupt the revenue stream and create substantial additional costs for repairs and improvements and replacement power. The ability to keep these stations running smoothly and economically directly influences the ability to meet electric demand, the stability of revenues and costs, and, by extension, the ability to maintain adequate creditworthiness. Thus, economic operation, safe operation, and long-term operation are examined in depth. Specifically, emphasis is placed on operation and maintenance costs, busbar costs, fuel costs, refueling outages, forced outages, plant statistics, NRC evaluations, the potential need for repairs, operating licenses, decommissioning estimates and amounts held in external trusts, spent fuel storage capacity, and management's nuclear experience. In essence, favorable nuclear operations offer significant opportunities but, if a nuclear unit runs poorly or not at all, the attendant risks can be great.

Operations of gas utilities

For gas pipeline and distribution companies, the degree of plant utilization, the physical condition of the mains and lines, adequacy of storage to meet seasonal needs, "lost and unaccounted for" gas levels, and per-unit nongas operating and construction costs are important factors. Efficiency statistics such as load factor, operating costs per customer, and operating income per employee are also evaluated in comparison to other utilities and the industry as a whole.

Operations of water utilities

As a group, water utilities are continually upgrading their physical plant to satisfy regulations and to develop additional supply. Over the next decade, water systems will increasingly face the task of maintaining compliance, as drinking water regulations change and infrastructure ages. Given that the Safe Drinking Water Act was authorized in 1974, the first generation of treatment plants built to conform with these rules are almost 20 years old. Additionally, because the focus during this period was on satisfying environmental standards, deferred maintenance of distribution systems has been common, especially in older urban areas. The increasing cost of supplying treated water argues against the high level of unaccounted for water witnessed in the industry. Consequently, Standard & Poor's anticipates capital plans for rebuilding distribution lines and major renewal and replacement efforts aimed at treatment plants.

Operations of telephone companies

For telephone companies, cost-of-service analysis focuses on plant capability and measures of efficiency and quality of service. Plant capability is ascertained by looking at such parameters as percentage of digitally switched lines; fiber optic deployment, in particular in those portions of the plant key to network survival; and the degree of broadband capacity fiber and coaxial deployment and broadband switching capacity. Efficiency measures include operating margins, the ratio of employees per 10,000 access lines, and the extent of network and operations consolidation. Quality of service encompasses examination of quantitative measures, such as trouble reports and repeat service calls, as well as an assessment of qualitative factors, that may include service quality goals mandated by regulators.

Regulation

Regulatory rate-setting actions are reviewed on a case-by-case basis with regard to the potential effect on creditworthiness. Regulators' authorizing high rates of return is of little value unless the returns are earnable. Furthermore, allowing high returns based on noncash items does not benefit bondholders. Also, to be viewed positively, regulatory treatment should allow consistent performance from

period to period, given the importance of financial stability as a rating consideration.

The utility group meets frequently with commission and staff members, both at Standard & Poor's offices and at commission headquarters, demonstrating the importance Standard & Poor's places on the regulatory arena for credit quality evaluation. Input from these meetings and from review of rate orders and their impact weigh heavily in Standard & Poor's analysis.

Standard & Poor's does not "rate" regulatory commissions. State commissions typically regulate a number of diverse industries, and regulatory approaches to different types of companies often differ within a single regulatory jurisdiction. This makes it all but impossible to develop inclusive "ratings" for regulators.

Standard & Poor's evaluation of regulation also encompasses the administrative, judicial, and legislative processes involved in state and federal regulation. These can affect rate-setting activities and other aspects of the business, such as competitive entry, environmental and safety rules, facility siting, and securities sales.

As the utility industry faces an increasingly deregulated environment, alternatives to traditional rate-making are becoming more critical to the ability of utilities to effectively compete, maintain earnings power, and sustain creditor protection. Thus, Standard & Poor's focuses on whether regulators, both state and federal, will help or hinder utilities as they are exposed to greater competition. There is much that regulators can do, from allocating costs to more captive customers to allowing pricing flexibility—and sometimes just stepping out of the way.

Under traditional rate-making, rates and earnings are tied to the amount of invested capital and the cost of capital. This can sometimes reward companies more for justifying costs than for containing them. Moreover, most current regulatory policies do not permit utilities to be flexible when responding to competitive pressures of a deregulated market. Lack of flexible tariffs for electric utilities may lure large customers to wheel cheaper power from other sources.

In general, a regulatory jurisdiction is viewed favorably if it permits earning a return based on the ability to sustain rates at competitive levels. In addition to performance-based rewards or penalties, flexible plans could include market-based rates, price caps, index-based prices, and rates premised on the value of customer service. Such rates more closely mirror the competitive environment that utilities are confronting.

Electric industry regulation

The ability to enter into long-term arrangements at negotiated rates without having to seek regulatory approval for each contract is also important in the electric industry. (While contracting at reduced rates constrains financial performance, it lessens the potential adverse impact in the event of retail wheeling. Since revenue losses associated with this strategy are not likely to be recovered from ratepayers, utilities must control costs well enough to remain competitive if they are to sustain current levels of bondholder protection.)

Natural gas industry regulation

In the gas industry, too, several state commission policies weigh heavily in the evaluation of regulatory support. Examples include stabilization mechanisms to adjust revenues for changes in weather or the economy, rate and service unbundling decisions, revenue and cost allocation between sales and transportation customers, flexible industrial rates, and the general supportiveness of construction costs and gas purchases.

Water industry regulation

In all water utility activities, federal and state environmental regulations continue to play a critical role. The legislative timetable to effect the 1986 amendments to the Safe Drinking Water Act of 1974 was quite aggressive. But environmental standards-setting has actually slowed over the past couple of years due largely to increasing sentiment that the stringent, costly standards have not been justified on the basis of public health. A moratorium on the promulgation of significant new environmental rules is anticipated.

Telecommunications industry regulation

Despite the advances in telecommunications deregulation, analysis of regulation of telephone operators will continue to be a key rating determinant for the foreseeable future. The method of regulation may be either classic rate-based rate of return or some form of price cap mechanism. The most important factor is to assess whether the regulatory framework—no matter which type—provides sufficient financial incentive to encourage the rated company to maintain its quality of service and to upgrade its plant to accommodate new services while facing increasing competition from wireless operators and cable television companies.

Where regulators do still set tariffs based on an authorized return, Standard & Poor's strives to explore with regulators their view of the rate-of-return components that can materially impact reported versus regulatory earnings. Specifically these include the allowable base upon which the authorized return can be earned, allowable expenses, and the authorized return. Since regulatory oversight runs the gamut from strict, adversarial relationships with the regulated operating companies to highly supportive postures, Standard & Poor's probes beyond the apparent regulatory environment to ascertain the actual impact of regulation on the rated company.

Management

Evaluating the management of a utility is of paramount importance to the analytical process since management's abilities and decisions affect all areas of a company's operations. While regulation, the economy, and other outside factors can influence results, it is ultimately the quality of management that determines the success of a company.

With emerging competition, utility management will be more closely scrutinized by Standard & Poor's and will become an increasingly critical component of the credit evaluation. Management strategies can be the key determinant in differentiating utilities and in establishing where companies lie on the business position spectrum. It is imperative that managements be adaptable, aggressive, and proactive if their utilities are to be viable in the future; this is especially important for utilities that are currently uncompetitive.

The assessment of management is accomplished through meetings, conversations, and reviews of company plans. It is based on such factors as tenure, industry experience, grasp of industry issues, knowledge of customers and their needs, knowledge of competitors, accounting and financing practices, and commitment to credit quality. Management's ability and willingness to develop workable strategies to address their systems' needs, to deal with the competitive pressures of free market, to execute reasonable and effective long-term plans, and to be proactive in leading their utilities into the future are assessed. Management quality is also indicated by thoughtful balancing of public and private priorities, a record of credibility, and effective communication with the public, regulatory bodies, and the financial community. Boards of directors will receive ever more attention with respect to their role in setting appropriate management incentives.

With competition the watchword, Standard & Poor's also focuses on management's efforts to enhance financial condition. Management can bolster bondholder protection by taking any number of discretionary actions, such as selling common equity, lowering the common dividend payout, and paying down debt. Also important for the electric industry will be creativity in entering into strategic alliances and working partnerships that improve efficiency, such as central dispatching for a number of utilities or locking up at-risk customers through long-term contracts or expanded flexible pricing agreements. Proactive management teams will also seek alternatives to traditional rate-base, rate-of-return rate-making, move to adopt higher depreciation rates for generating facilities, segment customers by individual market preferences, and attempt to create superior service organizations.

In general, management's ability to respond to mounting competition and changes in the utility industry in a swift and appropriate manner will be necessary to maintain credit health.

Fuel, power, and water supply

Assessment of present and prospective fuel and power supply is critical to every electric utility analysis, while gauging the long-term natural gas supply position for gas pipeline and distribution companies and the water resources of a water utility is equally important. There is no similar analytical category for telephone utilities.

Electric utilities

For electric utilities emphasis is placed on generating reserve margins, fuel mix, fuel contract terms, demand-side management techniques, and purchased power arrangements. The adequacy of generating margins is examined nationally, regionally, and for each individual company. However, the reserve margin picture is muddied by the imprecise nature of peak-load growth forecasting, and also supply uncertainty relating to such things as Canadian capacity availability and potential plant shutdowns due to age, new NRC rules, acid rain remedies, fuel shortages, problems associated with nontraditional technologies, and so forth. Even apparently ample reserves may not be what they seem. Moreover, the quality of capacity is just as important as the size of reserves. Companies' reserve requirements differ, depending upon individual operating characteristics.

Fuel diversity provides flexibility in a changing environment. Supply disruptions and price hikes can raise rates and ignite political and regulatory pressures that ultimately lead to erosion in financial performance. Thus, the ability to alter generating sources and take advantage of lower cost fuels is viewed favorably.

Dependence on any single fuel means exposure to that fuel's problems: electric utilities that rely on oil or gas face the potential for shortages and rapid price increases; utilities that own nuclear generating facilities face escalating costs for decommissioning; and coal-fired capacity entails environmental problems stemming from concerns over acid rain and the "greenhouse effect."

Buying power from neighboring utilities, qualifying facility projects, or independent power producers may be the best choice for a utility that faces increasing electricity demand. There has been a growing reliance on purchased power arrangements as an alternative to new plant construction. This can be an important advantage, since the purchasing utility avoids potential construction cost overruns as well as risking substantial capital. Also, utilities can avoid the financial risks typical of a multiyear construction program that are caused by regulatory lag and prudence reviews. Furthermore, purchased power may enhance supply flexibility, fuel resource diversity, and maximize load factors. Utilities that plan to meet demand projections with a portfolio of supply-side options also may be better able to adapt to future growth uncertainties. Notwithstanding the benefits of purchasing, such a strategy has risks associated with it. By entering into a firm long-term purchased power contract that contains a fixed-cost component, utilities can incur substantial market, operating, regulatory, and financial risks. Moreover, regulatory treatment of purchased power removes any upside potential that might help offset the risks. Utilities are not compensated through incentive rate-making; rather, purchased power is recovered dollar-for-dollar as an operating expense.

To analyze the financial impact of purchased power, Standard & Poor's first calculates the net present value of future annual capacity payments (discounted at 10%). This represents a potential debt equivalent—the off-balance-sheet obligation that a utility incurs when it enters into a long-term purchased power contract. However, Standard

& Poor's adds to the utility's balance sheet only a portion of this amount, recognizing that such a contractual arrangement is not entirely the equivalent of debt. What percentage is added is a function of Standard & Poor's qualitative analysis of the specific contract and the extent to which market, operating, and regulatory risks are borne by the utility (the risk factor). For unconditional, take-or-pay contracts, the risk factor range is from 40%-80%, with the average hovering around 60%. A lower risk factor is typically assigned for system purchases from coal-fired utilities and a higher risk factor is usually designated for unit-specific nuclear purchases. The range for take-and-pay performance obligations is between 10%-50%.

Gas utilities

For gas distribution utilities, long-term supply adequacy obviously is critical, but the supply role has become even more important in credit analysis since the Federal Energy Regulatory Commission's Order 636 eliminated the interstate pipeline merchant business. This thrust gas supply responsibilities squarely on local gas distributors. Standard & Poor's has always believed distributor management has the expertise and wherewithal to perform the job well, but the risks are significant since gas costs are such a large percentage of total utility costs. In that regard, it is important for utilities to get preapprovals of supply plans by state regulators or at least keep the staff and commissioners well informed. To minimize risks, a well-run program would diversify gas sources among different producers or marketers, different gas basins in the U.S. and Canada, and different pipeline routes. Also, purchase contracts should be firm, with minimal take-or-pay provisions, and have prices tied to an industry index. A modest percentage of fixed-price gas is not unreasonable. Contracts, whether of gas purchases or pipeline capacity, should be intermediate term. Staggering contract expirations (preferably annually) provides an opportunity to be an active market player. A modest degree of reliance on spot purchases provides flexibility, as does the use of market-based storage. Gas storage and on-property gas resources such as liquefied natural gas or propane air are effective peak-day and peak-season supply management tools.

Since pipeline companies no longer buy and sell natural gas and are just common carriers, connections with varied reserve basins and many wells within those basins are of great importance. Diversity of sources helps offset the risks arising from the natural production declines eventually experienced by all reserve basins and individual wells. Moreover, such diversity can enhance a pipeline's attractiveness as a transporter of natural gas to distributors and end users seeking to buy the most economical gas available for their needs.

Water utilities

Nearly all water systems throughout the U.S. have ample long-term water supplies. Yet to gain comfort, Standard & Poor's assesses the production capability of treatment plants and the ability to pump water from underground aquifers in relation to the usage demands from consumers. Having adequate treated water storage facilities has become important in recent years and has helped many systems meet demands during peak summer periods. Of interest is whether the resources are owned by the utility or purchased from other utilities or local authorities. Owning properties with water rights provides more supply security. This is especially so in states like California where water allocations are being reduced, particularly since recent droughts and environmental issues have created alarm. Since the primary cost for water companies is treatment, it makes little difference whether raw water is owned or bought. In fact, compliance with federal and state water regulations is very high, and the overall cost to deliver treated water to consumers remains relatively affordable.

Asset concentration in the electric utility industry

In the electric industry, Standard & Poor's follows the operations of major generating facilities to assess if they are well managed or troubled. Significant dependence on one generating facility or a large financial investment in a single asset suggests high risk. The size or magnitude of a particular asset relative to total generation, net plant in service, and common equity is evaluated. Where substantial asset concentration exists, the financial profile of a company may experience wide swings depending on the asset's performance. Heavy asset concentration is most prevalent among utilities with costly nuclear units.

Earnings protection

In this category, pretax cash income coverage of all interest charges is the primary ratio. For this calculation, allowance for funds used during construction (AFUDC) is removed from income and interest expense. AFUDC and other such noncash items do not provide any protection for bondholders. To identify total interest expense, the analyst reclassifies certain operating expenses. The interest component of various off-balance-sheet obligations, such as leases and some purchased-power contracts, is included in interest expense. This provides the most direct indication of a utility's ability to service its debt burden.

While considerable emphasis in assessing credit protection is placed on coverage ratios, this measure does not provide the entire earnings protection picture. Also important are a company's earned returns on both equity and capital, measures that highlight a firm's earnings performance. Consideration is given to the interaction of embedded costs, financial leverage, and pretax return on capital.

Capital structure

Analyzing debt leverage goes beyond the balance sheet and covers quasi-debt items and elements of hidden financial leverage. Noncapitalized leases (including sale/leaseback obligations), debt guarantees, receivables financing, and purchased-power contracts are all considered debt equivalents and are reflected as debt in calculating capital

structure ratios. By making debt level adjustments, the analyst can compare the degree of leverage used by each utility company.

Furthermore, assets are examined to identify undervalued or overvalued items. Assets of questionable value are discounted to more accurately evaluate asset protection.

Some firms use short-term debt as a permanent piece of their capital structure. Short-term debt also is considered part of permanent capital when it is used as a bridge to permanent financing. Seasonal, self-liquidating debt is excluded from the permanent debt amount, but this situation is rare—with the exception of certain gas utilities. Given the long life of almost all utility assets, short-term debt may expose these companies to interest-rate volatility, remarketing risk, bank line backup risk, and regulatory exposure that cannot be readily offset. The lower cost of shorter-term obligations (assuming a positively sloped yield curve) is a positive factor that partially mitigates the risk of interest-rate variability. As a rule of thumb, a level of short-term debt that exceeds 10% of total capital is cause for concern.

Similarly, if floating-rate debt and preferred stock constitute over one-third of total debt plus preferred stock, this level is viewed as unusually high and may be cause for concern. It might also indicate that management is aggressive in its financial policies.

A layer of preferred stock in the capital structure is usually viewed as equity—since dividends are discretionary and the subordinated claim on assets provides a cushion for providers of debt capital. A preferred component of up to 10% is typically viewed as a permanent wedge in the capital structure of utilities. However, as rate-of-return regulation is phased out, preferred stock may be viewed by utilities—as many industrial firms would—as a temporary option for companies that are not current taxpayers that do not benefit from the tax deductibility of interest. Even now, floating-rate preferred and money market perpetual preferred are problematic; a rise in the rate due to deteriorating credit quality tends to induce a company to take out such preferred stock with debt. Structures that convey tax deductibility to preferred stock have become very popular and do generally afford such financings with equity treatment.

Cash flow adequacy

Cash flow adequacy relates to a company's ability to generate funds internally relative to its needs. It is a basic component of credit analysis because it takes cash to pay expenses, fund capital spending, pay dividends, and make interest and principal payments. Since both common and preferred dividend payments are important to maintain capital market access, Standard & Poor's looks at cash flow measures both before and after dividends are paid.

To determine cash flow adequacy, several quantitative relationships are examined. Emphasis is placed on cash flow relative to debt, debt service requirements, and capital spending. Cash flow adequacy is evaluated with respect to a firm's ability to meet all fixed charges, including capacity payments under purchased-power contracts. Despite the conditional nature of some contracts, the purchaser is obligated to pay a minimum capacity charge. The ratio used is funds from operations plus interest and capacity payments divided by interest plus capacity payments.

Financial flexibility/capital attraction

Financing flexibility incorporates a utility's financing needs, plans, and alternatives, as well as its flexibility to accomplish its financing program under stress without damaging creditworthiness. External funding capability complements internal cash flow. Especially since utilities are so capital intensive, a firm's ability to tap capital markets on an ongoing basis must be considered. Debt capacity reflects all the earlier elements: earnings protection, debt leverage, and cash flow adequacy. Market access at reasonable rates is restricted if a reasonable capital structure is not maintained and the company's financial prospects dim. The analyst also reviews indenture restrictions and the impact of additional debt on covenant tests.

Standard & Poor's assesses a company's capacity and willingness to issue common equity. This is affected by various factors, including the market-to-book ratio, dividend policy, and any regulatory restrictions regarding the composition of the capital structure.

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November 30, 2007

U.S. Utilities Ratings Analysis Now Portrayed In The S&P Corporate Ratings Matrix

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U.S. Utilities Ratings Analysis Now Portrayed In The S&P Corporate Ratings Matrix

The electric, gas, and water utility ratings ranking lists published today by Standard & Poor's U.S. Utilities & Infrastructure Ratings practice are categorized under the business risk/financial risk matrix used by the Corporate Ratings group. This is designed to present our rating conclusions in a clear and standardized manner across all corporate sectors. Incorporating utility ratings into a shared framework to communicate the fundamental credit analysis of a company furthers the goals of transparency and comparability in the ratings process. Table 1 shows the matrix.

Table 1

Business Risk/Financial Risk

	Financial Risk Profile				
Business Risk Profile	**Minimal**	**Modest**	**Intermediate**	**Aggressive**	**Highly leveraged**
Excellent	AAA	AA	A	BBB	BB
Strong	AA	A	A-	BBB-	BB-
Satisfactory	A	BBB+	BBB	BB+	B+
Weak	BBB	BBB-	BB+	BB-	B
Vulnerable	BB	B+	B+	B	B-

The utilities rating methodology remains unchanged, and the use of the corporate risk matrix has not resulted in any changes to ratings or outlooks. The same five factors that we analyzed to produce a business risk score in the familiar 10-point scale are used in determining whether a utility possesses an "Excellent," "Strong," "Satisfactory," "Weak," or "Vulnerable" business risk profile:

- Regulation,
- Markets,
- Operations,
- Competitiveness, and
- Management.

Regulated utilities and holding companies that are utility-focused virtually always fall in the upper range ("Excellent" or "Strong") of business risk profiles. The defining characteristics of most utilities--a legally defined service territory generally free of significant competition, the provision of an essential or near-essential service, and the presence of regulators that have an abiding interest in supporting a healthy utility financial profile--underpin the business risk profiles of the electric, gas, and water utilities.

As the matrix concisely illustrates, the business risk profile loosely determines the level of financial risk appropriate for any given rating. Financial risk is analyzed both qualitatively and quantitatively, mainly with financial ratios and other metrics that are calculated after various analytical adjustments are performed on financial statements prepared under GAAP. Financial risk is assessed for utilities using, in part, the indicative ratio ranges in table 2.

Table 2

Financial Risk Indicative Ratios - U.S. Utilities

(Fully adjusted, historically demonstrated, and expected to consistently continue)

	Cash flow		Debt leverage
	(FFO/debt) (%)	(FFO/interest) (x)	(Total debt/capital) (%)
Modest	40 - 60	4.0 - 6.0	25 - 40
Intermediate	25 - 45	3.0 - 4.5	35 - 50
Aggressive	10 - 30	2.0 - 3.5	45 - 60
Highly leveraged	Below 15	2.5 or less	Over 50

The indicative ranges for utilities differ somewhat from the guidelines used for their unregulated counterparts because of several factors that distinguish the financial policy and profile of regulated entities. Utilities tend to finance with long-maturity capital and fixed rates. Financial performance is typically more uniform over time, avoiding the volatility of unregulated industrial entities. Also, utilities fare comparatively well in many of the less-quantitative aspects of financial risk. Financial flexibility is generally quite robust, given good access to capital, ample short-term liquidity, and the like. Utilities that exhibit such favorable credit characteristics will often see ratings based on the more accommodative end of the indicative ratio ranges, especially when the company's business risk profile is solidly within its category. Conversely, a utility that follows an atypical financial policy or manages its balance sheet less conservatively, or falls along the lower end of its business risk designation, would have to demonstrate an ability to achieve financial metrics along the more stringent end of the ratio ranges to reach a given rating.

Note that even after we assign a company a business risk and financial risk, the committee does not arrive by rote at a rating based on the matrix. The matrix is a guide--it is not intended to convey precision in the ratings process or reduce the decision to plotting intersections on a graph. Many small positives and negatives that affect credit quality can lead a committee to a different conclusion than what is indicated in the matrix. Most outcomes will fall within one notch on either side of the indicated rating. Larger exceptions for utilities would typically involve the influence of related unregulated entities or extraordinary disruptions in the regulatory environment.

We will use the matrix, the ranking list, and individual company reports to communicate the relative position of a company within its business risk peer group and the other factors that produce the ratings.

Missouri Gas Energy
Decoupling Mechanisms of the
Proxy Group of Nine Value Line Natural Gas Distribution Companies

	States Operated			WNA (Yes or No)	RNA (Yes or No)	Other Mechanism (Yes or No)	Description
Proxy Group of Nine Value Line Natural Gas Distribution Companies							
AGL Resources Inc.	NJ			Yes	No	No	Weather Normalization Mechanism (WNA): Protects company from vagaries of weather.
	FL			No	No	No	No decoupling mechanism present.
	VA			Yes	No	No	Weather Normalization Mechanism (WNA): Protects company from vagaries of weather.
	TN			Yes	No	No	Weather Normalization Mechanism (WNA): Protects company from vagaries of weather.
	GA			No	No	Yes	Straight Fixed Variable Rate Design: Set on usage. Higher charges in winter months than summer months.
	MD			No	No	No	No decoupling mechanism present.
	Percent of Revenues Decoupled: (1)	95.16%	(2)				
Atmos Energy Corp.	GA			Yes	No	No	Weather Normalization Mechanism (WNA): Protects company from vagaries of weather.
	KS			Yes	No	No	Weather Normalization Mechanism (WNA): Protects company from vagaries of weather.
	KY			Yes	No	No	Weather Normalization Mechanism (WNA): Protects company from vagaries of weather.
	LA			Yes	No	No	Weather Normalization Mechanism (WNA): Protects company from vagaries of weather.
	MS			Yes	No	No	Weather Normalization Mechanism (WNA): Protects company from vagaries of weather.
	TN			Yes	No	No	Weather Normalization Mechanism (WNA): Protects company from vagaries of weather.
	TX			Yes	No	Yes	In addition to the WNA, Texas also has a Gas Reliability Infrastructure Program (GRIP) that adds capital costs from the prior year automatically to rate base.
	VA			Yes	No	No	Weather Normalization Mechanism (WNA): Protects company from vagaries of weather.
	IL			No	No	No	No decoupling mechanism present.
	IA			No	No	No	No decoupling mechanism present.
	MO			No	No	No	No decoupling mechanism present.
	CO			No	No	No	No decoupling mechanism present.
	Percent of Revenues Decoupled: (1)	88.40%	(3)				
The Laclede Group, Inc.	MO			Yes	No	No	Weather Mitigation Rate Design that lessens the impact of weather volatility for customers during cold winters and stabilizes the Company's earnings by recovering fixed costs more evenly during the heating season.
	Percent of Revenues Decoupled: (1)	100.00%					
New Jersey Resources Corp.	NJ			No	No	Yes	Consumer Incentive Program (CIP): Eliminates the disincentive to promote conservation and efficiency, normalizes utility gross margin for variance in weather and in customer usage.
	Percent of Revenues Decoupled: (1)	100.00%					
Northwest Natural Gas Co.	OR			Yes	No	Yes	In addition to the WNA, Oregon also has the Conservation Tariff, which is designed to break the link between earnings and quantity consumed, removing the incentive for waste.
	WA			No	No	No	No decoupling mechanism present.
	Percent of Revenues Decoupled: (1)	81.00%	(4)				
Piedmont Natural Gas Co., Inc.	SC			Yes	No	No	Weather Normalization Mechanism (WNA): Protects company from vagaries of weather.
	NC			No	No	Yes	Customer Utilization Tracker (CUT): Recovery of approved margin from residential and commercial customers independent from weather and usage.
	TN			Yes	No	No	Weather Normalization Mechanism (WNA): Protects company from vagaries of weather.
	Percent of Revenues Decoupled: (1)	100.00%					
South Jersey Industries, Inc.	NJ			No	No	Yes	Consumer Incentive Program (CIP): Eliminates the disincentive to promote conservation and efficiency, normalizes utility gross margin
	Percent of Revenues Decoupled: (1)	100.00%					
Southwest Gas Corporation	CA			No	No	Yes	Balancing account to protect consumers if base reveues exceed authorized levels, and to protect stockholders if base revenues are less than authorized levels.
	NV			No	No	No	No decoupling mechanism present.
	AZ			No	No	No	No decoupling mechanism present.
	Percent of Revenues Decoupled: (1)	10.00%	(5)				

Exhibit FJH-3
Page 1 of 2

Missouri Gas Energy
Decoupling Mechanisms of the
Proxy Group of Nine Value Line Natural Gas Distribution Companies

	States Operated	WNA (Yes or No)	RNA (Yes or No)	Other Mechanism (Yes or No)	Description
WGL Holdings, Inc.	MD	Yes	Yes	No	Utility in Maryland enjoys both a WNA and a Revenue Normalization Adjustment (RNA) which is a mechanism which stabilizesthe level of net revenues collected by eliminating the effect of deviations of customer usage from weather and conservation efforts.
	DC	No	No	No	No decoupling mechanism present.
	VA	Yes	No	No	Weather Normalization Mechanism (WNA): Protects company from vagaries of weather.

Percent of Revenues Decoupled: (1) 85.61% (6)

Average of the Proxy Group of Nine Value Line Natural Gas Distribution Companies

Percent of Revenues Decoupled: 84.463%

Notes:

(1) The extent to which each company's revenues are decoupled partially or fully was based upon the number of customers (or meters) in each jurisdiction relative to the total number of customers (or meters).

(2) The breakdown of AGL Resources (AGL) customer base is as follows:

The Florida and Maryland Operations of AGL Resources do not have a decoupling mechanism, but only represent approximately 5% of the total number of customers that AGL serves, therefore, 95% of AGL's revenues are affected by partial or full decoupling.

State	Customers (000's)	Percent of total	Decoupling Present?	Decoupled Percent of Total
NJ	272	11.98%	Yes	11.98%
FL	104	4.58%	No	0.00%
VA	269	11.85%	Yes	11.85%
TN	61	2.69%	Yes	2.69%
GA	1,559	68.65%	Yes	68.65%
MD	6	0.26%	No	0.00%
Total	2,271	100%		95.16%

(3) Atmos Energy Corp. (ATO) serves customers in 12 states which falls under six divisions. These six divisions and states served are as follows:

In these divisions, some jurisdictions have a decoupling mechanism, while others do not. Since ATO did not specify meters by state, Mr. Hanley wieghted each state equally. For example, Atmos Energy Kentucky/ Midstates Division represents seven states, four of which have partial or full decoupling. Mr. Hanley multiplies 4/7 or 57% by the percent of total revenues for Atmos Energy Kentucky/ Midstates division to get the decoupled revenues for that division.

Division	State	Total Meters	Percent of total	Decoupling Present?	Decoupled Percent of Total
Atmos Energy Mid-Tex	TX	1,531,728	47.99%	Yes	47.99%
Atmos Energy Kentucky/ Mid-States Division	GA	489,911	15.35%	Yes	8.77%
	IL			No	
	IA			No	
	KY			Yes	
	MO			No	
	TN			Yes	
	VA			Yes	
Atmos Energy Louisiana Division	LA	359,270	11.25%	Yes	11.25%
Atmos Energy West Texas Division	TX	299,601	9.39%	Yes	9.39%
Atmos Energy Mississippi Division	MS	270,716	8.48%	Yes	8.48%
Atmos Energy Colorado-Kansas Division	CO	240,553	7.54%	No	2.51%
	KS			Yes	
	MO			No	
Total		3,191,779	100.00%		88.40%

(4) The breakdown of Northwest Natural Gas Company's (NWN) customer base is as follows:

There is a decoupling mechanism present in Oregon, but customers can opt out of this mechanism, and according to the 2007 10K approximately 10% of NWN's Oregon customers have annually opted out of the mechanism.

State	Customers	Percent of Total	Decoupling Present	Decoupled Percent of Total
OR	528,039	81.00%	Yes	81.00%
OR (opt out)	58,671	9.00%	Yes	0.00%
WA	65,190	10.00%	No	0.00%
Total	651,900	100.00%		81.00%

(5) Southwest Gas Corporation's California division is the only division that enjoys decoupled revenues. From SWX's 2007 Annual Report, its California Division only contributes 10% to the operating margin of SWX as a whole, which means that only 10% of its revenues are affected by partial or full decoupling.

(6) The breakdown of WGL Holdings, Inc's (WGL) meters per state is as follows:

The Washington D.C. Division of WGL does not enjoy a decoupling mechanism but its meters are only 14.39% of the total meters for WGL as a whole.

State	Meters	Percent of Total	Decoupling Present	Decoupled Percent of Total
DC	151,514	14.39%	No	0.00%
MD	427,554	40.60%	Yes	40.60%
VA	473,964	45.01%	Yes	45.01%
Total	1,053,032	100.00%		85.61%

Source of Information:
SEC Form 10K for each company