

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

Type of Capital	Ratios (1)	Cost Rate	Weighted Cost Rate
Long-Term Debt	44.09 %	6.57 % (2)	2.90 %
Short-Term Debt	<u>9.91</u>	5.47 (3)	<u>0.54</u>
Total Debt	54.00 (5)		3.44
Common Equity	<u>46.00</u>	11.75 (4)	<u>5.41</u>
Total	<u>100.00 %</u>		<u>8.85 %</u>

Notes:

- (1) A hypothetical capital structure consisting of 54.00% debt and 46.00% equity is utilized for cost of capital purposes for the following reasons:
  - (a) Southern Union Company's transformation from a utility to a gas transportation and energy services company. As George L. Lindemann, Southern Union's chairman, President and CEO has stated: "The sale of these assets is part of the continuing transformation of Southern Union Company from a utility to a leader in the natural gas transportation and services industry." In addition Eric D. Herschmann, senior executive vice president of Southern Union stated: "We believe this transaction [sale of New England Gas Company Rhode Island Assets], as well as our company's ongoing transformation, will further enhance value for our shareholders." (Business Wire - February 16, 2006)
  - (b) The sale of New England Gas Company's Rhode Island assets to National Grid PLC as noted in (1) (a) above, which was completed on August 25, 2006.
  - (c) The sale of PG Energy to UGI Utilities, Inc., which was completed on August 25, 2006
  - (d) Because the cost of common equity is expectational and Southern Union is positioning itself as a gas transportation and energy services company (see (1) (a) above), investors no longer view Southern Union as a regulated natural gas distribution utility, Southern Union's cost of common equity is not applicable to PG Energy, a regulated natural gas distribution utility.
  - (e) The use of the proceeds from the sales cited in (1) (b) and (1) (c) above to help fund the acquisition of Sid Richardson Energy Services.
- (2) From page 1 of Schedule FJH-7 of the Exhibit accompanying Mr. Hanley's direct testimony.
- (3) Estimated short-term debt cost rate is based upon the six-quarter average beginning with the first quarter of 2006 and ending with the second quarter 2007 of the 3-month LIBOR rate of 4.97% (as can be gleaned from the information shown on page 7 of Schedule FJH-13 of the Exhibit accompanying Mr. Hanley's direct testimony) plus 0.50% (50 basis points). Thus, 5.47% = 4.97% + 0.50%.
- (4) Based upon informed judgment from the entire study, the principal results of which are summarized on page 2 of this Schedule.
- (5) The 54.00% total debt ratio has been allocated between long-term and short-term debt based upon the midpoint of the average long-term and short-term debt ratios of the proxy group of four gas distribution companies and the proxy group of eight Value Line gas distribution companies for the five quarters ended December 31, 2005 as shown on pages 3 and 4 of Schedule FJH-6 of the Exhibit accompanying Mr. Hanley's direct testimony. The allocation is derived as follows:

Average for the five quarters ended December 31, 2005	Proxy Group of Four Gas Distribution Companies		Proxy Group of Eight Value Line Gas Distribution Companies	
	Ratios	% to Total	Ratios	% to Total
Long-Term Debt	42.36 %	82.86 %	41.26 %	80.41 %
Short-Term Debt	<u>8.76</u>	<u>17.14</u>	<u>10.05</u>	<u>19.59</u>
Total Debt	<u>51.12 %</u>	<u>100.00 %</u>	<u>51.31 %</u>	<u>100.00 %</u>

Midpoint of the Proxy Group of Four Gas Distribution Companies and the Proxy Group of Eight Value Line Gas Distribution Companies		
	Ratios	% to Total
Long-Term Debt	41.81 %	81.64 %
Short-Term Debt	<u>9.41</u>	<u>18.36</u>
Total Debt	<u>51.22 %</u>	<u>100.00 %</u>

Therefore, the hypothetical long-term debt ratio of 44.09% is derived as 81.64% \* 54.00% and the short-term debt ratio of 9.91% is derived as 18.36% \* 54.00%.

Missouri Gas Energy  
Brief Summary of Common Equity Cost Rate

Line No.	Principal Methods	Proxy Group of Four Gas Distribution Companies	Proxy Group of Eight Value Line Gas Distribution Companies	Southern Union Company
1.	Discounted Cash Flow Model (1)	9.76 %	9.81 %	13.03 %
2.	Risk Premium Model (2)	11.50	11.30	11.95
3.	Capital Asset Pricing Model (3)	11.55	11.32	12.49
4.	Comparable Earnings Analysis (4)	14.36	14.35	14.11
5.	Indicated Common Equity Cost Rate before Investment Risk Adjustments	11.79 %	11.70 %	12.90 %
	B. Adjusted Discounted Cash Flow Model (DCF) (5)	10.89	10.85	15.18
6.	Indicated Common Equity Cost Rate Before Adjustments for Unique Risk		11.31 %	14.04 %
7.	Adjustments for Unique Risk			
	A. Due to smaller relative size		0.30 (6)	0.50 (6)
	B. Due to Lack of Protection from the Vagaries of Weather		0.15 (7)	--
8.	Common Equity Cost Rate after Investment Risk Adjustment		11.76 %	14.54 %
9.	Recommendation		11.75% (8)	

See pages 4 through 6 for notes.

(FOR INFORMATIONAL PURPOSES ONLY)  
Brief Summary of Common Equity Cost Rate  
For the Proxy Group of Three Gas Distribution Companies (9)  
and the Proxy Group of Six Value Line Gas Distribution Companies (9)

Line No.	Principal Methods	Proxy Group of Three Gas Distribution Companies (9)	Proxy Group of Six Value Line Gas Distribution Companies (9)	Southern Union Company
1.	Discounted Cash Flow Model (1)	9.69 %	9.58 %	13.03 %
2.	Risk Premium Model (2)	11.49	11.33	11.95
3.	Capital Asset Pricing Model (3)	11.65	11.34	12.49
4.	Comparable Earnings Analysis (4)	14.15	14.71	14.11
5.	Indicated Common Equity Cost Rate before			
A.	Investment Risk Adjustments	11.75 %	11.74 %	12.90 %
B.	Adjusted Discounted Cash Flow Model (DCF) (5)	10.72	10.53	15.18
6.	Indicated Common Equity Cost Rate Before Adjustments for Unique Risk		11.19 %	14.04 %
7.	Adjustments for Unique Risk			
A.	Due to smaller relative size		0.30 (6)	0.50 (6)
B.	Due to Lack of Protection from the Vagaries of Weather		0.19 (7)	--
8.	Common Equity Cost Rate after Investment Risk Adjustment		<u>11.68 %</u>	<u>14.54 %</u>
9.	Recommendation	<div style="border: 1px solid black; padding: 2px; display: inline-block;">11.75%</div>		

See pages 4 through 6 for notes.

Missouri Gas Energy  
Notes to Brief Summary of Cost of Equity

Notes:

- (1) From page 1 of Schedule FJH-27.
- (2) From page 1 of Schedule FJH-28.
- (3) From page 1 of Schedule FJH-29.
- (4) From Pages 1 through 6 of Schedule FJH-30.
- (5) The 10.89% (4 LDCs), 10.85% (8 LDCs) and 15.18% (Southern Union Company) adjusted DCF cost rates reflect the added financial risk attributable to the application of a market based cost of common equity to a book value common equity ratio as made by the Pennsylvania Public Utility Commission (PAPUC) in Orders re: Pennsylvania-American Water Company (R-00016339) entered January 25, 2002, re: Pennsylvania-American Water Company (R-00038304) entered January 16, 2004, and re: Aqua Pennsylvania, Inc. (formerly Pennsylvania Suburban Water Company) (R-00038805) entered August 5, 2004, in order to reflect understatement of DCF cost rates due to the divergence of market and book value common equity ratios, especially in a volatile stock market. The basis for this adjustment is shown below:

The 9.76%, 9.81% and 13.03% DCF cost rates are relative to the average market value common equity of the proxy group of four gas distribution companies, the proxy group of eight value line gas distribution companies (LDCs), and Southern Union Company, respectively. The cost of common equity for an LDC with 100% common equity must first be calculated as follows:

$$k_u = k_e - \{ \{ (k_u - l) * (1 - t) * (MD / ME) \} - \{ (k_u - l_s) * (1 - t) * (MS / ME) \} - \{ (k_u - d) * (MP / ME) \} \}$$

For the Proxy Group of Four Gas Distribution Companies:

$$8.74\% = 9.76\% - \{ \{ (8.74\% - 6.29\%) * (1 - 35\%) * (28.15\% / 63.36\%) \} - \{ (8.74\% - 5.23\%) * (1 - 35\%) * (8.49\% / 63.36\%) \} - \{ (8.74\% - 6.22\%) * (0.0\% / 63.36\%) \} \}$$

For the Proxy Group of Eight Value Line Gas Distribution Companies:

$$8.85\% = 9.81\% - \{ \{ (8.85\% - 6.29\%) * (1 - 35\%) * (28.22\% / 65.18\%) \} - \{ (8.85\% - 5.23\%) * (1 - 35\%) * (6.43\% / 65.18\%) \} - \{ (8.85\% - 6.22\%) * (0.17\% / 65.18\%) \} \}$$

For Southern Union Company:

$$10.28\% = 13.03\% - \{ \{ (10.28\% - 6.29\%) * (1 - 35\%) * (38.72\% / 50.40\%) \} - \{ (10.28\% - 5.23\%) * (1 - 35\%) * (7.03\% / 50.40\%) \} - \{ (10.28\% - 6.22\%) * (3.85\% / 50.40\%) \} \}$$

Where:

- $k_u$  = cost of common equity for a firm with 100% common equity.
- $K_e$  = market determined cost of common equity, i.e., DCF cost rate, 9.76% (4 LDCs.) / 9.81% (8 LDCs.) / 13.03% (Southern Union Company).
- $l$  = cost rate of long-term debt, i.e., 6.29%, the average of the July 2006 (6.37%) and August 2006 (6.20%) yields on Moody's A rated public utility debt.
- $l_s$  = cost rate of short-term debt, i.e., 5.23%, the average of the July 2006 (5.24%) and August 2006 (5.22%) commercial paper rate, from Federal Reserve Statistical Release H.15.
- $t$  = tax rate, i.e., 35%.
- $MD$  = average long-term debt ratio based upon a market-value capital structure, using the fair value of long-term debt at October 13, 2006 from pages 7 to 9 of this schedule.
- $MS$  = average short-term debt ratio based upon a market-value capital structure, using the book value of short-term debt October 13, 2006 from pages 7 to 9 of this schedule.
- $ME$  = average common equity ratio based upon a market-value capital structure at October 13, 2006.
- $d$  = cost rate of preferred stock, i.e., 6.22%, the average of the July 2006 (6.25%) and August 2006 (6.19%) yields on Moody's A rated public utility preferred

**Missouri Gas Energy**  
**Notes to Brief Summary of Cost of Equity**

stocks.

MP = average preferred stock ratio based upon a market-value capital structure at October 13, 2006, assuming preferred stock has a market-to-book ratio of 1.00, from pages 7 to 9 of this schedule.

From these "unlevered" costs of common equity, 8.74% (4 LDCs), 8.85% (8 LDCs) and 10.28% (Southern Union), the cost of common equity using the average book value capital structure ratios of the proxy groups can be derived as follows:

$$k_u = k_o + [ \{ (k_u - l) * (1 - t) * (BD / BE) \} + \{ (k_u - l_s) * (1 - t) * (BS / BE) \} + \{ (k_u - d) * (BP / BE) \} ]$$

For the Proxy Group of Four Gas Distribution Companies:

$$10.89\% = 8.74\% + [ \{ (8.74\% - 6.29\%) * (1 - 35\%) * (41.52\% / 45.00\%) \} + \{ (8.74\% - 5.23\%) * (1 - 35\%) * (13.48\% / 45.00\%) \} + \{ (8.74\% - 6.22\%) * (0.0\% / 45.00\%) \} ]$$

For the Proxy Group of Eight Value Line Gas Distribution Companies:

$$10.85\% = 8.85\% + [ \{ (8.85\% - 6.29\%) * (1 - 35\%) * (41.64\% / 47.43\%) \} + \{ (8.85\% - 5.23\%) * (1 - 35\%) * (10.69\% / 47.43\%) \} + \{ (8.85\% - 6.22\%) * (0.24\% / 47.43\%) \} ]$$

For Southern Union Company:

$$15.18\% = 10.28\% + [ \{ (10.28\% - 6.29\%) * (1 - 35\%) * (48.89\% / 36.50\%) \} + \{ (10.28\% - 5.23\%) * (1 - 35\%) * (9.44\% / 36.50\%) \} + \{ (10.28\% - 6.22\%) * (5.17\% / 36.50\%) \} ]$$

Where:  $k_u$  = cost of common equity for a firm with 100% common equity.  
 $k_o$  = cost of common equity based upon book value capital structure ratios.  
 $l$  = cost rate of debt, i.e., 6.29%, the average of the July 2006 (6.37%) and August 2006 (6.20%) yields on Moody's A rated public utility debt.  
 $l_s$  = cost rate of short-term debt, i.e., 5.23%, the average of the July 2006 (5.24%) and August 2006 (5.22%) commercial paper rate, from Federal Reserve Statistical Release H.15.  
 $t$  = tax rate, i.e., 35%.  
 $BD$  = average debt ratio based upon the carrying value of long-term debt at October 13, 2006 from pages 7 to 9 of this schedule.  
 $BS$  = average short-term debt ratio based upon a book value capital structure, using the book value of short-term debt at October 13, 2006 from pages 6 to 8 of this schedule.  
 $d$  = cost rate of preferred stock, i.e., 6.22%, the average of the July 2006 (6.25%) and August 2006 (6.19%) yields on Moody's A rated public utility preferred stocks.  
 $BP$  = average preferred stock ratio based upon a book-value capital structure at October 13, 2006, from pages 7 to 9 of this schedule.

Had the average capital structure of Cascade Natural Gas Company and Northwest Natural Gas Company been used, the adjusted DCF for the group of four gas distribution companies would be 10.85% as shown on page 1 of Schedule FJH-27. Had the average capital structure of Cascade Natural Gas Company, The Laclede Group, Northwest Natural Gas and Peoples Energy been used, the adjusted DCF for the group of eight gas distribution companies would be 10.82% as shown on page 1 of Schedule FJH-27.

As indicated in Note 9 below, Cascade Natural Gas Corporation and Peoples Energy Corporation are currently in the process of being acquired by MDU Resources and WPS Resources, respectively. Therefore, for informational purposes, the adjusted DCF cost rates to reflect the added financial risk attributable to the application of the averages excluding Cascade in the proxy group of four gas distribution companies and Cascade and Peoples in the proxy group of eight Value Line gas distribution companies have been calculated and the results shown on page 1 of Schedule FJH-27. If such companies were excluded from the proxy the adjusted DCFs would be 10.72% (3 LDCs) and 10.53% (6 LDCs). The 9.69% and 9.58% DCF

# Missouri Gas Energy Notes to Brief Summary of Cost of Equity

cost rates are relative to the average market value common equity of the 3 LDCs (after the exclusion of Cascade Natural) and the proxy group of 6 LDCs (after the exclusion of Cascade Natural and Peoples Energy), respectively. The cost of common equity for an LDC with 100% common equity has been calculated in a similar fashion to those calculated for the proxy groups of 4 LDCs and 8 LDCs, in pages 4 and 5 of this exhibit, using the following formula:

$$k_u = k_e - \{ [(k_u - l) * (1 - t) * (MD / ME)] - [(k_u - l_s) * (1 - t) * (MS / ME)] - [(k_u - d) * (MP / ME)] \}$$

From these "unlevered" costs of common equity, 8.71% (3 LDCs) and 8.70% (6 LDCs), the cost of common equity using the average book value capital structure ratios of the proxy groups can be derived in a similar fashion to those calculated for the proxy groups of 4 LDCs and 8 LDCs, in pages 4 and 5 of this exhibit, using the following formula:

$$k_u = k_e + \{ [(k_u - l) * (1 - t) * (BD / BE)] + [(k_u - l_s) * (1 - t) * (BS / BE)] + [(k_u - d) * (BP / BE)] \}$$

Had the average capital structure of Northwest Natural Gas Company been used, the adjusted DCF for the group of 3 LDCs would be 10.50% as shown on page 1 of Schedule FJH-27. Had the average capital structure of The Laclede Group and Northwest Natural Gas been used, the adjusted DCF for the group of 6 LDCs would be 10.40% as shown on page 1 of Schedule FJH-27.

- (6) Business Risk Adjustment due to PG Energy's greater relative business risk due to its small size vis-à-vis the two proxy groups and Southern Union Company, respectively, as fully determined in Mr. Hanley's accompanying direct testimony.
- (7) As explained in Mr. Hanley's direct testimony, Missouri Gas Energy does not enjoy protection from the vagaries of weather. Since the majority of the companies in both proxy groups have such clauses (see page 3 of Schedules FJH-3 and FJH-4 of the Exhibit accompanying Mr. Hanley's direct testimony, Missouri Gas Energy has greater relative risk vis-à-vis than the companies in the proxy groups, due to the greater variability of its earnings attributable to the vagaries of weather. In Mr. Hanley's judgment the added risk attributable to the lack of protection from the vagaries of weather is approximately 25 basis points. As shown on Page 3 of Schedule FJH-3 of the Exhibit accompanying Mr. Hanley's direct testimony, the equivalent of 2 companies in the proxy group of four LDCs, have WNCs in place. This equates to about 50% of the full impact or 13 basis points ((0.25% \* 50%) = 0.125%, rounded to 0.13%). It can be determined in similar fashion by reference to Page 3 of Schedule FJH-4 of the Exhibit accompanying Mr. Hanley's direct testimony that the equivalent of 5 companies in the proxy group of eight Value Line LDCs enjoy protection from weather, of the full impact or 16 basis points ((0.25% \* 625%) = 0.156%, rounded to 0.16%). The average risk of both groups is equal to 15 basis points ((0.13% for the group of 4 plus 0.17% for the group of 8, divided by 2) or (0.13 + 0.16) / 2 = 0.145%, rounded to 0.15%). Cascade Natural Gas Corporation and Peoples Energy Corporation are currently in the process of being acquired by MDU Resources and WPS Resources, respectively. For informational purposes, the averages excluding Cascade in the proxy group of 4 LDCs, and Cascade and Peoples in the proxy group of eight Value Line LDCs are being calculated and shown on page 3 of this Schedule. If such companies were excluded from the proxy groups, the average risk for both groups would be equal to 19 basis points ((0.17% for the group of 3 LDCs, after the exclusion of Cascade, plus 0.21% for the group of 6 LDCs, after the exclusion of Cascade and Peoples, divided by 2) or (0.17 + 0.21) / 2 = 0.19%).
- (8) Mr. Hanley's recommended common equity cost rate for Missouri Gas Energy is 11.75% based upon current capital market conditions.
- (9) Cascade Natural Gas Corporation and Peoples Energy Corporation are currently in the process of being acquired by MDU Resources and WPS Resources, respectively. For informational purposes, the averages excluding Cascade Natural in the proxy group of four gas distribution companies, and Cascade Natural and Peoples Energy in the proxy group of eight Value Line LDCs are being shown.

Capital Structure Based upon Total Capital  
for the Proxy Group of Four Gas Distribution Companies  
At September 2005 (1)

	Based Upon Book Value		Based Upon Market Value of Common Equity at October 13, 2006	
	Amount Outstanding (\$ mill. )	Ratios	Amount Outstanding (\$ mill. )	Ratios
<b>Cascade Natural Gas Corporation</b>				
Long-Term Debt	\$ 173.84	57.00 %	\$ 188.63	37.89 %
Short-Term Debt	12.50	4.10	12.50	2.51
Total Debt	186.34	61.10	201.13	40.40
Preferred Stock	-	-	-	-
Common Equity	118.62	38.90	296.67	59.60
Total Equity	118.62	38.90	296.67	59.60
Total Capital	\$ 304.96	100.00 %	\$ 497.80	100.00 %
<b>NICOR Inc.</b>				
Long-Term Debt	\$ 536.40	27.74 %	\$ 525.00	17.05 %
Short-Term Debt	586.00	30.30	586.00	19.04
Total Debt	1,122.40	58.04	1,111.00	36.09
Preferred Stock	-	-	-	-
Common Equity	811.30	41.96	1,967.36	63.91
Total Equity	811.30	41.96	1,967.36	63.91
Total Capital	\$ 1,933.70	100.00 %	\$ 3,078.36	100.00 %
<b>Northwest Natural Gas Company</b>				
Long-Term Debt	\$ 529.50	42.60 %	\$ 579.38	31.82 %
Short-Term Debt	126.70	10.19	126.70	6.96
Total Debt	656.20	52.79	706.08	38.78
Preferred Stock	-	-	-	-
Common Equity	586.93	47.21	1,114.83	61.22
Total Equity	586.93	47.21	1,114.83	61.22
Total Capital	\$ 1,243.13	100.00 %	\$ 1,820.91	100.00 %
<b>Piedmont Natural Gas Co., Inc.</b>				
Long-Term Debt	\$ 660.00	38.76 %	\$ 753.27	25.85 %
Short-Term Debt	158.50	9.31	158.50	5.44
Total Debt	818.50	48.07	911.77	31.29
Preferred Stock	-	-	-	-
Common Equity	884.19	51.93	2,002.00	68.71
Total Equity	884.19	51.93	2,002.00	68.71
Total Capital	\$ 1,702.69	100.00 %	\$ 2,913.77	100.00 %
<b>Proxy Group of Four Gas Distribution Companies</b>				
Long-Term Debt		41.52 %		28.15 %
Short-Term Debt		13.48		8.49
Total Debt		55.00		36.64
Preferred Stock		-		-
Common Equity		45.00		63.36
Total Equity		45.00		63.36
Total Capital		100.00 %		100.00 %
<b>Proxy Group of Three Gas Distribution Companies (2)</b>				
Long-Term Debt		36.37 %		24.91 %
Short-Term Debt		16.60		10.48
Total Debt		52.97		35.39
Preferred Stock		-		-
Common Equity		47.03		64.61
Total Equity		47.03		64.61
Total Capital		100.00 %		100.00 %
<b>Southern Union Company</b>				
Long-Term Debt	\$ 2,175.79 (3)	48.89 %	\$ 2,313.06	38.72 %
Short-Term Debt	420.00	9.44	420.00	7.03
Total Debt	2,595.79	58.33	2,733.06	45.75
Preferred Stock	230.00	5.17	230.00	3.85
Common Equity	1,624.07	36.50	3,011.37	50.40
Total Equity	1,854.07	41.67	3,241.37	54.25
Total Capital	\$ 4,449.86	100.00 %	\$ 5,974.43	100.00 %

(1) Capital Structure based upon Total Capital as of September 2005, except NICOR Northwest Natural and Southern Union, which is December 2005, and for Piedmont Natural Gas, which is October 2005

(2) Cascade Natural Gas Corporation is currently in the process of being acquired by MDU Resources. For informational purposes, the averages excluding Cascade Natural are being shown.

(3) Book Value Long-term debt for Southern Union is based on the carrying amount published by the company in their annual Form 10K.

Source of Information:  
Standard & Poor's Compustat Services, Inc., PC Plus/Research Insight Data Base  
Company Annual Forms 10-K and 10-Q  
DTN Trading Markets' DTN/Interquote.com

Capital Structure Based upon Total Capital  
for the Proxy Group of Eight Value Line Gas Distribution Companies and Southern Union Company  
At September 2005 (1)

	Based Upon Book Value		Based Upon Market Value of Common Equity at October 13, 2006	
	Amount Outstanding (\$ mill.)	Ratios	Amount Outstanding (\$ mill.)	Ratios
<b>Cascade Natural Gas Corporation</b>				
Long-Term Debt	\$ 173.84	57.01 %	\$ 188.63	37.89 %
Short-Term Debt	12.50	4.10	12.50	2.51
Total Debt	186.34	61.11	201.13	40.40
Preferred Stock	-	-	-	-
Common Equity	118.62	38.90	296.67	59.60
Total Equity	118.62	38.90	296.67	59.60
Total Capital	\$ 304.96	100.01 %	\$ 497.80	100.00 %
<b>The Laclede Group, Inc.</b>				
Long-Term Debt	\$ 380.43	46.48 %	\$ 413.52	34.62 %
Short-Term Debt	70.61	8.62	70.61	5.91
Total Debt	451.04	55.10	484.13	40.53
Preferred Stock	1.01	0.12	1.01	0.09
Common Equity	366.53	44.78	709.26	59.38
Total Equity	367.53	44.90	710.27	59.47
Total Capital	\$ 818.57	100.00 %	\$ 1,194.40	100.00 %
<b>New Jersey Resources Corp.</b>				
Long-Term Debt	\$ 264.80 (2)	30.20 %	\$ 266.80	14.49 %
Short-Term Debt	174.10	19.85	174.10	9.45
Total Debt	438.90	50.05	440.90	23.94
Preferred Stock	-	-	-	-
Common Equity	438.05	49.95	1,400.89	76.06
Total Equity	438.05	49.95	1,400.89	76.06
Total Capital	\$ 876.95	100.00 %	\$ 1,841.79	100.00 %
<b>NICOR Inc.</b>				
Long-Term Debt	\$ 536.40	27.74 %	\$ 525.00	17.05 %
Short-Term Debt	586.00	30.30	586.00	19.04
Total Debt	1,122.40	58.04	1,111.00	36.09
Preferred Stock	-	-	-	-
Common Equity	811.30	41.96	1,967.36	63.91
Total Equity	811.30	41.96	1,967.36	63.91
Total Capital	\$ 1,933.70	100.00 %	\$ 3,078.36	100.00 %
<b>Northwest Natural Gas Company</b>				
Long-Term Debt	\$ 529.50	42.60 %	\$ 579.38	31.82 %
Short-Term Debt	126.70	10.19	126.70	6.96
Total Debt	656.20	52.79	706.08	38.78
Preferred Stock	-	-	-	-
Common Equity	586.93	47.21	1,114.83	61.22
Total Equity	586.93	47.21	1,114.83	61.22
Total Capital	\$ 1,243.13	100.00 %	\$ 1,820.91	100.00 %
<b>Peoples Energy Corporation</b>				
Long-Term Debt	\$ 895.58	52.56 %	\$ 912.80	36.32 %
Short-Term Debt	8.15	0.48	8.15	0.32
Total Debt	903.73	53.04	920.95	36.64
Preferred Stock	-	-	-	-
Common Equity	800.15	46.96	1,592.41	63.36
Total Equity	800.15	46.96	1,592.41	63.36
Total Capital	\$ 1,703.89	100.00 %	\$ 2,513.36	100.00 %



Capital Structure Based upon Total Capital  
for the Proxy Group of Eight Value Line Gas Distribution Companies and Southern Union Company  
At September 2005 (1)

	Based Upon Book Value		Based Upon Market Value of Common Equity at October 13, 2006	
	Amount Outstanding (\$ mill )	Ratios	Amount Outstanding (\$ mill )	Ratios
<b>Piedmont Natural Gas Co., Inc.</b>				
Long-Term Debt	\$ 660.00	38.76 %	\$ 753.27	25.86 %
Short-Term Debt	158.50	9.31	158.50	5.44
Total Debt	818.50	48.07	911.77	31.29
Preferred Stock	-	-	-	-
Common Equity	884.19	51.93	2,002.00	68.71
Total Equity	884.19	51.93	2,002.00	68.71
Total Capital	\$ 1,702.69	100.00 %	\$ 2,913.77	100.00 %
<b>WGL Holdings, Inc.</b>				
Long-Term Debt	\$ 584.20 (2)	37.76 %	\$ 626.80	27.76 %
Short-Term Debt	40.88	2.64	40.88	1.81
Total Debt	625.08	40.40	667.68	29.57
Preferred Stock	28.17	1.82	28.20	1.25
Common Equity	893.99	57.78	1,561.85	69.18
Total Equity	922.17	59.60	1,590.05	70.43
Total Capital	\$ 1,547.24	100.00 %	\$ 2,257.73	100.00 %
<b>Proxy Group of Eight Gas Distribution Companies</b>				
Long-Term Debt		41.64 %		28.22 %
Short-Term Debt		10.69		8.43
Total Debt		52.33		34.65
Preferred Stock		0.24		0.17
Common Equity		47.43		65.18
Total Equity		47.67		65.35
Total Capital		100.00 %		100.00 %
<b>Proxy Group of Six Gas Distribution Companies (2)</b>				
Long-Term Debt		37.26 %		25.27 %
Short-Term Debt		13.49		8.10
Total Debt		50.75		33.37
Preferred Stock		0.32		0.22
Common Equity		48.93		66.41
Total Equity		49.25		66.63
Total Capital		100.00 %		100.00 %
<b>Southern Union Company</b>				
Long-Term Debt	\$ 2,175.79 (3)	48.89 %	\$ 2,313.06	38.72 %
Short-Term Debt	420.00	9.44	420.00	7.03
Total Debt	2,595.79	58.33	2,733.06	45.75
Preferred Stock	230.00	5.17	230.00	3.85
Common Equity	1,624.07	36.50	3,011.37	50.40
Total Equity	1,854.07	41.67	3,241.37	54.25
Total Capital	\$ 4,449.86	100.00 %	\$ 5,974.43	100.00 %

(1) Capital Structure based upon Total Capital as of September 2005, except NICOR Northwest Natural and Southern Union, which is December 2005, and for Piedmont Natural Gas, which is October 2005.

(2) Cascade Natural Gas Corporation and Peoples Energy Corporation are currently in the process of being acquired by MDU Resources and WPS Resources, respectively. For informational purposes, the averages excluding Cascade Natural and Peoples Energy are being shown.

(3) Book Value Long-term debt for Southern Union is based on the carrying amount published by the company in their annual Form 10-K.

Source of Information:  
Standard & Poor's Compustat Services, Inc., PC Plus/Research Insight Data Base  
Company Annual Forms 10-K and 10-Q  
DTN Trading Markets' DTN/Interquote.com

**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	2	3	4	5
	Total Capitalization (incl. Short-Term Debt) for the Year 2005 (millions ) (times larger)	Market Capitalization on October 13, 2006 (1) (millions ) (times larger)	Applicable Decile of the NYSE/AMEX/ NASDAQ	Applicable Size Premium	Spread from Applicable Size Premium (2)
1. Missouri Gas Energy					
A. Based upon the Proxy Group of Four Gas Distribution Companies	\$ 580,602 (3)	\$ 583,296	8 - 9 (4)	2.55%	(5)
Based upon the Proxy Group of Three Gas Distribution Companies (15)		\$ 554,451	8 - 9 (4)	2.55%	(5)
Based upon the Proxy Group of Eight Value Line Gas Distribution Companies		\$ 547,507	8 - 9 (4)	2.55%	(5)
Based upon the Proxy Group of Six Value Line Gas Distribution Companies (15)		\$ 541,632	8 - 9 (4)	2.55%	(5)
C. Based upon Southern Union Company		\$ 467,811	9 (4)	2.76%	(5)
2. Proxy Group of Four Gas Distribution Companies	\$ 1,296,120 (6)	\$ 1,345,214	6 - 7 (7)	1.70%	(8)
Proxy Group of Three Gas Distribution Companies (15)	\$ 1,626,508 (6)	\$ 1,487,346	6 - 7 (7)	1.70%	(8)
Proxy Group of Eight Value Line Gas Distribution Companies	\$ 1,279,600 (9)	\$ 1,330,658	6 - 7 (10)	1.70%	(11)
Proxy Group of Six Value Line Gas Distribution Companies (15)	\$ 1,371,336 (9)	\$ 1,459,363	6 - 7 (10)	1.70%	(11)
4. Southern Union Company	\$ 4,449,858 (12)	\$ 3,011,366	4 (13)	1.10%	(14)
			Recent Total Market Capitalization (millions )	Recent Average Market Capitalization (millions )	

See page 11 for notes.

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

Notes:

- (1) From page 12 of this Schedule.
- (2) Line No. 1 – Line No. 2 and Line No. 1 – Line No. 3 of Columns 3 and 4, respectively. For example, the 0.85% in Column 5, Line No. 2 is derived as follows  $0.85\% = 2.55\% - 1.70\%$ .
- (3) Company-provided rate base at December 31, 2005 presumed to equal total capitalization if it were a stand alone entity rather than a division.
- (4) With an estimated market capitalization of \$583.296 million (based upon the proxy group of four gas distribution companies), \$547.507 (based upon the proxy group of Eight Value Line gas distribution companies) and \$467.811 (based upon Southern Union Company), Missouri Gas Energy falls between the 8<sup>th</sup> and 9<sup>th</sup> deciles for the two proxy groups, and in the 9<sup>th</sup> decile for Southern Union, of the NYSE/AMEX/NASDAQ, which have an average market capitalization of \$602.679 and \$387.790, respectively, as shown in the table on the bottom half of page 10 of this Schedule. If Cascade Natural Gas Corporation and Peoples Energy Corporation were excluded as indicated in Note 15 below, the estimated market capitalization for the proxy group of three gas distribution companies and six gas distribution companies would be \$554.451 and \$541.632, respectively, and based on both groups Missouri Gas Energy would also fall between the 8<sup>th</sup> and 9<sup>th</sup> deciles.
- (5) Size premium applicable to the 8<sup>th</sup> and 9<sup>th</sup> decile of the NYSE/AMEX/NASDAQ as shown on page 24 of this Schedule.
- (6) From page 1 of Schedule FJH-3 of the Exhibit accompanying Mr. Hanley's direct testimony.
- (7) With an estimated market capitalization of \$1,345.214 million, the proxy group of four gas distribution companies falls between the 6<sup>th</sup> and 7<sup>th</sup> deciles of the NYSE/AMEX/NASDAQ which have an average market capitalization of \$1,352.997 million as can be gleaned from the information shown in the table on the bottom half of page 10 of this Schedule. If Cascade Natural Gas Corporation were excluded from the group of four gas distribution companies, as indicated in Note 15 below, the estimated market capitalization would be \$1,487.346 and the group would also fall between the 6<sup>th</sup> and 7<sup>th</sup> deciles.
- (8) Average size premium applicable to the 6<sup>th</sup> and 7<sup>th</sup> deciles of the NYSE/AMEX/NASDAQ as can be gleaned from the information shown on page 24 of this schedule.
- (9) From page 1 of Schedule FJH-4 of the Exhibit accompanying Mr. Hanley's direct testimony.
- (10) With an estimated market capitalization of \$1,330.658 million, the proxy group of eight Value Line gas distribution companies falls between the 6<sup>th</sup> and 7<sup>th</sup> deciles of the NYSE/AMEX/NASDAQ which have an average market capitalization of \$1,352.997 as shown in the table on the bottom half of page 10 of this Schedule. If Cascade Natural Gas Corporation and Peoples Energy Corporation were excluded from the group of eight Value Line gas distribution companies, as indicated in Note 15 below, the estimated market capitalization would be \$1,459.363 and the group would also fall between the 6<sup>th</sup> and 7<sup>th</sup> deciles.
- (11) Average size premium applicable to the 6<sup>th</sup> and 7<sup>th</sup> deciles of the NYSE/AMEX/NASDAQ as can be gleaned from the information shown on page 24 of this schedule.
- (12) From page 1 of Schedule FJH-5 of the Exhibit accompanying Mr. Hanley's direct testimony.
- (13) With an estimated market capitalization of \$3,011.366 million, Southern Union Company falls in the 4<sup>th</sup> decile of the NYSE/AMEX/NASDAQ which has an average market capitalization of \$3,185.908 as shown in the table on the bottom half of page 10 of this Schedule.
- (14) Average size premium applicable to 4<sup>th</sup> deciles of the NYSE/AMEX/NASDAQ as can be gleaned from the information shown on page 24 of this schedule.
- (15) Cascade Natural Gas Corporation and Peoples Energy Corporation are currently in the process of being acquired by MDU Resources and WPS Resources, respectively. For informational purposes, the averages excluding Cascade in the proxy group of 4 LDCs, and Cascade and Peoples in the proxy group of eight Value Line LDCs are being shown.

Source of Information: Ibbotson Associates, Stocks, Bonds, Bills and Inflation – Valuation Edition – 2006 Yearbook, Chicago, IL, 2006

Missouri Gas Energy  
Market Capitalization of Missouri Gas Energy  
for the Proxy Group of Four Gas Distribution Companies, the Proxy Group of Eight  
Value Line Gas Distribution Companies and Southern Union Company

	1	2	3	4	5	6
Company	Common Stock Shares Outstanding at June 30, 2006 (1) & ( * ) ( millions )	Book Value per Share at September 30, 2005 (1) & ( * ) ( millions )	Total Common Equity at June 30, 2006 ( * ) ( millions )	Closing Stock Market Price on October 13, 2006	Market-to-Book Ratio at October 13, 2006 (2)	Market Capitalization on October 13, 2006 (3) ( millions )
Missouri Gas Energy	NA (4)	NA	\$ 267.077 (4)	NA		
Based upon the Proxy Group of Four Gas Distribution Companies					218.4 % (5)	\$ 583,295 (6)
Based upon the Proxy Group of Three Gas Distribution Companies (11)					207.6 % (5)	\$ 554,451 (6)
Based upon the Proxy Group of Eight Value Line Gas Distribution Companies					205.0 % (7)	\$ 547,507 (8)
Based upon the Proxy Group of Six Value Line Gas Distribution Companies (11)					202.8 % (7)	\$ 541,632 (8)
Based upon Southern Union Company					175.2 % (9)	\$ 467,811 (10)
<u>Proxy Group of Four Gas Distribution Companies</u>						
Cascade Natural Gas Corporation	11,499	\$ 11,138	\$ 128,081	\$ 25.800	231.6 %	\$ 296,674
NICOR Inc.	44,440	18,630	827,900	44.270	237.6	1,967,359
Northwest Natural Gas Company	27,547	22,176	610,876	40,470	182.5	1,114,827
Piedmont Natural Gas Co., Inc	75,346	11,971	902,021	26.570	222.0	2,001,996
Average	39,709	\$ 15,979	\$ 617,220	\$ 34.278	218.4 %	\$ 1,345,214
Average Excluding Cascade Natural (11)	49,112	\$ 17,592	\$ 710,039	\$ 33.773	207.8 %	\$ 1,487,346
<u>Proxy Group of Eight Value Line Gas Distribution Companies</u>						
Cascade Natural Gas Corporation	11,499	\$ 11,138	\$ 128,081	\$ 25,800	231.6 %	\$ 296,674
The Laclede Group, Inc.	21,331	19,075	406,896	33,250	174.3	709,256
New Jersey Resources Corp.	28,074	21,211	595,471	49,900	235.3	1,400,893
NICOR Inc.	44,440	18,630	827,900	44,270	237.6	1,967,359
Northwest Natural Gas Company	27,547	22,176	610,876	40,470	182.5	1,114,827
Peoples Energy Corporation	38,427	21,620	630,796	41,440	191.7	1,592,415
Piedmont Natural Gas Co., Inc	75,348	11,971	902,021	26,570	222.0	2,001,996
WGL Holdings, Inc.	48,762	19,412	946,556	32,030	165.0	1,561,847
Average	36,929	\$ 18,154	\$ 655,073	\$ 36,716	205.0 %	\$ 1,330,668
Average Excluding Cascade Natural and Peoples Energy (11)	40,917	\$ 18,746	\$ 714,952	\$ 37,748	202.8 %	\$ 1,459,383
Southern Union Company	112,030	\$ 15,346	\$ 1,719,179	\$ 26,880	175.2 %	\$ 3,011,366

NA = Not Available

- Notes:
- (1) Column 3 / Column 1.
  - (2) Column 4 / Column 2
  - (3) Column 5 \* Column 3
  - (4) Based upon allocating Missouri Gas Energy's rate base at December 31, 2005 of \$580,601,647 by Mr. Hanley's recommended hypothetical common equity ratio of 46.00%.  $\$267.077 = \$580,601,647 * 46.00\%$
  - (5) The market-to-book ratio of Missouri Gas Energy, at October 13, 2006 is assumed to be equal to the average market-to-book ratio at October 13, 2006 of the proxy group of four gas distribution companies, as well as the proxy group of three gas distribution companies (after the exclusion of Cascade Natural Gas Corporation) as indicated in Note 11 below.
  - (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 October 13, 2006 of the proxy group of four gas distribution companies, 218.4%, and Missouri Gas Energy's market capitalization at October 13, 2006 would therefore have been \$583,296 million ( $\$583,296 = \$267.077 * 218.4\%$ ). If Cascade Natural Gas Corporation were excluded from the proxy group of four LDCs, Missouri Gas Energy's market capitalization at October 13, 2006 would have been \$554,451 million.
  - (7) The market-to-book ratio of Missouri Gas Energy at October 13, 2006 is assumed to be equal to the average market-to-book ratio at October 13, 2006 of the proxy group of eight Value Line gas distribution companies, as well as the proxy group of six Value Line gas distribution companies (after the exclusion of Cascade Natural Gas Corporation and Peoples Energy Corporation) as indicated in Note 11 below.
  - (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 October 13, 2006 of the proxy group of eight Value Line gas distribution companies, 205.0%, and Missouri Gas Energy's market capitalization at October 13, 2006 would therefore have been \$547,507 million ( $\$547,507 = \$267.077 * 205.0\%$ ). If Cascade Natural Gas Corporation and Peoples Energy Corporation were to be excluded from the proxy group of eight Value Line LDCs, Missouri Gas Energy's market capitalization at October 13, 2006 would therefore have been \$541,632 million.
  - (9) The market-to-book ratio of Missouri Gas Energy, at October 13, 2006 is assumed to be equal to the average market-to-book ratio at October 13, 2006 of Southern Union Company.
  - (10) 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 October 13, 2006 of Southern Union Company, 175.2%, and Missouri Gas Energy's market capitalization at October 13, 2006 would therefore have been \$467,811 million. ( $\$467,811 = \$267.077 * 175.2\%$ )
  - (11) Cascade Natural Gas Corporation and Peoples Energy Corporation are currently in the process of being acquired by MDU Resources and WPS Resources, respectively. For informational purposes, the averages excluding Cascade Natural in the proxy group of four LDCs, and Cascade Natural and Peoples Energy in the proxy group of eight Value Line LDCs are being shown

(\*) As of June 30, 2006, except Piedmont Natural Gas which is at July 31, 2006

Source of Information:

Standard & Poor's Compustat Services, Inc., PC Plus/Research Insight Data Base  
Company Annual Forms 10-K and 10-Q  
Source of Information: DTN Trading Markets' DTN/Interquote com

Stocks, Bonds, Bills,  
and Inflation

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2006 Yearbook

**ibbotson**

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# Chapter 7

## Firm Size and Return

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### 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.<sup>1</sup> In this chapter, the returns across the entire range of firm size are examined.

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### 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 Depositary 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.

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### 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 169 stocks, while the smallest decile accounts for just over

<sup>1</sup> 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.

one percent of the market value. The data in the second column of Table 7-1 are averages across all 80 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 2005.

Table 7-1  
Size-Decile Portfolios of the NYSE/AMEX/NASDAQ Size and Composition  
1926 through September 30, 2005

Decile	Historical Average Percentage of Total Capitalization	Recent Number of Companies	Recent Decile Market Capitalization (in thousands)	Recent Percentage of Total Capitalization
1-largest	63.29%	169	\$8,889,801,117	60.92%
2	13.97%	182	2,025,323,685	13.91%
3	7.57%	195	1,074,448,763	7.38%
4	4.74%	206	656,297,080	4.51%
5	3.24%	207	452,329,097	3.11%
6	2.37%	238	389,595,517	2.68%
7	1.73%	299	319,642,175	2.20%
8	1.28%	352	287,783,718	1.98%
9	0.99%	693	268,738,291	1.85%
10-Smallest	0.81%	1,746	216,334,858	1.49%
Mid-Cap 3-5	15.55%	608	2,183,074,940	14.99%
Low-Cap 6-8	5.39%	889	997,021,410	6.85%
Micro-Cap 9-10	1.80%	2,439	485,073,149	3.33%

Source: © 200603 CRSP® Center for Research in Security Prices, Graduate School of Business, The University of Chicago. Used with permission. All rights reserved. [www.crsp.uchicago.edu](http://www.crsp.uchicago.edu).

Historical average percentage of total capitalization shows the average, over the last 80 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, 2005.

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 \$7,187,244,000 but greater than \$1,728,888,000. Low-cap stocks include deciles 6-8 and currently include all companies in the NYSE/AMEX/NASDAQ with market capitalizations at or below \$1,728,888,000 but greater than \$586,393,000. Micro-cap stocks include deciles 9-10 and include companies with market capitalizations at or below \$586,393,000. The market capitalization of the smallest company included in the micro-capitalization group is currently \$1,079,000.

Table 7-2

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, Largest Company and Its Market Capitalization by Decile  
September 30, 2005

Decile	Market Capitalization of Largest Company (in thousands)	Company Name
1-Largest	\$367,495,144	General Electric Co.
2	16,016,450	Entergy Corp.
3	7,187,244	Chesapeake Energy Corp.
4	3,961,425	Ball Corp.
5	2,519,280	Celanese Corp.
6	1,728,888	AGCO Corp.
7	1,280,966	ESCO Technologies Inc.
8	872,103	West Pharmaceutical Services Inc.
9	585,393	General Cable Corp.
10-Smallest	264,981	4Kids Entertainment Inc.

Source: Center for Research in Security Prices, University of Chicago.

## Presentation of the Decile Data

Summary statistics of annual returns of the 10 deciles over 1926-2005 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 two 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 224 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 to 1965

Date (Sept 30)	Capitalization of Largest Company (in thousands)			Capitalization of Smallest Company (in thousands)		
	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	\$61,490	\$14,040	\$4,305	\$14,100	\$4,325	\$43
1927	\$65,281	\$14,746	\$4,450	\$15,311	\$4,496	\$72
1928	\$81,998	\$18,975	\$5,074	\$19,050	\$5,119	\$135
1929	\$107,085	\$24,328	\$5,875	\$24,480	\$5,915	\$126
1930	\$67,808	\$13,050	\$3,219	\$13,058	\$3,264	\$30
1931	\$42,607	\$8,142	\$1,905	\$3,222	\$1,927	\$15
1932	\$12,431	\$2,170	\$473	\$2,196	\$477	\$19
1933	\$40,298	\$7,210	\$1,830	\$7,280	\$1,875	\$100
1934	\$38,129	\$6,669	\$1,669	\$6,734	\$1,673	\$68
1935	\$37,631	\$6,519	\$1,350	\$6,549	\$1,383	\$38
1936	\$46,920	\$11,505	\$2,660	\$11,526	\$2,668	\$98
1937	\$51,750	\$13,601	\$3,500	\$13,635	\$3,539	\$68
1938	\$36,102	\$8,925	\$2,125	\$8,372	\$2,145	\$60
1939	\$35,784	\$7,367	\$1,697	\$7,389	\$1,800	\$75
1940	\$31,050	\$7,990	\$1,861	\$8,007	\$1,872	\$51
1941	\$31,744	\$6,316	\$2,086	\$8,336	\$2,087	\$72
1942	\$26,135	\$6,870	\$1,779	\$6,875	\$1,788	\$82
1943	\$43,218	\$11,475	\$3,847	\$11,480	\$3,903	\$395
1944	\$46,621	\$13,066	\$4,800	\$13,068	\$4,812	\$309
1945	\$55,268	\$17,325	\$6,413	\$17,575	\$6,428	\$225
1946	\$79,158	\$24,192	\$10,013	\$24,199	\$10,051	\$829
1947	\$57,830	\$17,735	\$6,373	\$17,872	\$6,380	\$747
1948	\$67,238	\$19,575	\$7,313	\$19,651	\$7,329	\$784
1949	\$55,506	\$14,549	\$5,037	\$14,577	\$5,108	\$379
1950	\$65,881	\$18,675	\$6,176	\$18,750	\$6,201	\$303
1951	\$82,517	\$22,750	\$7,567	\$22,860	\$7,598	\$668
1952	\$97,936	\$25,452	\$8,428	\$25,532	\$8,480	\$480
1953	\$98,595	\$25,374	\$8,156	\$25,395	\$8,168	\$459
1954	\$125,834	\$29,645	\$8,484	\$29,707	\$8,488	\$463
1955	\$170,829	\$41,445	\$12,353	\$41,681	\$12,366	\$553
1956	\$183,434	\$46,805	\$13,481	\$46,886	\$13,524	\$1,122
1957	\$192,861	\$47,658	\$13,844	\$48,509	\$13,848	\$925
1958	\$195,083	\$46,774	\$13,789	\$46,871	\$13,816	\$550
1959	\$253,644	\$64,221	\$19,500	\$64,372	\$19,548	\$1,804
1960	\$246,202	\$61,485	\$19,344	\$61,529	\$19,385	\$831
1961	\$296,281	\$79,058	\$23,562	\$79,422	\$23,513	\$2,455
1962	\$250,433	\$58,866	\$18,952	\$58,143	\$18,968	\$1,018
1963	\$308,438	\$71,846	\$23,819	\$71,971	\$23,822	\$296
1964	\$344,033	\$79,343	\$25,594	\$79,508	\$25,595	\$223
1965	\$363,759	\$84,479	\$28,365	\$84,600	\$28,375	\$250

Source: Center for Research in Security Prices, University of Chicago.

Firm Size and Return

Table 7-3 (continued)

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

from 1966 to 2005

Date (Sept 30)	Capitalization of Largest Company (in thousands)			Capitalization of Smallest Company (in thousands)		
	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	\$399,455	\$99,578	\$34,884	\$99,935	\$34,966	\$381
1967	\$459,170	\$117,985	\$42,267	\$118,329	\$42,313	\$381
1968	\$528,326	\$149,261	\$60,351	\$150,128	\$60,397	\$592
1969	\$517,452	\$144,770	\$54,273	\$145,684	\$54,280	\$2,119
1970	\$380,246	\$94,025	\$29,910	\$94,047	\$29,916	\$822
1971	\$542,517	\$145,340	\$45,571	\$145,673	\$45,589	\$865
1972	\$545,211	\$139,647	\$46,728	\$139,710	\$48,757	\$1,031
1973	\$424,584	\$94,809	\$29,601	\$95,378	\$29,606	\$561
1974	\$344,013	\$75,272	\$22,475	\$75,853	\$22,481	\$444
1975	\$465,763	\$96,954	\$28,140	\$97,266	\$28,144	\$540
1976	\$551,071	\$116,184	\$31,987	\$116,212	\$32,002	\$564
1977	\$573,084	\$135,804	\$39,192	\$137,323	\$39,254	\$513
1978	\$572,967	\$159,778	\$46,621	\$160,524	\$46,629	\$830
1979	\$661,336	\$174,480	\$49,088	\$174,517	\$49,172	\$948
1980	\$754,562	\$194,012	\$48,671	\$194,241	\$48,953	\$549
1981	\$954,665	\$269,028	\$71,276	\$261,059	\$71,289	\$1,446
1982	\$762,028	\$205,590	\$54,675	\$206,536	\$54,883	\$1,060
1983	\$1,200,680	\$352,698	\$103,443	\$352,944	\$103,530	\$2,025
1984	\$1,068,972	\$314,650	\$90,419	\$315,214	\$90,659	\$2,093
1985	\$1,432,342	\$367,413	\$93,810	\$368,249	\$94,000	\$760
1986	\$1,857,621	\$444,827	\$109,956	\$445,648	\$109,975	\$706
1987	\$2,059,143	\$467,430	\$112,035	\$468,948	\$112,125	\$1,277
1988	\$1,957,926	\$420,257	\$94,268	\$421,340	\$94,302	\$596
1989	\$2,147,608	\$480,975	\$100,285	\$483,623	\$100,384	\$96
1990	\$2,164,185	\$472,003	\$93,627	\$474,065	\$93,750	\$132
1991	\$2,129,863	\$457,958	\$87,586	\$458,853	\$87,733	\$278
1992	\$2,428,671	\$500,346	\$103,352	\$501,050	\$103,500	\$510
1993	\$2,711,068	\$608,520	\$137,945	\$608,825	\$137,987	\$602
1994	\$2,497,073	\$601,552	\$149,435	\$602,552	\$149,532	\$598
1995	\$2,793,761	\$653,178	\$158,011	\$654,019	\$158,063	\$89
1996	\$3,150,685	\$763,377	\$195,188	\$763,812	\$195,326	\$1,043
1997	\$3,511,132	\$818,299	\$230,472	\$821,028	\$230,554	\$480
1998	\$4,216,707	\$934,264	\$253,329	\$936,727	\$253,336	\$1,671
1999	\$4,251,741	\$875,309	\$218,336	\$875,582	\$218,368	\$1,502
2000	\$4,143,902	\$840,000	\$192,598	\$840,730	\$192,721	\$1,462
2001	\$5,252,063	\$1,114,792	\$269,275	\$1,115,200	\$270,391	\$443
2002	\$5,012,705	\$1,143,845	\$314,042	\$1,144,452	\$314,174	\$501
2003	\$4,794,027	\$1,166,799	\$330,608	\$1,167,040	\$330,797	\$332
2004	\$6,241,953	\$1,607,854	\$505,437	\$1,607,931	\$506,410	\$1,393
2005	\$7,187,244	\$1,728,888	\$586,393	\$1,729,354	\$587,243	\$1,079

Source: Center for Research in Security Prices, University of Chicago.

Table 7-4

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, Summary Statistics of Annual Returns 1926-2005

Decile	Geometric Mean	Arithmetic Mean	Standard Deviation	Serial Correlation
1-Largest	9.5	11.3	19.17	0.09
2	10.9	13.2	21.86	0.03
3	11.3	13.8	23.66	-0.02
4	11.3	14.3	25.94	-0.02
5	11.6	14.9	26.78	-0.02
6	11.8	15.3	27.84	0.04
7	11.6	15.6	29.99	0.01
8	11.8	16.6	33.47	0.04
9	12.0	17.5	36.55	0.05
10-Smallest	14.0	21.6	45.44	0.15
Mid-Cap, 3-5	11.4	14.2	24.74	-0.02
Low-Cap, 6-8	11.7	15.7	29.52	0.03
Micro-Cap, 9-10	12.7	18.8	39.16	0.08
NYSE/AMEX/NASDAQ				
Total Value-Weighted Index	10.1	12.0	20.21	0.03

Source: Center for Research in Security Prices, University of Chicago.

### 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.

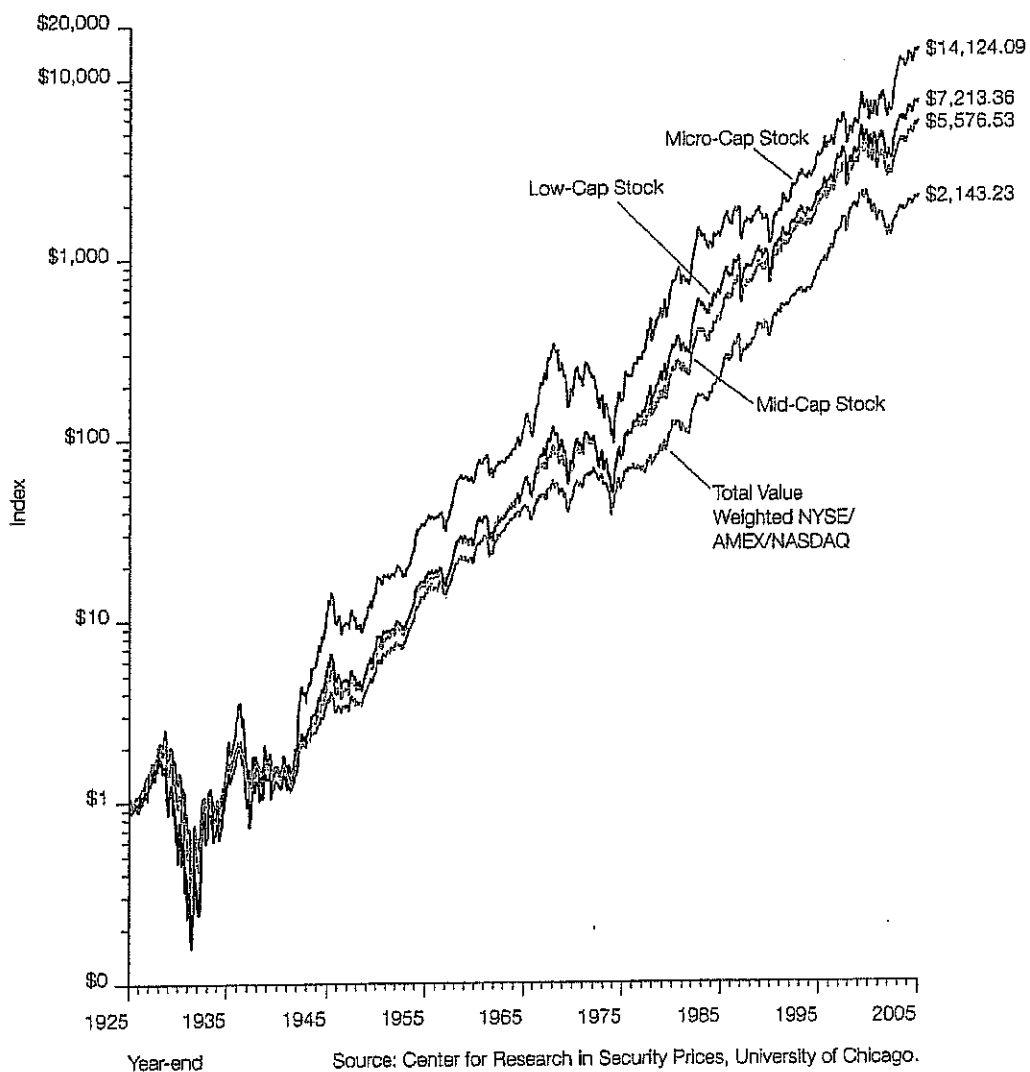
Third, the firm size effect is seasonal. For example, small company stocks outperformed large company stocks in the month of January in a large majority of the years. Such predictability is surprising and suspicious in light of modern capital market theory. These three aspects of the firm size effect—long-term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

Firm Size and Return

Graph 7-1

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ: Wealth Indices of Investments in Mid-, Low-, Micro- and Total Capitalization Stocks  
1925-2005

Year-end 1925 = \$1.00



### 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 80 years for each decile of the NYSE/AMEX/NASDAQ. Recall that the CAPM is expressed as follows:

$$k_s = r_f + (\beta_s \times \text{ERP})$$

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  $\beta$  (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).<sup>2</sup> Beta measures the extent to which a security or portfolio is exposed to systematic risk.<sup>3</sup> 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.

<sup>2</sup> The equity risk premium is estimated by the 80-year arithmetic mean return on large company stocks, 12.30 percent, less the 80-year arithmetic mean income-return component of 20-year government bonds as the historical riskless rate, in this case 5.22 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.

<sup>3</sup> 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 2005. See Chapter 6 for more detail on beta estimation.

Firm Size and Return

Table 7-5

Long-Term Returns in Excess of CAPM Estimation for Decile Portfolios of the NYSE/AMEX/NASDAQ 1926-2005

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	11.29%	6.07%	6.45%	-0.37%
2	1.04	13.22%	8.00%	7.33%	0.67%
3	1.10	13.84%	8.62%	7.77%	0.85%
4	1.13	14.31%	9.09%	7.98%	1.10%
5	1.16	14.91%	9.69%	8.20%	1.49%
6	1.18	15.33%	10.11%	8.38%	1.73%
7	1.23	15.62%	10.40%	8.73%	1.67%
8	1.28	16.60%	11.38%	9.05%	2.33%
9	1.34	17.48%	12.26%	9.50%	2.76%
10-Smallest	1.41	21.59%	16.37%	10.01%	6.36%
Mid-Cap, 3-5	1.12	14.15%	8.94%	7.91%	1.02%
Low-Cap, 6-8	1.22	15.66%	10.44%	8.63%	1.81%
Micro-Cap, 9-10	1.36	18.77%	13.55%	9.61%	3.95%

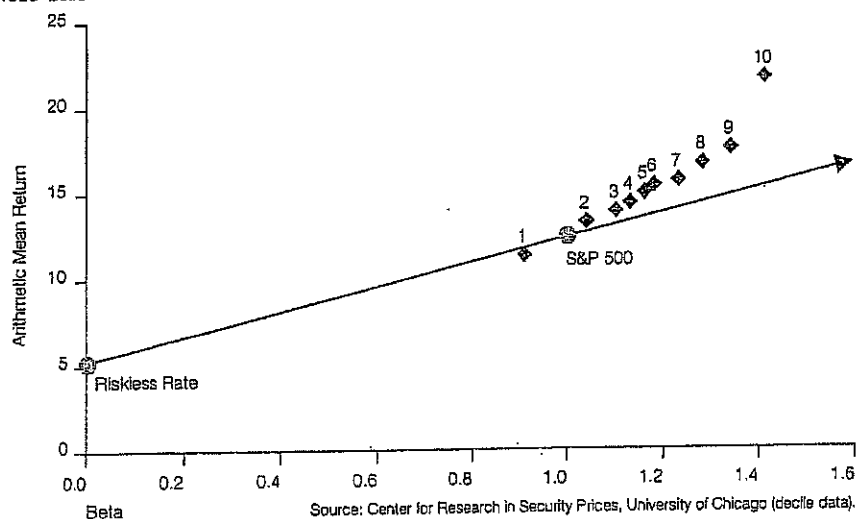
\*Betas are estimated from monthly portfolio total returns in excess of the 30-day U.S. Treasury bill total return versus the S&P 500 total returns in excess of the 30-day U.S. Treasury bill, January 1926-December 2005.

\*\*Historical riskless rate is measured by the 80-year arithmetic mean income return component of 20-year government bonds (5.22 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 (12.30 percent) minus the arithmetic mean income return component of 20-year government bonds (5.22 percent) from 1926-2005.

Graph 7-2

Security Market Line versus Size-Decile Portfolios of the NYSE/AMEX/NASDAQ 1926-2005



**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, 2005

Decile	Recent Number of Companies	Recent Decile Market Capitalization (in thousands)	Market Capitalization of Largest Company (in thousands)	Company Name
10a	483	\$108,194,821	\$264,981	4Kids Entertainment Inc.
10b	1,279	\$102,157,012	\$169,195	Quaker Chemical Corp.

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

Source: Center for Research in Security Prices, University of Chicago.

Firm Size and Return

Table 7-7

Long-Term Returns in Excess of CAPM Estimation for Decile Portfolios of the NYSE/AMEX/NASDAQ, with 10th Decile Split 1926-2005

	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	11.29%	6.07%	6.45%	-0.37%
2	1.04	13.22%	8.00%	7.33%	0.67%
3	1.10	13.84%	8.62%	7.77%	0.85%
4	1.13	14.31%	9.09%	7.98%	1.10%
5	1.16	14.91%	9.69%	8.20%	1.49%
6	1.18	15.33%	10.11%	8.38%	1.73%
7	1.23	15.62%	10.40%	8.73%	1.67%
8	1.28	16.60%	11.38%	9.05%	2.33%
9	1.34	17.46%	12.26%	9.50%	2.76%
10a	1.43	19.71%	14.49%	10.10%	4.39%
10b-Smallest	1.39	24.87%	19.65%	9.82%	9.83%
Mid-Cap, 3-5	1.12	14.15%	8.94%	7.91%	1.02%
Low-Cap, 6-8	1.22	15.66%	10.44%	8.63%	1.81%
Micro-Cap, 9-10	1.36	18.77%	13.55%	9.61%	3.95%

\*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 2005.

\*\*Historical riskless rate is measured by the 80-year arithmetic mean income return component of 20-year government bonds (5.22 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 (12.30 percent) minus the arithmetic mean income return component of 20-year government bonds (5.22 percent) from 1926-2005.

Graph 7-3

Security Market Line versus Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, with 10th Decile Split 1926-2005

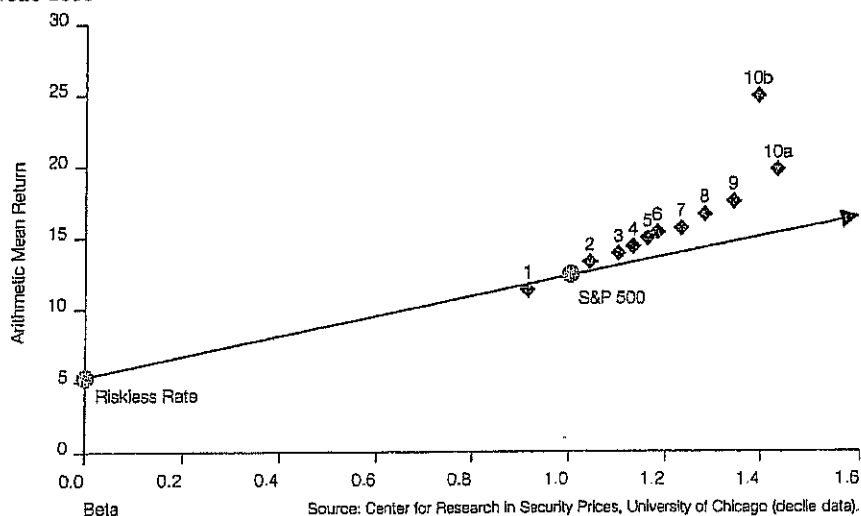




Table 7-8  
Historical Number of Companies for NYSE/AMEX/NASDAQ Decile 10

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

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

Source: Center for Research in Security Prices, University of Chicago.

### 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.<sup>4</sup>

#### 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, 1926-2005, 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 6.33, as opposed to 7.08 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.

Missouri Gas Energy  
Indicated Common Equity Cost Rate through the use  
of the Discounted Cash Flow Model for the Proxy Group of Four Gas Distribution Companies,  
Proxy Group of Eight Value Line Gas Distribution Companies  
and Southern Union Company

	1	2	3	4	5	6
	Dividend Yield	Dividend Growth Component	Adjusted Dividend Yield	Growth Rate	Indicated DCF Return Rate	Recommended DCF Return Rate
	(1)	(2)	(3)	(4)	(5)	(6)
<u>Proxy Group of Four Gas Distribution Companies</u>						
Cascade Natural Gas Corporation	3.72 %	0.11 %	3.83	6.00 %	9.83 %	9.83 %
NICOR Inc	4.27	0.07	4.34	3.50	7.84	--
Northwest Natural Gas Company	3.58	0.11	3.69	6.00	9.69	9.69
Piedmont Natural Gas Co., Inc	3.70	0.09	3.79	5.00	8.79	--
Average	<u>3.82 %</u>	<u>0.10 %</u>	<u>3.91 %</u>	<u>5.13 %</u>	<u>9.04 %</u>	<u>9.76 %</u>
DCF Results Adjusted for Financial Leverage					<u>9.96 % (7)</u>	<u>10.89 % (7)</u>
						<u>10.85 % (8)</u>
Average Excluding Cascade Natural (10)	<u>3.85 %</u>	<u>0.09 %</u>	<u>3.94 %</u>	<u>4.83 %</u>	<u>8.77 %</u>	<u>9.69 %</u>
DCF Results Adjusted for Financial Leverage					<u>9.56 % (7)</u>	<u>10.72 % (7)</u>
						<u>10.50 % (8)</u>
<u>Proxy Group of Eight Value Line Gas Distribution Companies</u>						
Cascade Natural Gas Corporation	3.72 %	0.11 %	3.83	6.00 %	9.83 %	9.83 %
The Laclede Group, Inc.	4.35	0.11	4.46	5.00	9.46	9.46
New Jersey Resources Corp.	2.91	0.07	2.98	4.75	7.73	--
NICOR Inc.	4.27	0.07	4.34	3.50	7.84	--
Northwest Natural Gas Company	3.58	0.11	3.69	6.00	9.69	9.69
Peoples Energy Corporation	5.23	0.13	5.36	4.90	10.26	10.26
Piedmont Natural Gas Co., Inc	3.70	0.09	3.79	5.00	8.79	--
WGL Holdings, Inc.	4.35	0.05	4.40	2.50	6.90	--
Average	<u>4.01 %</u>	<u>0.09 %</u>	<u>4.11 %</u>	<u>4.71 %</u>	<u>8.81 %</u>	<u>9.81 %</u>
DCF Results Adjusted for Financial Leverage					<u>9.58 % (7)</u>	<u>10.85 % (7)</u>
						<u>10.82 % (9)</u>
Average Excluding Cascade Natural and Peoples Energy (10)	<u>3.85 %</u>	<u>0.08 %</u>	<u>3.94 %</u>	<u>4.46 %</u>	<u>8.40 %</u>	<u>9.58 %</u>
DCF Results Adjusted for Financial Leverage					<u>9.04 % (7)</u>	<u>10.53 % (7)</u>
						<u>10.40 % (9)</u>
<u>Southern Union Company</u>	<u>3.86 %</u>	<u>0.17 %</u>	<u>4.03 %</u>	<u>9.00 %</u>	<u>13.03 %</u>	<u>13.03 %</u>
DCF Results Adjusted for Financial Leverage						<u>15.18 % (7)</u>

Notes: (1) From page 2 of this Schedule.

(2) This reflects a growth rate component equal to one-half the average projected five-year growth rate in EPS (from page 3 of this Schedule x Line No. 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment. Thus, for Cascade Natural Gas  $3.72\% \times (1/2 \times 6.00\%) = 0.11\%$ .

(3) Column 1 + Column 2.

(4) From page 3 of this Schedule.

(5) Column 3 + Column 4.

(6) Includes only those indicated common equity cost rates which are greater than 9.45% (the lowest rate awarded to a gas distribution utility between January 1, 2004 and December 31, 2005, from Schedule FJH-17 of the Exhibit accompanying Mr. Hanley's direct testimony) as fully explained in Mr. Hanley's direct testimony.

(7) Based upon the adjustment described in note 5 on pages 4 through 6 of Schedule FJH-26 of this Exhibit.

(8) Based upon the adjustment described in note 5 on pages 4 through 6 of Schedule FJH-26 of this Exhibit, using the market value and book value capital structure of Cascade Natural Gas Corp. and Northwest Natural Gas Co. at September 30, 2005 and December 2005, as shown on page 7 of Schedule FJH-26 of this Exhibit.

(9) Based upon the adjustment described in note 5 on pages 4 through 6 of Schedule FJH-26 of this Exhibit, using the average market value and average book value capital structure of Cascade Natural Gas Corp., The Laclede Group, Inc. and Northwest Natural Gas Co. at September 30, 2005 for Cascade and Laclede, and at December 2005 for Northwest Natural, as can be gleaned from the information shown on pages 8 and 9 of Schedule FJH-26 of this Exhibit.

(10) Cascade Natural Gas Corporation and Peoples Energy Corporation are currently in the process of being acquired by MDU Resources and WPS Resources, respectively. For informational purposes, the averages excluding Cascade Natural in the proxy group of four LDCs, and Cascade Natural and Peoples Energy in the Proxy Group of eight Value Line LDCs are being shown.

Missouri Gas Energy  
Derivation of Dividend Yield for Use in the  
Discounted Cash Flow Model

		Dividend Yield		
	Spot	Average Based Upon Average High / Low		Average
	(10/13/06) (1)	Market Prices (2)		Dividend
		September 2006	August 2006	Yield (3)
Proxy Group of Four				
<u>Gas Distribution Companies</u>				
Cascade Natural Gas Corporation	3.72 %	3.71 %	3.72 %	3.72 %
NICOR Inc.	4.20 %	4.32 %	4.29 %	4.27
Northwest Natural Gas Company	3.51 %	3.55 %	3.67 %	3.58
Piedmont Natural Gas Co., Inc.	3.61 %	3.75 %	3.75 %	3.70
Average	<u>3.76 %</u>	<u>3.83 %</u>	<u>3.86 %</u>	<u>3.82 %</u>
Average Excluding Cascade Natural (4)	<u>3.77 %</u>	<u>3.87 %</u>	<u>3.90 %</u>	<u>3.85 %</u>
Proxy Group of Eight Value Line				
<u>Gas Distribution Companies</u>				
Cascade Natural Gas Corporation	3.72 %	3.71 %	3.72 %	3.72 %
The Laclede Group, Inc.	4.27 %	4.40 %	4.38 %	4.35
New Jersey Resources Corp.	2.89 %	2.91 %	2.92 %	2.91
NICOR Inc.	4.20 %	4.32 %	4.29 %	4.27
Northwest Natural Gas Company	3.51 %	3.55 %	3.67 %	3.58
Peoples Energy Corporation	5.26 %	5.30 %	5.13 %	5.23
Piedmont Natural Gas Co., Inc.	3.61 %	3.75 %	3.75 %	3.70
WGL Holdings, Inc.	4.21 %	4.38 %	4.49 %	4.35
Average	<u>3.96 %</u>	<u>4.04 %</u>	<u>4.04 %</u>	<u>4.01 %</u>
Average Excluding Cascade Natural and Peoples Energy (4)	<u>3.93 %</u>	<u>4.05 %</u>	<u>4.09 %</u>	<u>4.02 %</u>
Southern Union Company	<u>3.78 %</u>	<u>3.88 %</u>	<u>3.92 %</u>	<u>3.86 %</u>

- Notes: (1) The spot dividend yield is the current annualized dividend per share divided by the spot market price on 10/13/06. The dividend yield was calculated by using finance.yahoo.com and interquote.com and DTN Trading Market's DTNIQ/Interquote.com
- (2) The average 3-month dividend yield was computed by relating the indicated annualized dividend rate and market price on the last trading day of each of the two months ended September 2006.
- (3) Equal weight has been given to the spot, August 2006 and September 2006 dividend yield.
- (4) Cascade Natural Gas Corporation and Peoples Energy Corporation are currently in the process of being acquired by MDU Resources and WPS Resources, respectively. For informational purposes, the averages excluding Cascade Natural in the Proxy Group of four LDCs, and Cascade Natural and Peoples Energy in the Proxy Group of eight Value Line LDCs are being shown.

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus/Research Insight Data Base  
DTN Trading Markets' DTNIQ/Interquote.com  
<http://finance.yahoo.com>

Missouri Gas Energy  
Development of Projected Growth for Use in the Discounted Cash Flow Model

	1	2	3
	Value Line Projected 2009-11 Growth Rate in EPS (1)	Thomson FN / First Call Projected Median Five-Year Growth Rate in EPS (# est.)	Average Projected Five-Year Growth Rate in EPS (2)
<u>Proxy Group of Four Gas Distribution Companies</u>			
Cascade Natural Gas Corporation	9.00 %	3.00 % [1]	6.00 %
NICOR Inc.	4.00	3.00 [3]	3.50
Northwest Natural Gas Company	7.00	5.00 [5]	6.00
Piedmont Natural Gas Co., Inc.	6.00	4.00 [2]	5.00
Average	<u>6.50 %</u>	<u>3.75 %</u>	<u>5.13 %</u>
Average Excluding Cascade Natural (4)	<u>5.67 %</u>	<u>4.00 %</u>	<u>4.83 %</u>
<u>Proxy Group of Eight Value Line Gas Distribution Companies</u>			
Cascade Natural Gas Corporation	9.00 %	3.00 % [1]	6.00 %
The Laclede Group, Inc.	5.00	NA	5.00
New Jersey Resources Corp.	4.50	5.00 [4]	4.75
NICOR Inc.	4.00	3.00 [3]	3.50
Northwest Natural Gas Company	7.00	5.00 [5]	6.00
Peoples Energy Corporation	NMF	4.90 [1]	4.90
Piedmont Natural Gas Co., Inc.	6.00	4.00 [2]	5.00
WGL Holdings, Inc.	1.50	3.50 [4]	2.50
Average	<u>5.29 %</u>	<u>4.06 %</u>	<u>4.71 %</u>
Average Excluding Cascade Natural and Peoples Energy (4)	<u>4.67 %</u>	<u>4.10 %</u>	<u>4.46 %</u>
<u>Southern Union Company</u>	<u>12.00 %</u>	<u>8.00 %</u> [4]	<u>9.00 %</u> (3)

- Notes: (1) From pages 4 through 12 of this Schedule.  
(2) Average of Columns 1 and 2.  
(3) Weighted in approximation to individual and institutional holdings from Schedule FJH-11 of the Exhibit accompanying Mr. Hanley's direct testimony - namely 25% to Value Line (greater reliance by individuals) and ThomsonFN/First Call (greater reliance by institutions).  
(4) Cascade Natural Gas Corporation and Peoples Energy Corporation are currently in the process of being acquired by MDU Resources and WPS Resources, respectively. For informational purposes, the averages excluding Cascade Natural in the Proxy Group of four LDCs, and Cascade Natural and Peoples Energy in the Proxy Group of eight Value Line LDCs are being shown.

Source of Information: Value Line Investment Survey, (Standard Edition), September 15, 2006  
ThomsonFN First Call Earnings, thomsonfn.com, updated October 14, 2006

CASCAD NAT'L GAS NYSE:CGC										RECENT PRICE	25.55	P/E RATIO	23.2	(Trailing: 21.0 Median: 18.0)	RELATIVE P/E RATIO	1.36	OWN'D YLD	3.8%	VALUE LINE										
TIMELINESS - Suspended 7/27/06										High	17.5	17.5	19.0	18.7	19.8	20.9	22.8	24.2	22.0	23.0	22.8	26.3	Target Price Range	2009	2010	2011			
SAFETY 3 Item 7/27/06										Low	13.0	13.4	15.3	14.6	14.4	13.4	17.4	15.5	18.0	19.1	18.0	19.0							
TECHNICAL - Suspended 7/27/06										LEGENDS										1/3 x Dividends p sh					divided by interest rate				
BETA .55 (1.00 = Market)										Relative Price Strength										24hr-2 split 12/03					Options No				
2009-11 PROJECTIONS										Shaded Area indicates recession																			
Price Gain Ann'l Total										Insider Decisions										D H O J F M A M J					Buy				
High 3D (+15%) 7%										Options										Call Put					Buy Sell				
Low 3D (-15%) 7%										Institutional Decisions										4/20/06 12/20/06 2/20/06					Buy				
										Percent shares traded										34 47 53					Buy Sell				
																				4655 4911 5297					Buy Sell				

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NEW JERSEY RES. NYSE: NJR

RECENT PRICE 49.55

P/E RATIO 20.6

(Trading: 16.2) (Market: 15.0)

RELATIVE P/E RATIO 1.21

DIVID YLD 2.09%

VALUE LINE 100

TIMELINESS 4

Revised 2/17/06

SAFETY 1

Revised 8/15/06

TECHNICAL 2

Revised 8/25/06

BETA .80

(1.00 = Market)

2009-11 PROJECTIONS

Price Gain Return

High 88 2070 100%

Low 80 36 8%

Insider Decisions

D N D J F M A M J

to Buy 0

to Sell 1 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

to Hold 1 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Institutional Decisions

400% 100% 100%

Percent shares traded 7.5 5 2.5

1999 1999 1999 1999 1999 1999 1999 1999 1999 1999 1999 1999 1999 1999 1999 1999 1999 1999 1999 1999

16.01 15.99 16.88 16.02 19.22 17.03 20.22 25.97 26.59 33.98 44.13 76.82 66.17 93.43 91.33 114.29 177.45 120.60

1.54 1.55 1.15 2.14 2.31 2.18 2.22 2.45 2.60 2.79 2.99 3.16 3.21 3.58 3.75 3.92 4.00 4.20

.65 .55 1.09 1.15 1.29 1.29 1.37 1.46 1.55 1.66 1.79 1.95 2.09 2.38 2.55 2.65 2.80 2.90

.56 1.20 1.01 1.01 1.01 1.91 1.03 1.07 1.09 1.12 1.15 1.17 1.20 1.24 1.30 1.36 1.45 1.50

4.37 2.99 1.99 2.31 2.10 1.77 1.78 1.72 1.60 1.81 1.85 1.66 1.53 1.71 2.17 1.92 1.80 1.55

6.85 8.57 8.44 9.51 9.54 9.70 10.10 10.38 10.88 11.25 12.43 13.20 13.05 15.38 16.67 16.50 17.45 18.80

20.26 20.95 24.43 25.23 25.65 26.68 27.13 26.32 26.72 28.61 28.39 26.66 27.27 27.24 27.55 28.70 28.20 28.50

24.0 22.3 12.4 15.1 13.0 11.7 13.5 13.5 16.3 16.2 14.7 14.2 14.7 14.0 15.3 16.8 15.0 15.0

1.78 1.22 76 .89 .85 .78 .85 .70 .80 .67 .96 .73 .80 .80 .81 .80 1.13

6.2% 8.1% 7.5% 5.6% 6.2% 6.7% 5.6% 5.3% 4.6% 4.5% 4.4% 4.2% 3.9% 3.7% 3.3% 3.1% 3.0% 3.0%

CAPITAL STRUCTURE as of 6/30/06

Total Debt \$490.8 mil. Due in 5 Yrs \$250.0 mil.

LT Debt \$333.8 mil. LT Interest \$22.0 mil.

incl. \$6.9 mil. capitalized leases.

(LT Interest earned: 5.6x total interest coverage: 4.8x)

Pension Assets \$405 \$82.6 mil.

Oblig. \$99.9 mil.

Fid Stock Note

Common Stock 29,200,314 shs.

as of 8/8/06

MARKET CAP: \$14 billion (Mid Cap)

CURRENT POSITION

2004 2005 6/30/06

Cash Assets 5.0 25.0 4.7

Current Assets 661.0 827.8 808.7

Current Liab. 687.7 976.3 705.4

Fic. Curr. Cov. 626% 660% 700%

ANNUAL RATES

1999 2000 2001 2002 2003 2004 2005 2006 2007

Revenues 16.5% 23.5% 4.5%

"Cash Flow" 8.5% 6.0% 4.0%

Earnings 7.5% 8.5% 4.5%

Dividends 2.5% 3.0% 6.5%

Book Value 5.0% 7.0% 6.5%

QUARTERLY REVENUES (\$ mil.)

Fiscal Year

2003 2004 2005 2006 2007

Q1 666.9 1152.7 368.7 353.1 2544.4

Q2 643.0 1037.7 438.5 414.4 2533.6

Q3 654.0 1067.1 544.3 584.9 3148.3

Q4 104.6 1064.4 536.1 534.9 3309.0

2008 108.5 510 610 553 3400

EARNINGS PER SHARE \$

Fiscal Year

2003 2004 2005 2006 2007

Q1 .25 1.50 .16 0.13 2.36

Q2 .67 1.82 .08 0.20 2.53

Q3 .91 1.84 .07 0.17 2.65

Q4 1.23 2.14 0.14 0.43 2.80

2008 1.13 1.84 .10 0.17 2.90

QUARTERLY DIVIDENDS PAID \$

Fiscal Year

2003 2004 2005 2006 2007

Q1 .30 .30 .30 .30 .30

Q2 .31 .31 .31 .31 .31

Q3 .325 .325 .325 .325 .325

Q4 .34 .34 .34 .34 .34

2008 .35 .35 .35 .35 .35

Cal-end

Mar 21 Jun 30 Sep 30 Dec 31

Full Year

2002 2003 2004 2005 2006 2007 2008

1.20 1.24 1.30 1.36 1.20 1.24 1.30 1.36

1999 1999 1999 1999 1999 1999 1999 1999 1999 1999 1999 1999 1999 1999 1999 1999 1999 1999 1999 1999

542.5 696.5 710.3 904.3 1184.5 2043.4 1830.8 2544.4 2533.5 3148.3 3300 3400

38.7 41.5 43.3 44.9 47.9 52.3 56.8 65.4 71.5 74.4 82.0 82.0

32.5% 33.3% 30.4% 36.2% 37.5% 38.0% 38.7% 38.4% 39.1% 38.1% 39.6% 39.6%

7.1% 6.0% 6.1% 5.0% 4.1% 2.6% 3.1% 2.6% 2.8% 2.4% 2.4%

50.7% 49.3% 51.2% 48.7% 47.8% 50.1% 50.6% 50.1% 40.3% 42.0% 42.0%

45.9% 47.1% 45.6% 51.2% 52.9% 48.9% 49.4% 61.9% 63.7% 58.0% 58.0%

695.2 696.4 660.0 705.4 730.6 743.9 756.4 652.6 688.4 905.1 935 970

8.1% 8.6% 8.1% 8.0% 8.0% 8.5% 8.7% 10.7% 10.1% 11.2% 10.5%

13.1% 13.3% 13.9% 14.8% 14.8% 14.8% 15.7% 15.6% 15.3% 17.0% 16.0%

13.5% 14.3% 14.4% 14.8% 14.6% 14.9% 15.7% 15.6% 15.3% 17.0% 16.0%

3.4% 4.0% 4.4% 5.0% 5.4% 6.1% 6.9% 7.7% 7.6% 8.5% 8.0%

76% 73% 71% 67% 63% 55% 56% 51% 49% 50% 52% 52%

BUSINESS: New Jersey Resources Corp. is the holding company for New Jersey Natural Gas Co., a natural gas utility (about 463,000 customers at 9/30/05) in Monmouth, Ocean, and parts of other N.J. counties. Fiscal 2005 volume: 124.7 bbl. cu. ft. (60% firm, 8% interruptible industrial and electric utility, 42% oil-refinery and capacity release). New Jersey Natural Energy subsid. provides unregulated retail and wholesale natural gas and related energy services to customers in 17 states. 2005 deprec. rate: 2.8%. Est'd plant agn: 8 years. Has 551 utility employees, 16,300 stockholders. Off. & dir. own about 3% of common stock (12/05 Proxy). Chairman and CEO: Laurence M. Downes, Inc. N.J. Address: 1415 Wyckoff Road, West, NJ 07719. Tel: 732-938-1000. Internet: www.njrliving.com.

for, in December, NJNG proposed a plan with the New Jersey Board of Public utilities to implement a conservation usage adjustment (CUA) plan to replace the normalization policy, which would provide protection against both temperature and usage changes. Management remains optimistic that the program will be approved and be in place by next winter's heating season. However, should regulatory approval not be granted, the company is exploring alternatives that includes filing for a rate increase. Meanwhile, the utility added about 7,870 new customers through the third quarter, and will likely grow at a rate above the industry average for the next few years thanks to the strong demographics of the region NJNG serves. About a third of new customers are conversions from other fuel sources. Though untimely, this stock offers decent total return potential. This is largely due to expanding profits from its nonutility operations. Other pluses include the likelihood of a more consistent earnings stream through the CUA proposal, and steady dividend increases.

Evan I. Blatter September 15, 2006

(A) Fiscal year ends Sept. 30th.

(B) Divided earnings. Next earnings report due late Oct.

(C) Dividends historically paid in early January.

(D) In millions, adjusted for split.

Company's Financial Strength A

Stocks Price Stability 100

Price Growth Persistence 85

Earnings Predictability 100

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NICOR, INC. NYSE-GAS										RECENT PRICE	43.05	P/E RATIO	17.2	Trailing: 18.5 Median: 14.0	RELATIVE P/E RATIO	1.01	DIV YLD	4.3%	VALUE LINE							
										High	26.5	37.1	42.9	44.4	42.9	43.5	42.4	49.0	39.3	39.7	43.0	44.4	Target Price Range	2009	2010	2011
										Low	21.6	25.4	30.0	37.1	31.2	29.4	34.0	17.3	23.7	32.0	35.5	38.7				
										LEGENDS																
										1.30 x Dividends p sh divided by Market Rate																
										Relative Price Strength																
										2-for-1 split 4/93																
										Options: Yes																
										Shaded area indicates recession																



(A) Divided earnings per share. Excludes non-recurring gain: '98, \$0.15; '00, \$0.11. Next earnings report due early November.	mid-May, mid-August, and mid-November. • Div'd reinvestment plan available. • Div'd in millions, adjusted for stock split.	Company's Financial Strength Stock Price Stability Price Growth Persistence Earnings Predictability	A 100 55 75
---	--	--	----------------------

PEOPLES ENERGY NYSE:PGL										RECENT PRICE	41.41	PE RATIO	31.9 (Trading: 23.9 Median: 14.0)	RELATIVE P/E RATIO	1.88 (VLD 5.3%)	VALUE LINE						
TIMELINESS - 6 Sept. 10/10										High: 42.0	37.4	39.9	40.1	40.3	45.9	44.5	40.4	45.3	46.0	45.5	43.9	Target Price Range
SAFETY 2 Unrecorded 10/10										Low: 24.3	29.6	31.3	32.1	31.8	28.2	34.3	27.8	38.5	35.5	34.9	2009 2010 2011	
TECHNICAL - 6 Sept. 10/10										LEGENDS 1.2 x 10 indicates 1st divided by Interest Rate ... Relative Price Strength Options: Yes Shaded area indicates recession												
BETA .85 (1.00 = Market)										2009-11 PROJECTIONS												
Price Gain Ann'l Total										High 40 (-5%) 4%												
Low 30 (-30%) -2%										Insider Decisions												
to Buy 0 1 0 0 0 0 0 0 0										to Buy 0 1 0 0 0 0 0 0 0												
to Sell 0 0 0 0 0 0 0 0 0										to Sell 0 0 0 0 0 0 0 0 0												
Institutional Decisions										to Buy 42205 102005 702005												
to Sell 92 78 83										to Sell 92 78 83												
Net Buy 21830 24457 25674										Net Buy 21830 24457 25674												
Percent shares traded 12										Percent shares traded 12												
4										4												
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007										1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007												
35.63 33.69 31.54 36.09 36.70 29.60 34.28 36.34 32.28 33.66 40.16 64.13 41.81 58.28 59.99 65.13 76.90 72.75										35.63 33.69 31.54 36.09 36.70 29.60 34.28 36.34 32.28 33.66 40.16 64.13 41.81 58.28 59.99 65.13 76.90 72.75												
3.74 3.73 3.67 3.85 3.99 3.68 4.98 4.92 4.44 4.74 5.58 5.84 5.59 5.88 5.32 5.31 4.35 4.50										3.74 3.73 3.67 3.85 3.99 3.68 4.98 4.92 4.44 4.74 5.58 5.84 5.59 5.88 5.32 5.31 4.35 4.50												
2.07 2.05 2.06 2.11 2.13 1.78 2.96 2.81 2.25 2.39 2.71 3.16 2.80 2.88 2.18 2.26 1.25 1.50										2.07 2.05 2.06 2.11 2.13 1.78 2.96 2.81 2.25 2.39 2.71 3.16 2.80 2.88 2.18 2.26 1.25 1.50												
1.65 1.71 1.76 1.78 1.80 1.80 1.82 1.87 1.91 1.95 2.00 2.04 2.07 2.12 2.16 2.18 2.18 2.18										1.65 1.71 1.76 1.78 1.80 1.80 1.82 1.87 1.91 1.95 2.00 2.04 2.07 2.12 2.16 2.18 2.18 2.18												
3.15 3.10 3.40 3.77 2.59 2.76 2.45 2.55 4.05 6.45 7.02 7.52 5.65 6.10 5.02 4.27 5.55 6.90										3.15 3.10 3.40 3.77 2.59 2.76 2.45 2.55 4.05 6.45 7.02 7.52 5.65 6.10 5.02 4.27 5.55 6.90												
16.61 15.95 17.72 16.02 18.39 18.38 19.49 20.43 21.03 21.66 22.02 22.76 22.74 23.11 23.06 20.97 19.60 18.40										16.61 15.95 17.72 16.02 18.39 18.38 19.49 20.43 21.03 21.66 22.02 22.76 22.74 23.11 23.06 20.97 19.60 18.40												
32.70 32.76 34.77 34.88 34.81 34.51 34.96 35.07 35.26 35.49 35.30 35.40 35.46 35.89 37.73 38.16 38.00 40.00										32.70 32.76 34.77 34.88 34.81 34.51 34.96 35.07 35.26 35.49 35.30 35.40 35.46 35.89 37.73 38.16 38.00 40.00												
11.2 11.8 13.1 15.0 13.3 14.7 10.7 12.7 15.2 15.5 12.1 12.3 13.3 13.4 18.1 16.9 16.9										11.2 11.8 13.1 15.0 13.3 14.7 10.7 12.7 15.2 15.5 12.1 12.3 13.3 13.4 18.1 16.9 16.9												
.53 .75 .79 .89 .87 .98 .57 .73 .84 .88 .79 .63 .73 .76 1.01 1.01 1.01										.53 .75 .79 .89 .87 .98 .57 .73 .84 .88 .79 .63 .73 .76 1.01 1.01 1.01												
7.1% 7.0% 6.5% 5.6% 6.3% 6.9% 5.7% 5.2% 5.2% 5.3% 6.1% 5.2% 5.5% 5.5% 5.2% 5.1% 5.1%										7.1% 7.0% 6.5% 5.6% 6.3% 6.9% 5.7% 5.2% 5.2% 5.3% 6.1% 5.2% 5.5% 5.5% 5.2% 5.1% 5.1%												
CAPITAL STRUCTURE as of 6/30/06										CAPITAL STRUCTURE as of 6/30/06												
Total Debt \$1065.0 mil. Due in 5 Yrs \$546.4 mil.										Total Debt \$1065.0 mil. Due in 5 Yrs \$546.4 mil.												
LT Debt \$893.6 mil. LT Interest \$80.0 mil.										LT Debt \$893.6 mil. LT Interest \$80.0 mil.												
(Total Interest coverage: 1.4x)										(Total Interest coverage: 1.4x)												
Pension Assets \$105 \$20.4 mil.										Pension Assets \$105 \$20.4 mil.												
Oblig. \$841.7 mil.										Oblig. \$841.7 mil.												
Pfd Stock None										Pfd Stock None												
Common Stock 38,471,441 shs.										Common Stock 38,471,441 shs.												
as of 7/31/06										as of 7/31/06												
MARKET CAP: \$1.6 billion (Mid Cap)										MARKET CAP: \$1.6 billion (Mid Cap)												
CURRENT POSITION 2004 2005 6/30/06										CURRENT POSITION 2004 2005 6/30/06												
(MILL.)										(MILL.)												
Cash Assets 21.1 43.5 157.0										Cash Assets 21.1 43.5 157.0												
Other 531.3 855.1 171.0										Other 531.3 855.1 171.0												
Current Assets 552.4 898.6 872.1										Current Assets 552.4 898.6 872.1												
Accts Payable 144.7 236.2 198.5										Accts Payable 144.7 236.2 198.5												
Debt Due 65.6 8.1 171.4										Debt Due 65.6 8.1 171.4												
Other 336.8 667.2 506.9										Other 336.8 667.2 506.9												
Current Liab. 538.1 911.7 895.6										Current Liab. 538.1 911.7 895.6												
Fix. Chg. Coy. 304% 332% 176%										Fix. Chg. Coy. 304% 332% 176%												
ANNUAL RATES Past Past Est'd '09-'10										ANNUAL RATES Past Past Est'd '09-'10												
of change (per sh) 10 Yrs 5 Yrs to '09-'10										of change (per sh) 10 Yrs 5 Yrs to '09-'10												
Revenues 6.0% 12.0% 5.0%										Revenues 6.0% 12.0% 5.0%												
'Cash Flow' 3.5% 2.0% NMF										'Cash Flow' 3.5% 2.0% NMF												
Earnings 2.0% .. NMF										Earnings 2.0% .. NMF												
Dividends 2.0% 2.0% NMF										Dividends 2.0% 2.0% NMF												
Book Value 2.0% 0.5% NMF										Book Value 2.0% 0.5% NMF												
QUARTERLY REVENUES (\$ mil.)										QUARTERLY REVENUES (\$ mil.)												
Fiscal Year Dec.31 Mar.31 Jun.30 Sep.30 Full Fiscal Year										Fiscal Year Dec.31 Mar.31 Jun.30 Sep.30 Full Fiscal Year												
2003 549.2 903.8 388.1 287.3 2138.4										2003 549.2 903.8 388.1 287.3 2138.4												
2004 604.9 927.0 401.1 327.2 2260.2										2004 604.9 927.0 401.1 327.2 2260.2												
2005 737.4 1026.9 455.9 379.4 2596.6										2005 737.4 1026.9 455.9 379.4 2596.6												
2006 1062.4 1180.0 400.4 357.2 3999.0										2006 1062.4 1180.0 400.4 357.2 3999.0												
2007 1160 1225 425 460 3750										2007 1160 1225 425 460 3750												
EARNINGS PER SHARE \$										EARNINGS PER SHARE \$												
Fiscal Year Dec.31 Mar.31 Jun.30 Sep.30 Full Fiscal Year										Fiscal Year Dec.31 Mar.31 Jun.30 Sep.30 Full Fiscal Year												
2003 .57 1.77 .22 .04 2.88										2003 .57 1.77 .22 .04 2.88												
2004 .85 1.46 .15 .07 2.18										2004 .85 1.46 .15 .07 2.18												
2005 .77 1.37 .18 .06 2.26										2005 .77 1.37 .18 .06 2.26												
2006 .93 1.12 .32 .08 1.25										2006 .93 1.12 .32 .08 1.25												
2007 .95 1.15 .42 .04 1.50										2007 .95 1.15 .42 .04 1.50												
QUARTERLY DIVIDENDS PAID \$										QUARTERLY DIVIDENDS PAID \$												
Cal-ender Mar.31 Jun.30 Sep.30 Dec.31 Full Year										Cal-ender Mar.31 Jun.30 Sep.30 Dec.31 Full Year												
2002 .51 .52 .52 .52 2.07										2002 .51 .52 .52 .52 2.07												
2003 .53 .53 .53 .53 2.12										2003 .53 .53 .53 .53 2.12												
2004 .54 .54 .54 .54 2.16										2004 .54 .54 .54 .54 2.16												
2005 .54 .54 .54 .54 2.18										2005 .54 .54 .54 .54 2.18												
2006 .54 .54 .54 .54 2.18										2006 .54 .54 .54 .54 2.18												
(A) Fiscal year ends Sept. 30th.										(A) Fiscal year ends Sept. 30th.												
(B) Discontinued earnings per share. Excludes non-recurring gains/losses. (C) Dividends reported due late October.										(B) Discontinued earnings per share. Excludes non-recurring gains/losses. (C) Dividends reported due late October.												
(D) Dividends historically paid mid-January, April, July, October.										(D) Dividends historically paid mid-January, April, July, October.												
(E) Includes deferred charges. At 6/30/06: \$45.1 mil. 1.1% of sh.										(E) Includes deferred charges. At 6/30/06: \$45.1 mil. 1.1% of sh.												
(F) In millions. (G) Earnings don't sum due to change in shares outstanding.										(F) In millions. (G) Earnings don't sum due to change in shares outstanding.												
(H) Suspended due to pending acquisition by WPS Resources.										(H) Suspended due to pending acquisition by WPS Resources.												
Company's Financial Strength										Company's Financial Strength												
Stock's Price Stability										Stock's Price Stability												
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PIEDMONT NAT'L										NYSE-PHY		RECENT PRICE	25.29	PE RATIO	18.9	(Trailing: 18.2 Median: 17.6)	RELATIVE P/E RATIO	1.11	DIV'D YLD	3.9%	VALUE	100							
										High	12.4	12.9	18.2	18.1	18.3	19.7	19.0	19.0	22.0	24.3	25.8	26.2		Target Price Range					
										Low	8.1	10.3	11.0	13.9	14.3	11.8	13.7	14.6	13.7	19.2	21.3	23.2		2009 2010 2011					
										LEGENDS																			
										1.0 = Dividends p sh divided by Interest Rate																			
										... Relative Price Strength																			
										2-yr-1 spd 051																			
										2-yr-1 spd 1104																			
										Options No																			
										Shaded area indicates recession																			



<p>(A) Fiscal year ends June 30th through 2004; December 31st beg. in 2005.</p> <p>(B) Based on diluted shares. Excludes non-recurring per-share gain (loss): '01, 63¢; '03, 20¢.</p> <p>(C) 2005, Value Line Publishing, Inc. All rights reserved. The PUBLISHER is NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS HEREIN. This publication is strictly for subscriber's own, non-commercial, internal use. No part of it may be reproduced, stored in a retrieval system, or used for generating or marketing any printed or electronic publications, service or products.</p>	<p>50¢ '06, (11¢). Next eps. report due late Oct. (C) In millions, adjusted for stock splits.</p> <p>(D) Annual \$5 common stock dividends suspended end of 2005. Initial cash dividend paid mid-April.</p> <p>(E) Incl. intang. In 2005: \$465.5 mil. \$4.14/sh.</p> <p>(F) Six months ended Dec. 31 2004: rev., \$794.3 million, earnings, \$0.07.</p>	<p>Company's Financial Strength</p> <p>Stock's Price Stability</p> <p>Price Growth Persistence</p> <p>Earnings Predictability</p>	<p>B+ 84 90 90</p>
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Missouri Gas Energy  
Indicated Common Equity Cost Rate  
Through Use of a Risk Premium Model  
Using an Adjusted Total Market Approach

Line No.		Proxy Group of Four Gas Distribution Companies	Proxy Group of Eight Value Line Gas Distribution Companies	Southern Union Company
1.	Prospective Yield on Aaa Rated Corporate Bonds (1)	5.87 %	5.87 %	5.87 %
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A Rated Public Utility Bonds	<u>0.52 (2)</u>	<u>0.52 (2)</u>	<u>0.52 (2)</u>
3.	Adjusted Prospective Yield on A Rated Public Utility Bonds	6.39 %	6.39 %	6.39 %
4.	Adjustment to Reflect Bond Rating Difference	<u>0.08 (3)</u>	<u>0.00 (4)</u>	<u>0.32 (5)</u>
5.	Adjusted Prospective Bond Yield	6.47 %	6.39 %	6.71 %
6.	Equity Risk Premium (6)	<u>5.03</u>	<u>4.91</u>	<u>5.24</u>
7.	Risk Premium Derived Common Equity Cost Rate	<u>11.50 %</u>	<u>11.30 %</u>	<u>11.95 %</u>
8.	Risk Premium Derived Common Equity Cost Rate Excluding Cascade Natural and Peoples Energy (7)	<u>11.49 %</u>	<u>11.33 %</u>	

Notes: (1) Derived in Note (4) on page 5 of this Schedule.

(2) The average yield spread of A rated public utility bonds over Aaa rated corporate bonds of 0.52% from page 3 of this Schedule.

(3) One-third the average spread between Moody's A and Baa rated public utility bond yields of 24 basis points to reflect the proxy group's average Moody's bond rating of A3 as shown on page 2 of this Schedule. ((1/3 X 0.24% = 0.08%. (from page 3 of this Schedule)).

(4) No adjustment necessary as the average Moody's bond rating for the proxy group is A2.

(5) One and one-third the average the average spread between A and Baa rated public utility bond yields of 30 basis points ((1 1/3 X 0.24% = 0.32%. (from page 3 of this schedule)).

(6) From page 5 of this schedule

(7) Cascade Natural Gas Corporation and Peoples Energy Corporation are currently in the process of being acquired by MDU Resources and WPS Resources, respectively. For informational purposes, the averages excluding Cascade Natural in the proxy group of four LDCs, and Cascade and Peoples Energy in the proxy group of eight Value Line LDCs are being shown. The average Moody's bond rating for both proxy groups would be A2, if Cascade Natural for the group of four and Cascade Natural and Peoples Energy for the group of eight are excluded. Therefore, no adjustment, as indicated in Note 4 above, would be necessary for either group.

Missouri Gas Energy  
Comparison of Bond Ratings and Business profile  
for the Proxy Group of Four Gas Distribution Companies, the proxy group of  
Eight Value Line Gas Distribution Companies and Southern Union Company.

	September 2006 Moody's Bond Rating		September 2006 Standard & Poor's Bond Rating		Standard & Poor's Business Profile (2)
	Bond Rating	Numerical Weighting (1)	Bond Rating	Numerical Weighting (1)	
<u>Proxy Group of Four Gas Distribution Companies</u>					
Cascade Natural Gas Corporation	Baa1	8.0	BBB+	8.0	2.0
NICOR Inc. (3)	A1	5.0	AA	3.0	2.0
Northwest Natural Gas Company	A2	6.0	AA-	4.0	1.0
Piedmont Natural Gas Co., Inc.	A3	7.0	A	6.0	2.0
Average	<u>A2 / A3</u>	<u>6.5</u>	<u>A+</u>	<u>5.3</u>	<u>1.8</u>
Average Excluding Cascade Natural	<u>A2</u>	<u>6.0</u>	<u>AA-</u>	<u>4.3</u>	<u>1.7</u>
<u>Proxy Group of Eight Value Line Gas Distribution Companies</u>					
Cascade Natural Gas Corporation	Baa1	8.0	BBB+	8.0	2.0
The Laclede Group, Inc. (4)	A3	7.0	A	6.0	3.0
New Jersey Resources Corp. (5)	Aa3	4.0	AA-	4.0	2.0
NICOR Inc (3)	A1	5.0	AA	3.0	2.0
Northwest Natural Gas Company	A2	6.0	AA-	4.0	1.0
Peoples Energy Corporation (6)	A1	5.0	A-	7.0	3.0
Piedmont Natural Gas Co., Inc.	A3	7.0	A	6.0	2.0
WGL Holdings, Inc (7)	A2	6.0	AA-	4.0	2.0
Average	<u>A2</u>	<u>6.0</u>	<u>A+</u>	<u>5.3</u>	<u>2.1</u>
Average Excluding Cascade Natural and Peoples Energy (8)	<u>A2</u>	<u>5.8</u>	<u>AA- / A+</u>	<u>4.5</u>	<u>2.0</u>
<u>Southern Union Company (9)</u>	<u>Baa3</u>	<u>10.0</u>	<u>BBB</u>	<u>9.0</u>	<u>NA</u>

- Notes: (1) From page 3 of this schedule.  
(2) From Standard & Poor's Issuer Ranking: U S Utility And Power Companies, Strongest to Weakest, October 13, 2006.  
(3) Ratings and business profile are those of NICOR Gas Company.  
(4) Ratings and business profile are those of Laclede Gas Co.  
(5) Ratings and business profile are those of New Jersey Natural Gas.  
(6) Ratings and business profile are a composite of those of North Shore Gas Company and Peoples Gas Light & Coke Company.  
(7) Ratings and business profile are those of Washington Gas Light Company.  
(8) Cascade Natural Gas Corporation and Peoples Energy Corporation are currently in the process of being acquired by MDU Resources and WPS Resources, respectively. For informational purposes, the averages excluding Cascade Natural in the proxy group of four LDCs, and Cascade Natural and Peoples Energy in the proxy group of eight Value Line LDCs are being shown.  
(9) Ratings and business profile are a composite of those of Southern Union Company, Panhandle Eastern Pipe Line Company and Transwestern Pipeline Company.

Source of Information: Moody's Investors Service  
Standard & Poor's Global Utilities Rating Service

Moody's  
Comparison of Interest Rate Trends  
for the Two Months Ending August 2006 (1)

Years	Corporate Bonds	Public Utility Bonds		Spread - Corporate v. Public Utility Bonds				Spread - Public Utility Bonds	
		Aa Rated	A Rated	Aa (Pub. Util.) over Aaa (Corp.)	A (Pub. Util.) over Aaa (Corp.)	Baa (Pub. Util.) over Aaa (Corp.)		A over Aa	Baa over A
July-06	5.85	6.13	6.37	0.28 %	0.52 %	0.76 %		0.24 %	0.24 %
August-06	5.68	5.97	6.20	0.29 %	0.52 %	0.75 %		0.23 %	0.23 %
Average Spread (2)				<u>0.29 %</u>	<u>0.52 %</u>	<u>0.76 %</u>		<u>0.24 %</u>	<u>0.24 %</u>

Notes: (1) All yields are distributed yields.  
(2) Equal weight has been given to the July and August 2006 spread.

Source of Information: Mergent Bond Record Monthly Update, September 2006, Vol. 73, No. 9



Missouri Gas Energy  
Judgment of Equity Risk Premium  
for the Proxy Group of Four Gas Distribution Companies, the Proxy Group of  
Eight Value Line Gas Distribution Companies and Southern Union Company

Line No.		Proxy Group of Four Gas Distribution Companies	Proxy Group of Eight Value Line Gas Distribution Companies	Southern Union Company
1.	Calculated equity risk premium based on the total market using the beta approach (1)	5.65 %	5.40 %	6.59 %
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with:			
a.	A rated bonds (2)	<u>4.41</u>	<u>4.41</u>	
b.	Baa rated bonds (2)			<u>3.89</u>
3.	Average equity risk premium	<u>5.03 %</u>	<u>4.91 %</u>	<u>5.24 %</u>
4	Average equity risk premium Excluding Cascade Natural and Peoples Energy (3)	<u>5.10 %</u>	<u>4.94 %</u>	

Notes: (1) From page 5 of this Schedule.  
(2) From page 7 of this Schedule.  
(3) Cascade Natural Gas Corporation and Peoples Energy Corporation are currently in the process of being acquired by MDU Resources and WPS Resources, respectively. For informational purposes, the averages excluding Cascade Natural in the proxy group of four LDCs, and Cascade Natural and Peoples Energy in the proxy group of eight Value Line LDCs are being shown.

Missouri Gas Energy  
Derivation of Equity Risk Premium Based on the Total Market Approach  
for the Proxy Group of Four Gas Distribution Companies, the Proxy Group of  
Eight Value Line Gas Distribution Companies and Southern Union Company

Line No.		Proxy Group of Four Gas Distribution Companies	Proxy Group of Eight Value Line Gas Distribution Companies	Southern Union Company
1.	Arithmetic mean total return rate on the Standard & Poor's 500 Composite Index - 1926-2005 (1)	12.30 %	12.30 %	12.30 %
2.	Arithmetic mean yield on Aaa and Aa Corporate Bond 1926-2005 (2)	<u>(6.10)</u>	<u>(6.10)</u>	<u>(6.10)</u>
3.	Historical Equity Risk Premium	<u>6.20 %</u>	<u>6.20 %</u>	<u>6.20 %</u>
4.	Forecasted 3-5 year Total Annual Market Return (3)	12.22 %	12.22 %	12.22 %
5.	Prospective Yield an Aaa Rated Corporate Bonds (4)	<u>(5.87)</u>	<u>(5.87)</u>	<u>(5.87)</u>
6.	Forecasted Equity Risk Premium	<u>6.35 %</u>	<u>6.35 %</u>	<u>6.35 %</u>
7.	Average of Historical and Forecasted Equity Risk Premium (5)	6.28 %	6.28 %	6.28 %
8.	Adjusted Value Line Beta (6)	<u>0.90</u>	<u>0.86</u>	<u>1.05</u>
9.	Beta Adjusted Equity Risk Premium	<u>5.65 %</u>	<u>5.40 %</u>	<u>6.59 %</u>
10.	Beta Adjusted Equity Risk Premium Excluding Cascade and Peoples Energy (7)	<u>5.78 %</u>	<u>5.46 %</u>	

- Notes: (1) From Stocks, Bonds, Bills and Inflation - 2006 Yearbook Valuation Edition, Ibbotson Associates, Inc., Chicago, IL, 2006.
- (2) From Moody's Industrial Manual and Mergent Bond Record Monthly Update.
- (3) From page 4 of Schedule FJH-29 of this Exhibit.
- (4) Average forecast based upon six quarterly estimates of Aaa rated corporate bonds per the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts dated October 1, 2006 (see page 6 of this schedule). The estimates are detailed below.

Fourth Quarter 2006	5.70 %
First Quarter 2007	5.80
Second Quarter 2007	5.90
Third Quarter 2007	5.90
Fourth Quarter 2007	5.90
First Quarter 2008	<u>6.00</u>
Average	<u>5.87 %</u>

- (5) Average of the Historical Equity Risk Premium of 6.20% from Line No. 3 and the Forecasted Equity Risk Premium of 6.35% from Line No. 6 ((6.20% + 6.35%) / 2 = 6.28%).
- (6) From page 8 of this schedule.
- (7) Cascade Natural Gas Corporation Peoples Energy Corporation are currently in the process of being acquired by MDU Resources and WPS Resources, respectively. For informational purposes, the averages excluding Cascade Natural in the proxy group of four LDCs, and Cascade Natural and Peoples Energy in the proxy group of eight Value Line LDCs are being shown.

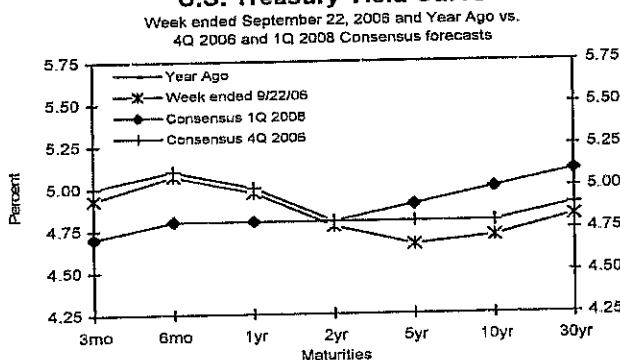
## 2 ■ BLUE CHIP FINANCIAL FORECASTS ■ OCTOBER 1, 2006

Consensus Forecasts Of U.S. Interest Rates And Key Assumptions<sup>1</sup>

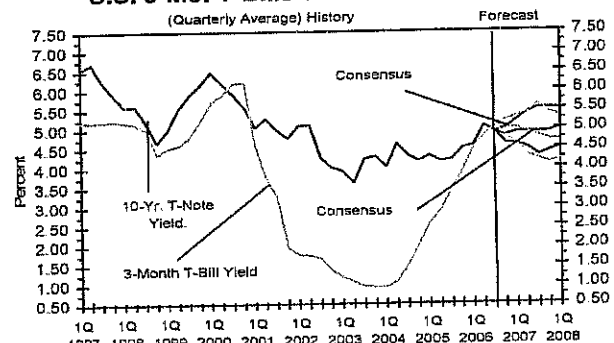
Interest Rates	History								Consensus Forecasts-Quarterly Avg.							
	Average For Week Ending				Average For Month				Latest Q*	4Q	1Q	2Q	3Q	4Q	1Q	
	Sep. 22	Sep. 15	Sep. 8	Sep. 1	Aug.	Jul.	Jun.	3Q 2006		2006	2007	2007	2007	2007	2007	2008
Federal Funds Rate	5.24	5.23	5.25	5.25	5.25	5.24	4.99	5.24	5.3	5.2	5.1	5.0	4.9	4.9	4.9	
Prime Rate	8.25	8.25	8.25	8.25	8.25	8.25	8.02	8.25	8.3	8.2	8.1	8.0	7.9	7.9	7.9	
LIBOR, 3-mo.	5.37	5.39	5.39	5.40	5.42	5.49	5.40	5.43	5.4	5.3	5.2	5.1	5.0	5.0	5.0	
Commercial Paper, 1-mo.	5.20	5.20	5.21	5.20	5.22	5.24	5.12	5.22	5.3	5.3	5.2	5.0	5.0	4.9	4.7	
Treasury bill, 3-mo.	4.93	4.93	4.97	5.06	5.09	5.08	4.92	5.04	5.0	5.0	4.9	4.8	4.7	4.7	4.7	
Treasury bill, 6-mo.	5.07	5.11	5.12	5.14	5.17	5.27	5.17	5.18	5.1	5.1	5.0	4.9	4.8	4.8	4.8	
Treasury bill, 1 yr.	4.97	5.02	5.02	5.03	5.08	5.22	5.16	5.10	5.0	5.0	4.9	4.9	4.8	4.8	4.8	
Treasury note, 2 yr.	4.77	4.83	4.81	4.83	4.90	5.12	5.12	4.94	4.8	4.9	4.9	4.8	4.8	4.8	4.9	
Treasury note, 5 yr.	4.66	4.73	4.73	4.73	4.82	5.04	5.07	4.86	4.8	4.8	4.9	4.8	4.8	4.8	4.9	
Treasury note, 10 yr.	4.71	4.79	4.79	4.76	4.88	5.09	5.11	4.91	4.8	4.9	4.9	4.9	4.9	5.0	5.0	
Treasury note, 30 yr.	4.83	4.92	4.94	4.91	5.00	5.13	5.15	5.01	4.9	5.0	5.0	5.0	5.1	5.1	5.1	
Corporate Aaa bond	5.49	5.58	5.59	5.57	5.68	5.85	5.89	5.69	5.7	5.8	5.9	5.9	5.9	5.9	6.0	
Corporate Baa bond	6.40	6.49	6.52	6.50	6.59	6.76	6.78	6.61	6.6	6.7	6.8	6.8	6.8	6.8	6.9	
State & Local bonds	4.21	4.30	4.34	4.30	4.39	4.61	4.60	4.43	4.4	4.5	4.6	4.6	4.7	4.7	4.7	
Home mortgage rate	6.40	6.43	6.47	6.44	6.52	6.76	6.68	6.57	6.4	6.5	6.5	6.5	6.6	6.6	6.6	
Key Assumptions	History								Consensus Forecasts-Quarterly Avg.							
	3Q	4Q	1Q	2Q	3Q	4Q	1Q	3Q*	4Q	1Q	2Q	3Q	4Q	1Q		
	2004	2004	2005	2005	2005	2005	2006	2006	2006	2007	2007	2007	2007	2007		
Major Currency Index	81.9	81.3	83.5	84.7	85.8	84.9	82.2	81.7	81.0	80.2	79.6	79.6	79.6	79.5		
Real GDP	2.6	3.4	3.3	4.2	1.8	5.6	2.6	2.3	2.5	2.6	2.6	2.9	3.0	3.1		
GDP Price Index	3.2	3.5	2.4	3.3	3.3	3.3	3.3	2.7	2.3	2.6	2.4	2.3	2.2	2.3		
Consumer Price Index	3.6	2.3	3.8	5.5	3.3	2.2	4.9	3.3	1.9	2.7	2.5	2.4	2.3	2.3		

<sup>1</sup>Individual panel members' forecasts are on pages 4 through 9. Historical data for interest rates except LIBOR is from Federal Reserve Release (FRSR) H.15. LIBOR quotes are available from *The Wall Street Journal*. Definitions reported here are same as those in FRSR H.15. Treasury yields are reported on a constant maturity basis. Historical data for the U.S. Federal Reserve Board's Major Currency Index is from FRSR H.10 and G.5. Historical data for Real GDP and GDP Chained Price Index are from the Bureau of Economic Analysis (BEA). Consumer Price Index (CPI) history is from the Department of Labor's Bureau of Labor Statistics (BLS). \*Interest rate data for 3Q 2006 based on historical data through the week ended September 22. Data for 3Q 2006 Major Currency Index also is based on data through week ended September 22. Figures for 3Q 2006 Real GDP, GDP Chained Price Index and Consumer Price Index are consensus forecasts based on a special question asked of the panel members this month.

## U.S. Treasury Yield Curve

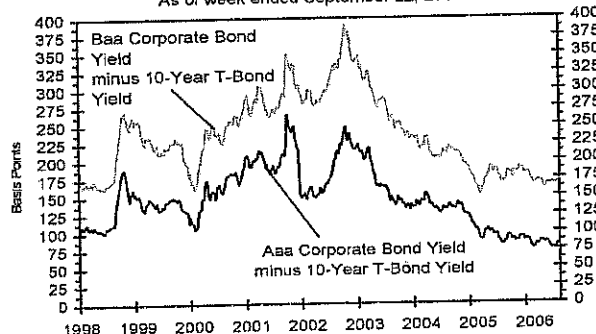


## U.S. 3-Mo. T-Bills &amp; 10-Yr. T-Note Yield



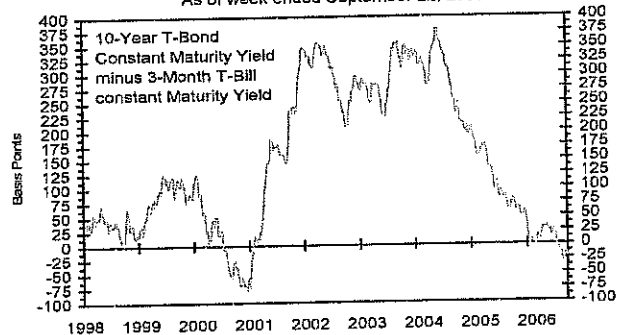
## Corporate Bond Spreads

As of week ended September 22, 2006



## U.S. Treasury Yield Curve

As of week ended September 22, 2006



Missouri Gas Energy  
Derivation of Mean Equity Risk Premium Based on a Study  
Using Holding Period Returns of Public Utilities

Line No.		Over A Rated Public Utility Bonds	Over Baa Rated Public Utility Bonds
		AUS Consultants - Utility Services Study (1)	AUS Consultants - Utility Services Study (1)
		<u>1</u>	<u>1</u>
Time Period		<u>1928-2005</u>	<u>1928-2005</u>
1.	Arithmetic Mean Holding Period Returns (2): Standard & Poor's Public Utility Index	11.02 %	11.02 %
2.	Arithmetic Mean yield on:		
	a. A-rated Public Utility Bonds	<u>(6.61)</u>	
	b. Baa-rated Public Utility Bonds		<u>(7.13)</u>
3.	Equity Risk Premium	<u>4.41 %</u>	<u>3.89 %</u>

- Notes: (1) S&P Public Utility Index and Moody's Public Utility Bond Average Annual Yields, 1928-2005 (AUS Consultants - Utility Services, 2005).
- (2) Holding period returns are calculated based upon income received (dividends and interest) plus the relative change in the market value of a security over a one-year holding period.

Missouri Gas Energy  
Value Line Adjusted Betas  
for the Proxy Group of Four Gas Distribution Companies, the Proxy Group of  
Eight Value Line Gas Distribution Companies and Southern Union Company

	<u>Value Line Adjusted Beta</u>
<u>Proxy Group of Four Gas Distribution Companies</u>	
Cascade Natural Gas Corporation	0.85
NICOR Inc.	1.20
Northwest Natural Gas Company	0.75
Piedmont Natural Gas Co., Inc.	0.80
Average	<u>0.90</u>
Average Excluding Cascade Natural (1)	<u>0.92</u>
 <u>Proxy Group of Eight Value Line Gas Distribution Companies</u>	
Cascade Natural Gas Corporation	0.85
The Laclede Group, Inc.	0.85
New Jersey Resources Corp.	0.80
NICOR Inc.	1.20
Northwest Natural Gas Company	0.75
Peoples Energy Corporation	0.85
Piedmont Natural Gas Co., Inc.	0.80
WGL Holdings, Inc.	0.80
Average	<u>0.86</u>
Average Excluding Cascade Natural and Peoples Energy (1)	<u>0.87</u>
 <u>Southern Union Company</u>	 <u>1.05</u>

Notes: (1) Cascade Natural Gas Corporation and Peoples Energy Corporation are currently in the process of being acquired by MDU Resources and WPS Resources, respectively. For informational purposes, the averages excluding Cascade Natural in the proxy group of four LDCs, and Cascade Natural and Peoples Energy in the proxy group of eight Value Line LDCs are being shown.

Source of Information: Value Line Investment Survey, (Standard Edition)  
September 15, 2006

Missouri Gas Energy  
Indicated Common Equity Cost Rate Through Use of the  
Capital Asset Pricing Model for the Proxy Group of Four Gas Distribution Companies,  
the Proxy Group of Eight Value Line Gas Distribution Companies  
and Southern Union Company

Line No.		Proxy Group of Four Gas Distribution Companies	Proxy Group of Eight Value Line Gas Distribution Companies	Southern Union Company
1.	Capital Asset Pricing Model Derived Company Equity Cost Rate (1)	<u>11.46</u> %	<u>11.19</u> %	<u>12.53</u> %
2.	Capital Asset Pricing Model Derived Company Equity Cost Rate (2)	<u>11.64</u> %	<u>11.44</u> %	<u>12.44</u> %
3.	Conclusion	<u>11.55</u> %	<u>11.32</u> %	<u>12.49</u> %
4.	Conclusion Excluding Cascade Natural and Peoples Energy (3)	<u>11.65</u> %	<u>11.34</u> %	

Notes: (1) Developed on page 2 of this Schedule.

(2) Developed on page 3 of this Schedule.

(3) Cascade Natural Gas Corporation and Peoples Energy Corporation are currently in the process of being acquired by MDU Resources and WPS Resources, respectively. For informational purposes, the averages excluding Cascade in the Proxy Group of 4 LDCs, and Cascade and Peoples in the Proxy Group of Eight Value Line LDCs are being shown.

Missouri Gas Energy  
Indicated Common Equity Cost Rate Through Use  
of the Capital Asset Pricing Model

Value Line Adjusted Beta	Company-Specific Risk Premium Based on Market Premium of 7.15% (1)	CAPM Result Including Risk-Free Rate of 5.02% (2)	Recommended CAPM Result (3)
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Traditional Capital Asset Pricing Model (4)

Proxy Group of Four Gas Distribution  
Companies

Cascade Natural Gas Corporation	0.85	6.08 %	11.10 %	11.10 %
NICOR Inc.	1.20	8.58	13.60	13.60
Northwest Natural Gas Company	0.75	5.36	10.38	10.38
Piedmont Natural Gas Co., Inc.	0.80	5.72	10.74	10.74
Average	<u>0.90</u>	<u>6.44 %</u>	<u>11.46 %</u>	<u>11.46 %</u>
Average Excluding Cascade Natural (5)	<u>0.92</u>	<u>6.55 %</u>	<u>11.57 %</u>	<u>11.57 %</u>

Proxy Group of Eight Value Line Gas  
Distribution Companies

Cascade Natural Gas Corporation	0.85	6.08 %	11.10 %	11.10 %
The Laclede Group, Inc.	0.85	6.08	11.10	11.10
New Jersey Resources Corp.	0.80	5.72	10.74	10.74
NICOR Inc.	1.20	8.58	13.60	13.60
Northwest Natural Gas Company	0.75	5.36	10.38	10.38
Peoples Energy Corporation	0.85	6.08	11.10	11.10
Piedmont Natural Gas Co., Inc.	0.80	5.72	10.74	10.74
WGL Holdings, Inc.	0.80	5.72	10.74	10.74
Average	<u>0.86</u>	<u>6.17 %</u>	<u>11.19 %</u>	<u>11.19 %</u>
Average Excluding Cascade Natural and Peoples Energy Corporation (5)	<u>0.87</u>	<u>6.20 %</u>	<u>11.22 %</u>	<u>11.22 %</u>
Southern Union Company	<u>1.05</u>	<u>7.51 %</u>	<u>12.53 %</u>	<u>12.53 %</u>

See page 4 for notes

Missouri Gas Energy  
Indicated Common Equity Cost Rate Through Use  
of the Capital Asset Pricing Model

Value Line Adjusted Beta	Company-Specific Risk Premium Based on Market Premium of 7.15% (1)	CAPM Result Including Risk-Free Rate of 5.02% (2)	Recommended CAPM Result (3)
<u>Empirical Capital Asset Pricing Model (6)</u>			
<u>Proxy Group of Four Gas Distribution Companies</u>			
Cascade Natural Gas Corporation	0.85	6.35 %	11.37 %
NICOR Inc.	1.20	8.22	13.24
Northwest Natural Gas Company	0.75	5.81	10.83
Piedmont Natural Gas Co., Inc.	0.80	6.08	11.10
Average	<u>0.90</u>	<u>6.62 %</u>	<u>11.64 %</u>
Average Excluding Cascade Natural (5)	<u>0.92</u>	<u>6.70 %</u>	<u>11.72 %</u>
<u>Proxy Group of Eight Value Line Gas Distribution Companies</u>			
Cascade Natural Gas Corporation	0.85	6.35 %	11.37 %
The Laclede Group, Inc.	0.85	6.35	11.37
New Jersey Resources Corp.	0.80	6.08	11.10
NICOR Inc.	1.20	8.22	13.24
Northwest Natural Gas Company	0.75	5.81	10.83
Peoples Energy Corporation	0.85	6.35	11.37
Piedmont Natural Gas Co., Inc.	0.80	6.08	11.10
WGL Holdings, Inc.	0.80	6.08	11.10
Average	<u>0.86</u>	<u>6.42 %</u>	<u>11.44 %</u>
Average Excluding Cascade Natural and Peoples Energy Corporation (5)	<u>0.87</u>	<u>6.44 %</u>	<u>11.46 %</u>
<u>Southern Union Company</u>	<u>1.05</u>	<u>7.42 %</u>	<u>12.44 %</u>

See page 4 for notes.



Missouri Gas Energy

Development of the Market-Required Rate of Return on Common Equity Using the  
Capital Asset Pricing Model for the Proxy Group of Four Gas Distribution Companies,  
the Proxy Group of Eight Value Line Gas Distribution Companies and Southern Union Company  
Adjusted to Reflect a Forecasted Risk-Free Rate and Market Return

Notes:

- (1) From the two previous month-end (August '06 – September '06), as well as a recently available (October 13, 2006), Value Line Summary & Index, a forecasted 3-5 year total annual market return of 12.22% can be derived by averaging the August 2006, September 2006, and spot forecasted total 3-5 year total appreciation, converting it into an annual market appreciation and adding the Value Line average forecasted annual dividend yield.

The 3-5 year average total market appreciation of 49%, produces a four-year average annual return of 10.48%  $((1.49^{26}) - 1) \times 100$ . When the average annual forecasted dividend yield of 1.74% is added, a total average market return of 12.22% (1.74% + 10.48%) is derived.

August 2006, September 2006 and spot forecasted total market return of 12.22% minus the risk-free rate of 5.02% (developed in Note 2) is 7.20% (12.22% - 5.02%). The Ibbotson Associates calculated market premium of 7.10% for the period 1926-2005 results from a total market return of 12.30% less the average income return on long-term U.S. Government Securities of 5.20% (12.30% - 5.20% = 7.10%). This is then averaged with the 7.20% Value Line market premium resulting in a 7.15% market premium. The 7.15% market premium is then multiplied by the beta in column 1 of pages 2 and 3 of this schedule.

- (2) Average forecast based upon six quarterly estimates of 20-year Treasury Note yields per the consensus of nearly 50 economists reported in the Blue Chip Financial Forecasts dated October 1, 2006 (see page 6 of Schedule FJH-28 of this exhibit). The estimates are detailed below:

	30-Year Treasury Note Yield
Fourth Quarter 2006	4.90%
First Quarter 2007	5.00
Second Quarter 2007	5.00
Third Quarter 2007	5.00
Fourth Quarter 2007	5.10
First Quarter 2008	5.10
Average	5.02%

- (3) Includes only those indicated common equity cost rates which are greater than 9.45% for reasons fully explained in Mr. Hanley's direct testimony.

- (4) The traditional Capital Asset Pricing Model (CAPM) is applied using the following formula:

$$R_S = R_F + \beta (R_M - R_F)$$

Where  $R_S$  = Return rate of common stock  
 $R_F$  = Risk Free Rate  
 $\beta$  = Value Line Adjusted Beta  
 $R_M$  = Return on the market as a whole

- (5) Cascade Natural Gas Corporation and Peoples Energy Corporation are currently in the process of being acquired by MDU Resources and WPS Resources, respectively. For informational purposes, the averages excluding Cascade in the proxy group of four gas distribution companies, and Cascade Natural and Peoples Energy in the proxy group of eight Value Line gas distribution companies are being shown.

- (6) The empirical CAPM is applied using the following formula:

$$R_S = R_F + .25 (R_M - R_F) + .75 \beta (R_M - R_F)$$

Where  $R_S$  = Return rate of common stock  
 $R_F$  = Risk-Free Rate  
 $\beta$  = Value Line Adjusted Beta  
 $R_M$  = Return on the market as a whole

Source of Information: Value Line Summary & Index (Standard Edition)  
Blue Chip Financial Forecasts, October 1, 2006  
Value Line Investment Survey, September 15, 2006  
Stocks, Bonds, Bills and Inflation – Valuation Edition -2006 Yearbook Market Results for 1926-2005 Ibbotson Associates, Inc., Chicago, IL

Missouri Gas Energy  
Comparable Earnings Analysis  
for a Proxy Group of Thirty-Eight Non-Utility Companies Comparable to  
the Proxy Group of Four Gas Distribution Companies (1)

Proxy Group of Thirty-Eight Non-Utility Companies Comparable to the Proxy Group of Four Gas Distribution Companies (1)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	5-Year Projected Rate of Return on Net Worth, Equity or Partners' Capital (2)	
				Percent	Student's T-Test
Albemarle Corp	0.90	0.80	3.1129	13.50 %	(0.23)
Alberto Culver	0.70	0.53	2.9772	14.00	(0.17)
Alexander & Baldwin	0.90	0.78	3.1119	13.00	(0.29)
Ashland Inc.	0.85	0.70	3.0119	6.00	(1.15)
BOK Financial	0.80	0.64	3.0444	12.00	(0.42)
Baldor Electric	0.85	0.77	2.9975	18.50	0.38
Santa Corp.	0.75	0.59	2.8763	13.00	(0.29)
Capitol Fed. Fin'l	0.70	0.51	2.9480	7.50	(0.97)
Cincinnati Financial	0.85	0.75	3.0515	8.00	(0.91)
City National Corp.	0.90	0.79	3.2484	16.50	0.14
ConocoPhillips	0.90	0.78	3.0735	8.00	(0.91)
Dentsply Int'l	0.70	0.54	3.2618	15.50	0.01
Dun & Bradstreet	0.80	0.63	3.0607	45.50 (3)	3.70
Ecolab Inc.	0.90	0.81	2.9292	24.50	1.12
First Midwest Bancorp	0.90	0.80	2.9316	20.50	0.63
Graco Inc.	0.85	0.77	3.2291	34.00 (3)	2.29
Hancock Holding	0.70	0.54	3.0665	14.50	(0.11)
Harle-Hanks	0.85	0.70	3.1520	17.00	0.20
Hillenbrand Inds.	0.80	0.63	3.3283	18.00	0.32
Hospitality Properties	0.85	0.73	3.0360	8.50	(0.85)
Iron Mountain	0.90	0.79	3.3620	10.50	(0.60)
Markel Corp.	0.80	0.67	2.9135	14.50	(0.11)
McClatchy Co.	0.75	0.61	2.9836	6.50	(1.09)
McGraw-Hill	0.80	0.63	3.0963	19.50	0.50
Media General 'A'	0.90	0.81	3.1158	7.50	(0.97)
Meredith Corp.	0.90	0.77	2.9132	20.00	0.57
New York Times	0.90	0.81	3.0126	15.00	(0.05)
Occidental Petroleum	0.90	0.78	3.3428	15.00	(0.05)
People's Bank	0.85	0.70	3.1720	13.00	(0.29)
Pfizer Inc.	0.85	0.70	3.1781	22.50	0.87
Plum Creek Timber	0.75	0.58	2.9367	15.50	0.01
RLI Corp.	0.75	0.55	3.1141	12.50	(0.36)
Toro Co.	0.85	0.75	3.2727	33.00 (3)	2.16
Trizec Properties	0.80	0.67	3.3071	8.00	(0.91)
Union Pacific	0.90	0.79	3.1224	9.50	(0.72)
Washington Federal	0.85	0.74	3.0069	15.00	(0.05)
Webster Fin'l	0.90	0.78	3.0201	9.00	(0.79)
Weis Markets	0.70	0.54	3.2441	10.50	(0.60)
Average for the Non-Utility Group	<u>0.83</u>	<u>0.70</u>	<u>3.0938</u>		
Average for the Proxy Group of Four Gas Distribution Companies	<u>0.80</u>	<u>0.65 (4)</u>	<u>3.1280 (5)</u>		

Mean (3) 13.50 %

Conclusion (6) 14.36 %

See pages 7 and 8 for notes

Missouri Gas Energy  
Comparable Earnings Analysis  
for a Proxy Group of Twenty-Three Non-Utility Companies Comparable to  
the Proxy Group of Eight Value Line Gas Distribution Companies (7).

Proxy Group of Twenty-Three Non-Utility Companies Comparable to the Proxy Group of Eight Value Line Gas Distribution Companies (7)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	5-Year Projected Rate of Return on Net Worth, Equity or Partners' Capital (2)	
				Percent	Student's T-Test
Alberto Culver	0.70	0.53	2.9772	14.00 %	(0.11)
Apartment Investment	0.65	0.46	2.7732	8.50	(0.76)
Ashland Inc.	0.85	0.70	3.0119	6.00	(1.05)
BRE Properties	0.70	0.50	2.6424	9.00	(0.70)
Banta Corp.	0.75	0.59	2.8763	13.00	(0.23)
Buckeye Partners L.P.	0.70	0.47	2.7302	19.00	0.48
Capitol Fed. Fin'l	0.70	0.51	2.9480	7.50	(0.67)
Crescent Real Est.	0.80	0.68	2.8368	15.00	0.01
Duke Realty Corp.	0.70	0.53	2.5998	9.00	(0.70)
Exxon Mobil Corp.	0.80	0.65	2.5674	20.50	0.65
Federal Rlty. Inv. Trust	0.70	0.48	2.7163	17.00	0.24
Hudson City Bancorp	0.75	0.57	2.7926	10.00	(0.58)
Kimberly-Clark	0.65	0.46	2.9350	32.00	2.00
Liberty Corp.	0.75	0.60	2.6765	NA (8)	NA
Liberty Property	0.70	0.49	2.5717	12.00	(0.35)
Markel Corp.	0.80	0.67	2.9135	14.50	(0.05)
McClatchy Co.	0.75	0.61	2.9836	6.50	(0.99)
Moody's Corp.	0.80	0.64	2.8144	43.50 (9)	3.35
Old Nat'l Bancorp	0.70	0.49	2.6033	15.50	0.06
Plum Creek Timber	0.75	0.58	2.9367	15.50	0.06
Simon Property Group	0.70	0.48	2.7083	14.00	(0.11)
Washington Federal	0.85	0.74	3.0069	15.00	0.01
Washington R.E.I.T.	0.70	0.54	2.7710	12.00	(0.35)
Average for the Non-Utility Group	<u>0.74</u>	<u>0.56</u>	<u>2.7997</u>		

Average for the Proxy Group of Eight Value Line  
Gas Distribution Companies 0.78 0.61 (10) 2.7792 (11)

Mean (8) 13.60 %

Conclusion (6) 14.35 %

See pages 7 and 8 for notes.

Missouri Gas Energy  
Comparable Earnings Analysis  
for a Proxy Group of Ninety-Eight Non-Utility Companies Comparable to  
Southern Union Company (12)

Proxy Group of Ninety-Eight Non-Utility Companies Comparable Southern Union Company (12)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	5-Year Projected Rate of Return on Net Worth, Equity or Partners' Capital (2)	
				Percent	Student's T-Test
21st Century Ins. Group	0.90	0.78	4.0866	9.50 %	(1.07)
ADVO Inc.	0.90	0.79	3.8183	21.00	0.89
Abbott Labs.	0.80	0.68	3.8832	23.00	1.23
Advance Auto Parts	0.90	0.82	4.2012	20.00	0.72
Aflac Inc.	0.95	0.86	3.9019	17.50	0.29
Albany Int'l 'A'	1.05	1.06	4.2858	15.00	(0.13)
Allstate Corp.	0.95	0.85	3.8067	11.00	(0.81)
Amerada Hess	0.90	0.80	4.0188	9.50	(1.07)
Ameron Int'l	0.85	0.76	4.4690	12.50	(0.56)
Anadarko Petroleum	0.90	0.83	4.4300	11.00	(0.81)
Arch Chemicals	0.90	0.81	4.4104	11.50	(0.73)
AutoZone Inc.	0.85	0.70	4.4014	38.50 (15)	3.86
Autoliv Inc.	1.10	1.10	3.8933	15.00	(0.13)
Ball Corp.	0.90	0.79	3.9067	19.50	0.63
Bandag Inc.	0.95	0.85	3.9212	9.00	(1.15)
Bank of Hawaii	0.95	0.86	3.9299	19.00	0.55
Berkley (W.R.)	0.80	0.67	4.1772	14.00	(0.30)
Biomet	0.90	0.77	4.3919	22.00	1.06
Black & Decker	1.05	1.06	4.2481	19.00	0.55
Boeing	1.05	1.05	4.0907	21.50	0.97
Borders Group	0.95	0.87	4.5155	12.50	(0.56)
Briggs & Stratton	1.10	1.09	3.8532	17.00	0.21
Brink's (The) Co.	1.05	1.07	4.2341	12.50	(0.56)
Brown & Brown	0.90	0.78	4.1737	16.00	0.04
Burlington Coat	1.05	1.02	4.2140	NA (16)	NA
Burlington Resources	0.80	0.69	4.3635	NA (16)	NA
C.H. Robinson	0.85	0.76	4.2837	19.00	0.55
CSX Corp.	1.05	1.04	4.1493	11.00	(0.81)
Cabot Corp.	1.00	0.95	4.3746	12.50	(0.56)
Casey's Gen'l Stores	0.85	0.74	4.3342	11.50	(0.73)
Chesapeake Corp.	0.95	0.88	4.2930	7.50	(1.41)
Chicago Mercantile	1.00	0.99	4.4902	19.50	0.63
ChoicePoint Inc.	0.90	0.81	3.9443	11.00	(0.81)
Commercial Metals	0.95	0.86	4.1715	14.50	(0.22)
Cooper Tire & Rubber	1.00	0.99	4.4032	14.00	(0.30)
Countrywide Financial	1.00	0.98	4.0648	13.50	(0.39)
Cytex Inds.	1.00	0.97	4.1299	18.50	0.46
Datascope Corp.	0.95	0.85	4.3746	11.00	(0.81)
Dionex Corp.	0.85	0.70	3.9844	21.00	0.89
Downey Fin'l	0.90	0.81	4.1632	14.00	(0.30)
Eagle Materials	0.90	0.80	4.1023	23.00	1.23
Encore Acquisition	1.00	0.99	4.4182	11.50	(0.73)
Federal Signal	0.95	0.87	4.0623	13.50	(0.39)
Florida Rock	1.00	0.94	3.9042	16.00	0.04
Gallagher (Arthur J.)	0.95	0.86	4.1442	20.00	0.72
Gardner Denver	0.85	0.73	4.2431	11.50	(0.73)
Gaylord Entertainm.	0.95	0.90	4.2247	5.00	(1.83)
Glatfelter	0.85	0.76	4.2850	11.50	(0.73)
GlobalSantaFe Corp.	1.00	0.99	4.4410	10.50	(0.90)
Haemonetics Corp.	0.85	0.71	4.4929	14.00	(0.30)
Harrah's Entertain.	0.95	0.87	4.4861	13.00	(0.47)
Int'l Business Mach.	1.05	1.06	3.8409	28.50 (15)	2.16
Jack in the Box	0.90	0.78	4.4569	15.50	(0.05)
Jacobs Engineering	0.95	0.92	3.9469	15.00	(0.13)
Kellwood Co.	0.90	0.78	4.3632	9.50	(1.07)
Kelly Services 'A'	0.95	0.87	4.2955	11.00	(0.81)
Kohl's Corp.	1.05	1.04	4.1867	16.50	0.12
Lauder (Estee)	0.90	0.81	4.0447	35.00 (15)	3.27
Lincoln Elec Hldgs.	0.85	0.73	4.0259	15.00	(0.13)
Marcus Corp.	0.85	0.75	4.4413	9.50	(1.07)
Masco Corp.	1.10	1.09	4.2366	20.50	0.80
McDonald's Corp.	1.05	1.00	3.9567	18.00	0.38

Missouri Gas Energy  
Comparable Earnings Analysis  
for a Proxy Group of Ninety-Eight Non-Utility Companies Comparable to  
Southern Union Company (12)

Proxy Group of Ninety-Eight Non-Utility Companies Comparable Southern Union Company (12)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	5-Year Projected Rate of Return on Net Worth, Equity or Partners' Capital (2)	
				Percent	Student's T-Test
Merck & Co.	0.80	0.68	4.4432	26.00	1.74
Miller (Herman)	0.95	0.92	4.1296	29.00 (15)	2.25
Murphy Oil Corp.	0.85	0.76	3.9883	9.50	(1.07)
New York Community	0.95	0.85	4.1363	12.00	(0.64)
Newell Rubbermaid	0.85	0.76	4.1959	21.00	0.89
Nordson Corp.	1.05	1.02	3.9829	13.00	(0.47)
Norfolk Southern	1.05	1.04	4.2922	13.00	(0.47)
Outback Steakhouse	0.90	0.83	4.1896	14.50	(0.22)
PMI Group	1.05	1.06	3.9777	11.00	(0.81)
Pactiv Corp.	0.90	0.81	3.8556	18.00	0.38
Payless ShoeSource	0.85	0.74	4.0567	10.50	(0.90)
Pixar	1.05	1.02	4.1578	NA (16)	NA
Polaris Inds.	1.00	0.93	3.8154	30.00	2.42
Progressive (Ohio)	1.05	1.05	4.3361	14.00	(0.30)
Quanex Corp.	1.00	0.93	4.0393	15.00	(0.13)
RPM Int'l	0.85	0.76	4.4246	15.50	(0.05)
Reinsurance Group	0.90	0.82	4.1328	12.00	(0.64)
Rohm and Haas	1.05	1.07	4.4998	15.50	(0.05)
Ruby Tuesday	0.85	0.75	4.5025	19.50	0.63
SAFECO Corp.	0.95	0.89	4.4267	11.50	(0.73)
Schulman (A.)	0.85	0.71	4.1966	7.00	(1.49)
Sigma-Aldrich	0.85	0.71	3.9318	18.50	0.46
Sovereign Bancorp	1.10	1.11	3.9183	15.00	(0.13)
St. Jude Medical	0.85	0.73	4.2191	15.50	(0.05)
Stanley Works	1.00	0.97	3.9338	16.00	0.04
Steelcase Inc 'A'	0.85	0.76	4.5001	14.00	(0.30)
Superior Inds. Int'l	1.00	0.98	3.8279	9.00	(1.15)
Sybron Dental	0.90	0.82	4.4078	NA (16)	NA
Tecumseh Products 'A'	0.80	0.68	3.8146	9.50	(1.07)
Trinity Inds.	0.95	0.89	4.2319	12.50	(0.56)
Tupperware Brands	0.85	0.74	4.3901	24.00	1.40
United Stationers	1.10	1.11	4.1798	13.00	(0.47)
Varian Medical Sys.	0.80	0.67	4.1332	23.50	1.31
Waste Management	0.90	0.82	4.2063	20.00	0.72
Wausau Paper	1.00	1.00	4.0989	21.00	0.89
Weight Watchers	0.95	0.90	3.8996	NMF (16)	NMF
Average for the Non-Utility Group	<u>0.94</u>	<u>0.87</u>	<u>4.1720</u>		

Southern Union Company 0.95 0.89 (13) 4.1728 (14)

Mean (15) 15.02 %

Conclusion (6) 14.11 %

See pages 7 and 8 for notes.

Missouri Gas Energy  
Comparable Earnings Analysis  
for a Proxy Group of Thirty-Eight Non-Utility Companies Comparable to  
the Proxy Group of Three Gas Distribution Companies (17)

Proxy Group of Thirty-Eight Non-Utility Companies Comparable to the Proxy Group of Three Gas Distribution Companies (17)	Adj. Beta	Unadj Beta	Standard Error of the Regression	5-Year Projected Rate of Return on Net Worth, Equity or Partners' Capital (2)	
				Percent	Student's T-Test
3M Company	0.90	0.80	2.7583	26.00 %	1.12
Albemarle Corp.	0.90	0.80	3.1129	13.50	(0.26)
Alberto Culver	0.70	0.53	2.9772	14.00	(0.21)
Alexander & Baldwin	0.90	0.78	3.1119	13.00	(0.32)
Ashland Inc.	0.85	0.70	3.0119	6.00	(1.09)
BOK Financial	0.80	0.64	3.0444	12.00	(0.43)
Baldor Electric	0.85	0.77	2.9975	18.50	0.29
Banta Corp.	0.75	0.59	2.8763	13.00	(0.32)
Capitol Fed. Fin'l	0.70	0.51	2.9480	7.50	(0.93)
Cincinnati Financial	0.85	0.75	3.0515	8.00	(0.87)
ConocoPhillips	0.90	0.78	3.0735	8.00	(0.87)
Crescent Real Est.	0.80	0.68	2.8368	15.00	(0.10)
Dun & Bradstreet	0.80	0.63	3.0607	45.50 (18)	3.28
Ecolab Inc.	0.90	0.81	2.9292	24.50	0.96
First Midwest Bancorp	0.90	0.80	2.9316	20.50	0.51
Genuine Parts	0.90	0.81	2.7652	17.00	0.13
Graco Inc.	0.85	0.77	3.2291	34.00 (18)	2.01
Hancock Holding	0.70	0.54	3.0665	14.50	(0.15)
Harte-Hanks	0.85	0.70	3.1520	17.00	0.13
Hospitality Properties	0.85	0.73	3.0360	8.50	(0.82)
Hudson City Bancorp	0.75	0.57	2.7926	10.00	(0.65)
Markel Corp.	0.80	0.67	2.9135	14.50	(0.15)
McClatchy Co.	0.75	0.61	2.9836	6.50	(1.04)
McGraw-Hill	0.80	0.63	3.0963	19.50	0.40
Media General 'A'	0.90	0.81	3.1158	7.50	(0.93)
Meredith Corp.	0.90	0.77	2.9132	20.00	0.46
Moody's Corp.	0.80	0.64	2.8144	43.50	3.06
New York Times	0.90	0.81	3.0126	15.00	(0.10)
People's Bank	0.85	0.70	3.1720	13.00	(0.32)
Pfizer Inc.	0.85	0.70	3.1781	22.50	0.74
Plum Creek Timber	0.75	0.58	2.9367	15.50	(0.04)
RLI Corp.	0.75	0.55	3.1141	12.50	(0.37)
Union Pacific	0.90	0.79	3.1224	9.50	(0.71)
Unitrin Inc.	0.90	0.83	2.9039	11.00	(0.54)
Washington Federal	0.85	0.74	3.0069	15.00	(0.10)
Washington R.E.I.T.	0.70	0.54	2.7710	12.00	(0.43)
Webster Fin'l	0.90	0.78	3.0201	9.00	(0.76)
Weis Markets	0.70	0.54	3.2441	10.50	(0.60)
Average for the Non-Utility Group	<u>0.83</u>	<u>0.69</u>	<u>3.0022</u>		

Average for the Proxy Group of Three Gas  
Distribution Companies 0.82 0.67 (18) 2.9838 (18)

Mean (3) 14.54 %

Conclusion (6) 14.15 %

See pages 7 and 8 for notes.

Missouri Gas Energy  
Comparable Earnings Analysis  
for a Proxy Group of Nineteen Non-Utility Companies Comparable to  
the Proxy Group of Six Value Line Gas Distribution Companies (17)

Proxy Group of Nineteen Non-Utility Companies Comparable to the Proxy Group of Six Value Line Gas Distribution Companies (17)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	5-Year Projected Rate of Return on Net Worth, Equity or Partners' Capital (2)	
				Percent	Student's T-Test
BRE Properties	0.70	0.50	2.6424	9.00 %	(0.71)
Banta Corp.	0.75	0.59	2.8763	13.00	(0.24)
Buckeye Partners L.P.	0.70	0.47	2.7302	19.00	0.48
Chevron Corp.	0.80	0.67	2.5141	17.00	0.24
Commerce Bancshs.	0.80	0.67	2.4462	13.00	(0.24)
Crescent Real Est.	0.80	0.68	2.8368	15.00	0.00
Duke Realty Corp.	0.70	0.53	2.5998	9.00	(0.71)
Equity Office P'plys	0.70	0.48	2.5112	6.00	(1.07)
Equity Residential	0.70	0.53	2.4832	5.00	(1.19)
Exxon Mobil Corp.	0.80	0.65	2.5674	20.50	0.66
Federal Rlty. Inv. Trust	0.70	0.48	2.7163	17.00	0.24
Hudson City Bancorp	0.75	0.57	2.7926	10.00	(0.59)
Liberty Corp.	0.75	0.60	2.6765	NA (8)	NA
Liberty Property	0.70	0.49	2.5717	12.00	(0.36)
Moody's Corp.	0.80	0.64	2.8144	43.50 (18)	3.41
Old Nat'l Bancorp	0.70	0.49	2.6033	15.50	0.06
Simon Property Group	0.70	0.48	2.7083	14.00	(0.12)
United Parcel Serv.	0.80	0.68	2.4342	19.00	0.48
Washington R.E.I.T.	0.70	0.54	2.7710	12.00	(0.36)
Average for the Non-Utility Group	<u>0.74</u>	<u>0.57</u>	<u>2.6472</u>		

Average for the Proxy Group of Six Value Line Gas Distribution Companies	<u>0.78</u>	<u>0.61 (18)</u>	<u>2.6575 (18)</u>
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Mean (8)	<u>13.29 %</u>
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Conclusion (6)	<u>14.71 %</u>
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See pages 7 and 8 for notes.

# Missouri Gas Energy Comparable Earnings Analysis

Notes:

- (1) The criteria for selection of the proxy group of thirty-eight non-utility companies was that the non-utility companies be domestic and have a meaningful projected 2008 – 2010 rate of return on net worth or partners' capital as reported in Value Line Investment Survey (Standard Edition). The proxy group of thirty-eight non-utility companies was selected based upon the proxy group of four gas distribution companies' unadjusted beta range of 0.49 – 0.81 and standard error of the regression range of 2.8532 – 3.4028. These ranges are based upon plus or minus two standard deviations of the unadjusted beta and standard error of the regression as detailed in Mr. Hanley's direct testimony. Plus or minus two standard deviations captures 95.5% of the distribution of unadjusted betas and standard errors of the regression.
- (2) 2008-2010.
- (3) The Student's T-statistic associated with this projected return exceeds 1.960 at the 95% level of confidence. Therefore, it has been excluded, as an outlier, to arrive at a proper mean projected return as fully explained in Mr. Hanley's direct testimony.
- (4) The standard deviation of the proxy group of four gas distribution companies' unadjusted beta is 0.0823.
- (5) The standard deviation of the proxy group of four gas distribution companies' standard error of the regression is 0.1374. The standard deviation of the standard error of the regression is calculated as follows:

Standard Deviation of the Standard Error of the Regression =

$$\frac{\text{Standard Error of the Regression}}{\sqrt{2N}}$$

Where: N = number of observations. Since Value Line betas are derived from weekly price change observations over a period of five years, N = 259

$$\text{Thus, } 0.1374 = \frac{3.1280}{\sqrt{518}} = \frac{3.1280}{22.7596}$$

- (6) Average of 5-year projected rates of return excluding those above 20% and below 9.45% for reasons fully explained in Mr. Hanley's direct testimony.
- (7) The criteria for selection of the proxy group of twenty-three non-utility companies was that the non-utility companies be domestic and have a meaningful projected 2008 – 2010 rate of return on net worth or partners' capital as reported in Value Line Investment Survey (Standard Edition). The proxy group of twenty-three non-utility companies was selected based upon the proxy group of eight Value Line gas distribution companies' unadjusted beta range of 0.46 – 0.76 and standard error of the regression range of 2.5350 – 3.0234. These ranges are based upon plus or minus two standard deviations of the unadjusted beta and standard error of the regression as detailed in Mr. Hanley's direct testimony. Plus or minus two standard deviations captures 95.5% of the distribution of unadjusted betas and standard errors of the regression
- (8) On February 2, 2006, Liberty Corporation was officially acquired by privately held Raycom Media, Inc. Therefore, the company is not being traded anymore, and consequently, not included in the Student's T-statistic.
- (9) The Student's T-statistic associated with this projected return exceeds 2.080 at the 95% level of confidence with twenty-one (21 = 22 observations – 1) degrees of freedom. Therefore, it has been excluded, as an outlier, to arrive at a proper mean projected return as fully explained in Mr. Hanley's direct testimony.



Missouri Gas Energy  
Comparable Earnings Analysis

- (10) The standard deviation of the proxy group of eight Value Line gas distribution companies' unadjusted beta is 0.0732.
- (11) The standard deviation of the proxy group of eight Value Line gas distribution companies' standard error of the regression is  $0.1221 = (2.7792 / 22.7596)$ .
- (12) The criteria for selection of the proxy group of ninety-eight non-utility companies was that the non-utility companies be domestic and have a meaningful projected 2008 – 2010 rate of return on net worth or partners' capital as reported in Value Line Investment Survey (Standard Edition). The proxy group of ninety-eight non-utility companies was selected based upon Southern Union Company's unadjusted beta range of 0.67 – 1.11 and standard error of the regression range of 3.8062 – 4.5394. These ranges are based upon plus or minus two standard deviations of the unadjusted beta and standard error of the regression as detailed in Mr. Hanley's direct testimony. Plus or minus two standard deviations captures 95.5% of the distribution of unadjusted betas and standard errors of the regression.
- (13) The standard deviation of Southern Union Company's unadjusted beta is 0.1098.
- (14) The standard deviation of Southern Union Company's standard error of the regression is  $0.1833 = (4.1728 / 22.7596)$ .
- (15) The following companies are not being traded anymore, and therefore, they are not included in the Student's T-statistic: Burlington Coat Factory was acquired by Bain Capital Partners on April 13, 2006; Burlington Resources was acquired by ConocoPhillips on March 31, 2006; Pixar was acquired by Disney on May 6, 2006; Sybron Dental was acquired by Danaher Corporation on May 19, 2006. Weight Watchers is not included in the Student's T-statistic because the company's 5-Year Projected Rate of Return on Equity is NMF.
- (16) The Student's T-statistic associated with this projected return exceeds 1.96 at the 95% level of confidence with twenty-two ( $92 = 93 \text{ observations} - 1$ ) degrees of freedom. Therefore, it has been excluded, as an outlier, to arrive at a proper mean projected return as fully explained in Mr. Hanley direct testimony.
- (17) Cascade Natural Gas Corporation and Peoples Energy Corporation are currently in the process of being acquired by MDU Resources and WPS Resources, respectively. If the Cascade were excluded from the group of 4, and Cascade and Peoples were excluded from the group of 8, the results would be as follow: The proxy group of thirty-eight non-utility companies was selected based upon the proxy group of three gas distribution companies' unadjusted beta range of 0.51 – 0.83 and standard error of the regression range of 2.7216 – 3.2460. The proxy group of nineteen non-utility companies was selected based upon the proxy group of six Value Line gas distribution companies' unadjusted beta range of 0.47 – 0.75 and standard error of the regression range of 2.4331 – 2.9019. These ranges are based upon plus or minus two standard deviations of the unadjusted beta and standard error of the regression as detailed in Mr. Hanley's direct testimony. Plus or minus two standard deviations captures 95.5% of the distribution of unadjusted betas and standard errors of the regression.
- (18) For the proxy group of three LDCs the Student's T-statistic associated with this projected return exceeds 1.960 at the 95% level of confidence. Therefore, it has been excluded, as an outlier, to arrive at a proper mean projected return as fully explained in Mr. Hanley's direct testimony. For the proxy group of six Value Line LDCs the Student's T-statistic associated with this projected return exceeds 2.101 at the 95% level of confidence with seventeen ( $17 = 18 \text{ observations} - 1$ ) degrees of freedom. Therefore, it has been excluded, as an outlier, to arrive at a proper mean projected return as fully explained in the accompanying direct testimony. The standard deviations of the proxy group of three LDCs and six Value Line LDCs' unadjusted beta are 0.0785 and 0.0702, respectively. The standard deviations of the proxy groups of three LDCs and six Value Line LDCs' standard error of the regression are 0.1311 and 0.1172, respectively.

Source of Information: Value Line, Inc., Proprietary database, September 15, 2006  
Value Line Investment Survey (Standard Edition)