

Does Corporate Social Responsibility Affect the Cost of Capital? *

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Abstract

We examine the effect of corporate social responsibility (CSR) on the cost of equity capital for a large sample of U.S. firms. Using several approaches to estimate firms' ex ante cost of equity, we find that firms with better CSR scores exhibit cheaper equity financing. In particular, our findings suggest that investment in improving responsible employee relations, environmental policies, and product strategies contributes substantially to reducing firms' cost of equity. Our results also show that participation in two "sin" industries, namely, tobacco and nuclear power, increases firms' cost of equity. These findings support arguments in the literature that firms with socially responsible practices have higher valuation and lower risk.

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Keywords: Corporate social responsibility, Cost of equity capital

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Does Corporate Social Responsibility Affect the Cost of Capital?

Abstract

We examine the effect of corporate social responsibility (CSR) on the cost of equity capital for a large sample of U.S. firms. Using several approaches to estimate firms' ex ante cost of equity, we find that firms with better CSR scores exhibit cheaper equity financing. In particular, our findings suggest that investment in improving responsible employee relations, environmental policies, and product strategies contributes substantially to reducing firms' cost of equity. Our results also show that participation in two "sin" industries, namely, tobacco and nuclear power, increases firms' cost of equity. These findings support arguments in the literature that firms with socially responsible practices have higher valuation and lower risk.

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Appendix A

Models of Cost of Equity Capital

In this appendix, we describe the cost of equity models used in this paper. We start by defining variables and specifying assumptions common to all models. We then successively cover each model and its assumptions.

Common Variables and Assumptions

P_t = stock price in June of year t

DPS_0 = actual dividend per share in year $t-1$

EPS_0 = actual earnings per share in year $t-1$

LTG = long-term growth forecast in June of year t

$FEPS_{t+\tau}$ = forecasted earnings per share for year $t+\tau$ recorded in June of year t

B_t = book value per share at the beginning of year t

r_f = yield on a 10-year Treasury note in June of year t

As explained in the text, we require firms to have positive one-year-ahead ($FEPS_{t+1}$) and two-year-ahead ($FEPS_{t+2}$) earnings forecasts as well as a long-term growth forecast (LTG). However, two models call for the use of earnings forecasts beyond year two. If a forecast is not available in I/B/E/S, we impute it from the previous year's forecast and the long-term growth forecast as $FEPS_{t+\tau} = FEPS_{t+\tau-1}(1 + LTG)$.

Model 1: Claus and Thomas (2001)

This model assumes clean surplus accounting (Ohlson, 1995), allowing share price to be expressed in terms of forecasted residual earnings and book values. The explicit forecast horizon is set to five years, beyond which forecasted residual earnings grow at the expected inflation rate, and dividend payout is assumed to be constant at 50%. The valuation equation is given by:

$$P_t = B_t + \sum_{\tau=1}^5 \frac{ae_{t+\tau}}{(1 + k_{CT})} + \frac{ae_{t+5}(1 + g)}{(k_{CT} - g)(1 + k_{CT})^5} \quad (\text{A.1})$$

where:

$$ae_{t+\tau} = FEPS_{t+\tau} - k_{CT}B_{t+\tau-1},$$

$$B_{t+\tau} = B_{t+\tau-1} + FEPS_{t+\tau}(1 - DPR_{t+\tau}),$$

$$DPR_{t+\tau} = 0.5, \text{ and}$$

$$g = r_f - 0.03.$$

Model 2: Gebhardt, Lee, and Swaminathan (2001)

This model also assumes clean surplus accounting, allowing share price to be expressed in terms of forecasted returns on equity (*ROE*) and book values. The explicit forecast horizon is set to three years, beyond which forecasted *ROE* decays to the median industry *ROE* by the twelfth year, and remains constant thereafter. Dividend payout is again assumed to be constant. The valuation equation is given by:

$$P_t = B_t + \sum_{\tau=1}^{11} \frac{FROE_{t+\tau} - k_{GLS}}{(1 + k_{GLS})} B_{t+\tau-1} + \frac{FROE_{t+12} - k_{GLS}}{k_{GLS}(1 + k_{CT})^{11}} B_{t+11} \quad (A.2)$$

where:

$FROE_{t+\tau}$ = forecasted return on equity for year $t+\tau$,

$B_{t+\tau} = B_{t+\tau-1} + FEPS_{t+\tau}(1 - DPR_{t+\tau})$, and

$DPR_{t+\tau}$ = expected dividend payout ratio in year $t+\tau$.

For the first three years, $FROE_{t+\tau}$ is set equal to $FEPS_{t+\tau}/B_{t+\tau-1}$. Beyond the third year, $FROE$ fades linearly to the industry median *ROE* by the twelfth year. Industries are defined according to the Fama and French (1997) classification and the median industry *ROE* is calculated over the past ten years excluding loss firms.

The expected dividend payout ratio $DPR_{t+\tau}$ is set equal to DPS_0/EPS_0 . If EPS_0 is negative, it is replaced by the value implied by a 6% return on assets (the long-run return on assets in the U.S.). We winsorize payout ratios at zero and one.

Model 3: Ohlson and Juettner-Nauroth (2005)

The model is a generalization of the Gordon constant growth model. It allows share price to be expressed in terms of the one-year-ahead earnings forecast, the near-term and perpetual growth forecasts. The explicit forecast horizon is set to one year, after which forecasted earnings grow at a near-term rate that decays to a perpetual rate. We follow Gode and Mohanram's (2003) implementation of the model. The near-term earnings growth rate is the average of: i) the percentage difference between two-year-ahead and one-year-ahead earnings forecasts, and ii) the I/B/E/S long-term growth forecast. The perpetual growth rate is the expected inflation rate. Dividend per share is assumed to be constant. The model requires positive one-year-ahead and two-year-ahead earnings forecasts. The valuation equation is given by:

$$k_{OJ} = A + \sqrt{A^2 + \frac{FEPS_{t+1}}{P_t} (g_2 - (\gamma - 1))} \quad (\text{A.3})$$

where:

$$A = \frac{1}{2} \left((\gamma - 1) + \frac{DPS_{t+1}}{P_t} \right),$$

$$DPS_{t+1} = DPS_0,$$

$$g_2 = \frac{STG + LTG}{2},$$

$$STG = \frac{FEPS_{t+2} - FEPS_{t+1}}{FEPS_{t+1}}, \text{ and}$$

$$(\gamma - 1) = r_f - 0.03.$$

Model 4: Easton (2004)

This model is a generalization of the Price-Earnings-Growth (PEG) model and is based on Ohlson and Juettner-Nauroth (2005). It allows share price to be expressed in terms of one-year-ahead expected dividend per share, plus one-year-ahead and two-year-ahead earnings forecasts. The explicit forecast horizon is set to two years, after which forecasted abnormal earnings grow in perpetuity at a constant rate. The model requires positive one-year-ahead and two-year-ahead earnings forecasts as well as positive change in earnings forecast. The valuation equation is given by:

$$P_t = \frac{FEPS_{t+2} + k_{ES}DPS_{t+1} - FEPS_{t+1}}{k_{ES}^2} \quad (\text{A.4})$$

where:

$$DPS_{t+1} = DPS_0.$$

Alternative models

We also consider alternative models of the cost of equity. These are used in Table 8.

Gordon Finite Horizon model

This model assumes that dividends grow over an explicit forecasting horizon set to four years, beyond which the firm's return on equity reverts to the expected cost of equity capital. The valuation equation is given by:

$$P_t = \sum_{\tau=1}^4 \frac{DPS_{t+\tau}}{(1 + k_{FHG})^\tau} + \frac{NEPS_{t+1}(1 + LTG)^4}{k_{FHG}(1 + k_{FHG})^4} \quad (A.5)$$

where:

$$DPS_{t+\tau} = DPS_0(1 + LTG)^\tau, \text{ and}$$

$$NEPS_{t+1} = \frac{FEPS_{t+3}}{(1+LTG)^2}.$$

Price-Earnings-Growth (PEG) ratio

This is a special case of the Easton (2004) model assuming no dividend payments. There are two versions of the model. One is based on short-term earnings forecasts and the other on long-term earnings forecasts. The valuation equations are given by:

$$P_t = \frac{FEPS_{t+2} - FEPS_{t+1}}{k_{PEG2}^2}, \text{ and} \quad (A.6)$$

$$P_t = \frac{FEPS_{t+5} - FEPS_{t+4}}{k_{PEG5}^2}. \quad (A.7)$$

Earnings-Price (EP) ratio

This is a special case of the Easton (2004) model assuming that abnormal earnings growth is set to zero. The EP ratio is given by:

$$EPR = \frac{FEPS_{t+1}}{P_t}. \quad (A.8)$$

Appendix B

Qualitative Issue Areas and Controversial Business Issues Definitions

Panel A. Qualitative Issue Areas

We consider six qualitative issue areas: Community, Diversity, Employee Relations, Environment, Human Rights, and Product Characteristics. Each area has a set of strengths and concerns as illustrated below. We calculate a score for each area equal to the number of strengths minus the number of concerns. We also calculate an overall CSR score equal to the sum of all areas' scores.

	Concerns	Strengths
Community	Investment Controversies Negative Economic Impact Indigenous Peoples Relations Tax Disputes Other Concern	Charitable Giving Innovative Giving Non-US Charitable Giving Support for Housing Support for Education Indigenous Peoples Relations Volunteer Programs Other Strength
Diversity	Controversies Non-Representation Other Concern	CEO Promotion Board of Directors Work/Life Benefits Women & Minority Contracting Employment of the Disabled Gay & Lesbian Policies Other Strength
Employee Relations	Union Relations Health and Safety Concern Workforce Reductions Retirement Benefits Concern Other Concern	Union Relations No-Layoff Policy Cash Profit Sharing Employee Involvement Retirement Benefits Strength Health and Safety Strength Other Strength
Environment	Hazardous Waste Regulatory Problems Ozone Depleting Chemicals Substantial Emissions Agricultural Chemicals Climate Change Other Concern	Beneficial Products and Services Pollution Prevention Recycling Clean Energy Communications Property, Plant, and Equipment Other Strength
Human rights	South Africa Northern Ireland Burma Concern Mexico Labor Rights Concern Indigenous Peoples Relations Concern Other Concern	Positive Record in South Africa Indigenous Peoples Relations Strength Labor Rights Strength Other Strength
Product characteristics	Product Safety Marketing/Contracting Concern Antitrust Other Concern	Quality R&D/Innovation Benefits to Economically Disadvantaged Other Strength

Panel B. Controversial Business Issues

We consider six controversial business issues: Alcohol, Gambling, Tobacco, Firearms, Military, and Nuclear Power. Each issue has a set of concerns. We construct a dummy variable for each controversial business issue that equals 1 if the firm is involved in at least one concern, and 0 otherwise. We also construct a dummy variable that equals 1 if the firm is involved in any controversial business issue, and 0 otherwise.

	Concerns
Alcohol	Licensing Manufacturers Manufacturers of products necessary for production of alcoholic beverages Retailers Ownership by an alcohol company Ownership of an alcohol company Alcohol other concern
Gambling	Licensing Manufacturers Owners and operators Supporting products or services Ownership by a gambling company Ownership of a gambling company Gambling other concern
Tobacco	Licensing Manufacturers Manufacturers of products necessary for production of tobacco products Retailers Ownership by a tobacco company Ownership of a tobacco company Tobacco other concern
Firearms	Manufacturers Retailers Ownership by a firearms company Ownership of a firearms company
Military	Manufacturers of weapons or weapons systems Manufacturers of components for weapons or weapons systems Ownership by a military company Ownership of a military company Minor weapons contracting involvement Major weapons-related supplier Military other concern
Nuclear Power	Construction & design of nuclear power plants Nuclear power fuel and key parts Nuclear power service provider Ownership of nuclear power plants Ownership by a nuclear power company Ownership of a nuclear power company Design Fuel cycle/key parts Nuclear power other concern

Appendix C

Variable Definitions and Data Sources

Variable	Definition	Source
Panel A. Dependent variables		
r_{CT}	Implied cost of equity premium defined as the cost of equity derived from the Claus and Thomas (2001) model estimated in June of each year minus the rate on a 10-year Treasury bond.	Authors' calculations based on I/B/E/S and Compustat data
r_{GLS}	Implied cost of equity premium defined as the cost of equity derived from the Gebhardt, Lee, and Swaminathan (2001) model estimated in June of each year minus the rate on a 10-year Treasury bond.	As above
r_{OJ}	Implied equity premium defined as the cost of equity derived from the Ohlson and Juttner-Nauroth (2005) model estimated in June of each year minus the rate on a 10-year Treasury bond.	As above
r_{ES}	Implied cost of equity premium defined as the cost of equity derived from the Easton (2004) model estimated in June of each year minus the rate on a 10-year Treasury bond.	As above
r_{AVG}	Average of r_{GLS} , r_{CT} , r_{OJ} , and r_{ES} .	As above
Panel B. Corporate social responsibility variables		
CSR_COM_S	The Community score equals the number of strengths minus the number of concerns in the Community qualitative issues area.	Authors' calculations based on KLD STATS data
CSR_DIV_S	The Diversity score equals the number of strengths minus the number of concerns in the Diversity qualitative issues area.	As above
CSR_EMP_S	The Employee Relations score equals to the number of strengths minus the number of concerns in the Employee Relations qualitative issues area.	As above
CSR_ENV_S	The Environment score equals the number of strengths minus the number of concerns in the Environment qualitative issues area.	As above
CSR_HUM_S	The Human Rights score equals the number of strengths minus the number of concerns in the Human Rights qualitative issues area.	As above
CSR_PRO_S	The Product score equals the number of strengths minus the number of concerns in the Product qualitative issues area.	As above
CSR_S	The CSR score equals the sum of the Community, Diversity, Employee, Environment, Human Rights, and Product Characteristics qualitative issues areas scores.	As above
CSR_CONTR	Dummy variable set to 1 if the firm is involved in a controversial business issue, and 0 otherwise.	As above
CSR_ALC	Dummy variable set to 1 if the firm is involved in the Alcohol controversial business issue, and 0 otherwise.	As above
CSR_GAM	Dummy variable set to 1 if the firm is involved in the Gambling controversial business issue, and 0 otherwise.	As above
CSR_TOB	Dummy variable set to 1 if the firm is involved in the Tobacco controversial business issue, and 0 otherwise.	As above
CSR_FIR	Dummy variable set to 1 if the firm is involved in the Firearms controversial business issue, and 0 otherwise.	As above
CSR_MIL	Dummy variable set to 1 if the firm is involved in the Military controversial business issue, and 0 otherwise.	As above
CSR_NUC	Dummy variable set to 1 if the firm is involved in the Nuclear controversial business issue, and 0 otherwise.	As above

Panel C. Control variables		
<i>BETA</i>	Market beta obtained from regressions of a firm's monthly excess stock returns on the corresponding CRSP value-weighted index excess returns using at least 24 months and up to 60 months ending in June of each year. Excess returns are monthly returns minus the one-month Treasury bill rate.	Authors' calculations based on CRSP data
<i>SIZE</i>	Natural logarithm of total assets in \$ Million.	Authors' calculations based on Compustat data
<i>BTM</i>	Book value to market value of equity. Book value is defined as the book value of shareholders' equity plus deferred taxes and investment tax credits (if available) minus the book value of preferred stock. Depending on data availability, the book value of preferred stock is defined, in the following order, as the redemption, liquidation, or par value.	As above
<i>LEV</i>	Leverage ratio defined as the ratio of total debt to the market value of equity.	As above
<i>LTG</i>	Average long-term growth forecast reported in June of year <i>t</i> .	I/B/E/S
<i>DISP</i>	Dispersion of analyst forecasts defined as the coefficient of variation of one-year-ahead analyst forecasts of earnings per share in June of year <i>t</i> .	Authors' calculations based on I/B/E/S data
<i>FBIAS</i>	Forecast optimism bias defined as the difference between the one-year-ahead consensus earnings forecast and realized earnings deflated by June-end stock price.	As above
<i>MOM3</i>	Compound stock returns over the past 3 months.	Authors' calculations based on CRSP data
<i>MOM6</i>	Compound stock returns over the past 6 months.	As above
<i>MOM12</i>	Compound stock returns over the past 12 months.	As above
<i>INST</i>	Logarithm of one plus the number of institutional investors.	Authors' calculations based on Thomson 13-F data
<i>CEO_INC</i>	Fraction of the CEO's total compensation arising from a 1% increase in the firm's stock price.	Authors' calculations based on Execucomp data
<i>EI</i>	Bebchuk, Cohen, and Ferrell (2005) index of six antitakeover provisions.	Authors' calculations based on RiskMetrics data
<i>ANA</i>	Logarithm of 1 plus the number of analysts following the firm.	Authors' calculations based on I/B/E/S data
<i>KZ</i>	Kaplan and Zingales' (1997) index of financial constraints as implemented by Lamont et al. (2001).	Authors' calculations based on Compustat data

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Table 1
Sample Breakdown by Industry and Year

Industry	N	%	Industry	N	%
Agriculture	25	0.19	Measuring & Control Equipment	238	1.84
Food Products	269	2.08	Business Supplies	279	2.16
Candy & Soda	24	0.19	Shipping Containers	62	0.48
Beer & Liquor	76	0.59	Transportation	303	2.35
Tobacco Products	25	0.19	Wholesale	348	2.69
Recreation	65	0.50	Retail	896	6.94
Entertainment	116	0.90	Restaurants, Hotels & Motels	218	1.69
Printing & Publishing	249	1.93	Banking	1,299	10.06
Consumer Goods	279	2.16	Insurance	603	4.67
Apparel	223	1.73	Real Estate	14	0.11
Healthcare	173	1.34	Trading	400	3.10
Medical Equipment	335	2.59	Almost Nothing	64	0.50
Pharmaceutical Products	460	3.56	Total	12,915	100
Chemicals	344	2.66			
Rubber & Plastic Products	63	0.49	Year	N	%
Textiles	53	0.41	1992	343	2.66
Construction Materials	230	1.78	1993	351	2.72
Construction	129	1.00	1994	359	2.78
Steel Works Etc	126	0.98	1995	386	2.99
Fabricated Products	10	0.08	1996	415	3.21
Machinery	493	3.82	1997	426	3.30
Electrical Equipment	171	1.32	1998	440	3.41
Automobiles & Trucks	223	1.73	1999	448	3.47
Aircraft	98	0.76	2000	468	3.62
Shipbuilding & Railroad Equipment	56	0.43	2001	446	3.45
Defense	21	0.16	2002	747	5.78
Precious Metals	17	0.13	2003	797	6.17
Non-Metallic & Industrial Metal Mining	28	0.22	2004	1,841	14.25
Coal	27	0.21	2005	1,835	14.21
Petroleum & Natural Gas	382	2.96	2006	1,807	13.99
Utilities	676	5.23	2007	1,806	13.98
Communication	286	2.21	Total	12,915	100
Personal Services	149	1.15			
Business Services	1,113	8.62			
Computers	455	3.52			
Electronic Equipment	722	5.59			

This table presents the industry (according to the 48 industry group affiliations in Fama and French, 1997) and calendar year distributions for the 12,915 firm-year observations comprising the sample between 1992 and 2007.

Table 2*Descriptive Statistics and Correlation Coefficients for Implied Equity Premium Estimates*

Panel A. Descriptive Statistics for Implied Equity Premium Estimates					
Variable	Mean	Q1	Median	Q3	St. Dev.
r_{CT}	3.92	2.51	3.62	4.94	2.62
r_{GLS}	3.76	2.29	3.70	5.09	3.18
r_{OJ}	5.61	4.04	5.14	6.55	2.79
r_{ES}	5.71	3.50	4.92	7.00	3.78
r_{AVG}	4.75	3.28	4.39	5.76	2.40
1992	4.44	2.70	4.00	5.56	2.49
1993	4.80	3.32	4.39	5.69	2.29
1994	3.88	2.52	3.46	4.66	2.25
1995	4.64	3.17	4.16	5.49	2.18
1996	3.51	2.16	3.05	4.44	2.12
1997	3.29	2.16	3.03	4.07	1.71
1998	3.86	2.64	3.62	4.71	1.92
1999	3.48	1.87	3.17	4.49	2.24
2000	4.75	2.52	4.33	6.20	3.45
2001	4.62	2.78	4.28	5.56	2.83
2002	5.07	3.52	4.71	6.00	2.41
2003	6.07	4.58	5.75	7.00	2.36
2004	4.95	3.61	4.58	5.94	2.11
2005	5.40	4.12	5.05	6.30	2.11
2006	4.93	3.56	4.46	5.68	2.45
2007	4.44	3.13	4.09	5.17	2.27
Panel B. Pearson Correlation Coefficients between Implied Equity Premium Estimates					
	r_{CT}	r_{GLS}	r_{OJ}	r_{ES}	
r_{GLS}	0.415				
r_{OJ}	0.453	0.318			
r_{ES}	0.367	0.319	0.908		
r_{AVG}	0.686	0.662	0.877	0.863	

This table presents the cost of equity premium estimates' distribution statistics and correlation coefficients for the 12,915 firm-year sample observations between 1992 and 2007. Panel A provides the mean, first quartile, median, third quartile, and standard deviation. Panel B shows Pearson pair-wise correlations. r_{AVG} is the average implied cost of equity premium obtained from four models developed by Claus and Thomas (2001), Gebhardt, Lee, and Swaminathan (2001), Ohlson and Juettner-Nauroth (2005), and Easton (2004), which we denote r_{CT} , r_{GLS} , r_{OJ} , and r_{ES} , respectively. Appendix A provides details on the implementation of the four models. All correlation coefficients are significant at the 1% level.

Table 3
Descriptive Statistics for Corporate Social Responsibility Data

Panel A. Descriptive Statistics for the Corporate Social Responsibility Score							
	Mean	Min	Q1	Median	Q3	Max	St. Dev.
1992	0.39	-7	-1	0	2	5	1.99
1993	0.44	-7	-1	1	2	7	2.22
1994	0.35	-7	-1	0	2	7	2.43
1995	0.46	-7	-1	0	2	8	2.54
1996	0.86	-7	-1	1	2	11	2.55
1997	0.93	-8	-1	1	2	9	2.34
1998	0.98	-6	0	1	3	10	2.5
1999	0.96	-7	0	1	3	9	2.51
2000	0.97	-7	-1	1	3	11	2.57
2001	0.94	-6	-1	1	2	11	2.56
2002	0.42	-9	-1	0	2	9	2.27
2003	0.33	-9	-1	0	1	9	2.25
2004	-0.08	-9	-1	0	1	10	1.76
2005	-0.25	-8	-1	0	1	11	1.92
2006	-0.17	-8	-1	0	1	11	2.06
2007	-0.17	-8	-1	0	1	15	2.23
All years	0.19	-9	-1	0	1	15	2.22

Panel B. Frequency Distribution for Controversial Business Areas							
Year	CSR_CONTR	CSR_ALC	CSR_GAM	CSR_TOB	CSR_FIR	CSR_MIL	CSR_NUC
1992	12.54%	0.58%	0.29%	0.29%	.	9.91%	2.04%
1993	11.68%	0.85%	0.28%	0.28%	.	8.83%	1.71%
1994	12.81%	0.84%	0.28%	0.56%	.	9.75%	1.67%
1995	11.14%	0.78%	1.04%	0.52%	.	8.03%	1.55%
1996	11.81%	0.72%	1.20%	0.72%	.	8.19%	1.93%
1997	11.97%	0.94%	1.41%	0.70%	.	7.04%	2.58%
1998	10.91%	1.14%	1.14%	0.68%	.	6.14%	2.50%
1999	10.49%	1.12%	0.89%	0.45%	0.00%	4.91%	3.57%
2000	10.68%	1.07%	0.85%	0.64%	0.00%	4.27%	4.06%
2001	12.33%	1.12%	1.35%	0.67%	0.00%	4.93%	4.48%
2002	9.64%	0.94%	1.20%	0.67%	0.27%	3.35%	3.48%
2003	8.91%	0.88%	1.25%	0.50%	0.25%	3.51%	2.89%
2004	7.93%	0.65%	1.36%	0.60%	0.22%	4.13%	1.41%
2005	8.07%	0.71%	1.53%	0.65%	0.27%	4.03%	1.36%
2006	8.36%	0.94%	1.60%	0.44%	0.17%	3.87%	1.83%
2007	7.86%	1.11%	1.33%	0.39%	0.17%	3.54%	1.72%
All years	9.31%	0.88%	1.25%	0.54%	0.19%	4.82%	2.12%

This table presents descriptive statistics for the CSR data for the 12,915 firm-year sample observations between 1992 and 2007. Panel A provides the mean, minimum, first quartile, median, third quartile, maximum, and standard deviation of the overall CSR score by year. Panel B shows the frequency distribution of the controversial business issues by year. Appendix B provides details on the construction of the CSR variables.

Table 4
Descriptive Data for Regression Variables

Panel A. Descriptive Statistics for Control Variables							
	Mean	Min	Q1	Median	Q3	Max	St. Dev.
<i>BETA</i>	1.05	-0.16	0.52	0.91	1.37	3.82	0.76
<i>SIZE</i>	7.85	3.37	6.65	7.73	8.95	14.45	1.70
<i>BTM</i>	0.47	0.01	0.26	0.42	0.61	1.43	0.28
<i>LEV</i>	0.47	0.00	0.05	0.20	0.52	5.81	0.83
<i>LTG</i>	14.21	3.41	10.08	13.08	17.00	38.80	6.28
<i>DISP</i>	0.06	0.00	0.01	0.03	0.06	0.94	0.12

Panel B. Pearson Correlation Coefficients between Regression Variables							
	<i>r_{AVG}</i>	<i>CSR_S</i>	<i>BETA</i>	<i>SIZE</i>	<i>BTM</i>	<i>LEV</i>	<i>LTG</i>
<i>CSR_S</i>	-0.14						
<i>BETA</i>	0.11	-0.01					
<i>SIZE</i>	-0.03	0.13	-0.23				
<i>BTM</i>	0.29	-0.14	-0.12	0.15			
<i>LEV</i>	0.24	0.00	-0.10	0.43	0.32		
<i>LTG</i>	0.04	0.00	0.41	-0.38	-0.36	-0.27	
<i>DISP</i>	0.29	-0.08	0.21	-0.10	0.15	0.07	0.09

This table presents descriptive statistics for the regression variables for the 12,915 firm-year sample observations between 1992 and 2007. Panel A provides the mean, minimum, first quartile, median, third quartile, maximum, and standard deviation of the control variables. Panel B shows Pearson pair-wise correlations between the regression variables. r_{AVG} is the average implied cost of equity premium obtained from four models developed by Claus and Thomas (2001), Gebhardt, Lee, and Swaminathan (2001), Ohlson and Juettner-Nauroth (2005), and Easton (2004). Appendix A provides details on the implementation of the four models. Appendix C outlines definitions and data sources for the regression variables. Correlation coefficients in boldface are significant at the 1% level.

Table 5
Univariate Tests

Panel A. Means							
		<i>N</i>	<i>r_{CT}</i>	<i>r_{GLS}</i>	<i>r_{OJ}</i>	<i>r_{ES}</i>	<i>r_{AVG}</i>
CSR_S ≥ median	(1)	8,065	3.76	3.59	5.40	5.42	4.54
CSR_S < median	(2)	4,850	4.19	4.04	5.97	6.20	5.10
Difference	(1)-(2)		-0.43	-0.45	-0.57	-0.78	-0.56
T-Stat			9.06***	7.87***	11.13***	11.45***	12.84***
Panel B. Medians							
		<i>N</i>	<i>r_{CT}</i>	<i>r_{GLS}</i>	<i>r_{OJ}</i>	<i>r_{ES}</i>	<i>r_{AVG}</i>
CSR_S ≥ median	(1)	8,065	3.52	3.54	5.01	4.72	4.25
CSR_S < median	(2)	4,850	3.83	3.97	5.41	5.33	4.64
Difference	(1)-(2)		-0.31	-0.43	-0.4	-0.61	-0.39
Z-Stat			9.63***	11.16***	11.73***	12.55***	13.32***

This table presents mean (Panel A) and median (Panel B) comparison tests for individual and average cost of equity premium estimates across subsamples of high (above median) and low (below median) CSR score (*CSR_S*). The total sample includes 12,915 firm-years between 1992 and 2007. *r_{AVG}* is the average implied cost of equity premium obtained from four models developed by Claus and Thomas (2001), Gebhardt, Lee, and Swaminathan (2001), Ohlson and Juettner-Nauroth (2005), and Easton (2004), which we denote *r_{CT}*, *r_{GLS}*, *r_{OJ}*, and *r_{ES}*, respectively. Appendix A provides details on the implementation of the four models. *** denotes statistical significance at the 1% level.

Table 6
Corporate Social Responsibility and the Cost of Equity Capital

	CSR_S	CSR_S	1992-1995	1996-1999	2000-2003	2004-2007	CSR_COM_S	CSR_DIV_S	CSR_EMP_S	CSR_ENV_S	CSR_HUM_S	CSR_PRO_S
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
CSR	-0.092*** (-5.855)	-0.045*** (-3.271)	-0.036 (-0.883)	-0.036 (-1.593)	-0.073** (-2.416)	-0.039*** (-2.681)	-0.027 (-0.581)	0.002 (0.073)	-0.077** (-2.332)	-0.157*** (-4.097)	0.065 (0.700)	-0.170*** (-3.838)
BETA		0.156*** (3.631)	0.953*** (4.615)	0.363** (2.353)	0.141 (1.043)	0.122*** (2.853)	0.159*** (3.684)	0.158*** (3.665)	0.154*** (3.587)	0.154*** (3.590)	0.124*** (2.858)	0.156*** (3.623)
SIZE		-0.110*** (-5.114)	0.165** (2.045)	-0.220*** (-4.649)	-0.209*** (-4.428)	-0.128*** (-5.761)	-0.115*** (-5.429)	-0.118*** (-5.158)	-0.116*** (-5.412)	-0.133*** (-6.095)	-0.147*** (-7.012)	-0.141*** (-6.341)
BTM		1.878*** (12.154)	1.683*** (4.631)	1.718*** (5.067)	2.516*** (8.330)	1.334*** (7.269)	1.916*** (12.386)	1.919*** (12.393)	1.906*** (12.344)	1.904*** (12.399)	1.897*** (11.954)	1.904*** (12.445)
LEV		0.686*** (11.070)	0.447*** (3.837)	0.348*** (3.826)	0.555*** (4.888)	0.805*** (11.522)	0.688*** (10.892)	0.688*** (10.848)	0.686*** (10.888)	0.688*** (10.921)	0.695*** (10.420)	0.690*** (10.920)
LTG		0.040*** (5.873)	-0.032 (-1.591)	0.002 (0.120)	-0.020 (-1.522)	0.053*** (7.192)	0.040*** (5.822)	0.040*** (5.811)	0.040*** (5.863)	0.040*** (5.898)	0.042*** (6.209)	0.041*** (5.972)
DISP		4.039*** (11.360)	6.224*** (5.009)	5.126*** (6.531)	4.950*** (7.376)	3.119*** (7.111)	4.049*** (11.380)	4.050*** (11.349)	4.044*** (11.369)	4.016*** (11.290)	3.821*** (10.661)	4.040*** (11.321)
INTERCEPT	3.803*** (8.596)	2.318*** (5.178)	1.055 (1.056)	3.646*** (5.003)	6.474*** (5.254)	2.101*** (4.270)	2.435*** (5.437)	2.469*** (5.474)	2.437*** (5.427)	2.464*** (5.676)	2.668*** (5.384)	2.580*** (5.719)
Year effects	Yes	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	12,915	12,915	1,439	1,729	2,458	7,289	12,915	12,915	12,915	12,915	11,476	12,915
Adj. R ²	0.164	0.332	0.477	0.369	0.360	0.248	0.331	0.331	0.331	0.333	0.328	0.332

This table reports results from regressing the cost of equity premium (r_{AVG}) on CSR scores and controls over the period 1992-2007. r_{AVG} is the average implied cost of equity premium obtained from four models developed by Gebhardt, Lee, and Swaminathan (2001), Claus and Thomas (2001), Ohlson and Juettner-Nauroth (2005), and Easton (2004). Appendix A provides details on the implementation of the four models. Models 1 and 2 use the overall CSR score (CSR_S) for the total sample period. Models 3 through 6 replicate Model 2 after dividing the total sample period into four sub-periods. Models 7 through 12 report in turn the results from regressions of the cost of equity premium on the individual components of CSR_S , namely, community relations (CSR_COM_S), diversity (CSR_DIV_S), employee relations (CSR_EMP_S), environmental performance (CSR_ENV_S), human rights (CSR_HUM_S), and product characteristics (CSR_PRO_S). Appendix C outlines definitions and data sources for the regression variables. Unreported industry controls are based on the Fama and French (1997) industry classification. Robust t -statistics adjusted for clustering by firm are reported inside the parentheses and ***, **, and * denote statistical significance at the 1%, 5%, 10% levels, respectively.

Table 7
Controversial Business Areas and the Cost of Equity Capital

	CSR_CONTR	CSR_ALC	CSR_GAM	CSR_TOB	CSR_FIR	CSR_MIL	CSR_NUC
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CSR	0.173*	0.157	-0.127	1.180***	0.210	0.165	0.249**
	(1.893)	(0.657)	(-0.466)	(2.792)	(0.338)	(1.352)	(2.004)
BETA	0.165***	0.159***	0.158***	0.158***	0.144***	0.164***	0.158***
	(3.781)	(3.679)	(3.664)	(3.676)	(3.215)	(3.751)	(3.677)
SIZE	-0.122***	-0.117***	-0.117***	-0.120***	-0.155***	-0.119***	-0.120***
	(-5.620)	(-5.488)	(-5.426)	(-5.589)	(-7.397)	(-5.572)	(-5.532)
BTM	1.912***	1.918***	1.917***	1.908***	1.884***	1.918***	1.912***
	(12.406)	(12.436)	(12.430)	(12.399)	(11.468)	(12.455)	(12.360)
LEV	0.688***	0.688***	0.688***	0.689***	0.741***	0.688***	0.690***
	(10.888)	(10.852)	(10.849)	(10.869)	(11.131)	(10.861)	(10.883)
LTG	0.040***	0.040***	0.040***	0.039***	0.041***	0.040***	0.040***
	(5.799)	(5.812)	(5.814)	(5.795)	(6.067)	(5.823)	(5.796)
DISP	4.058***	4.051***	4.050***	4.037***	3.615***	4.055***	4.053***
	(11.393)	(11.368)	(11.365)	(11.341)	(9.563)	(11.378)	(11.372)
INTERCEPT	2.500***	2.463***	2.460***	2.489***	2.611***	2.475***	2.489***
	(5.585)	(5.529)	(5.517)	(5.585)	(4.991)	(5.551)	(5.557)
Year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	12,915	12,915	12,915	12,915	10,195	12,915	12,915
Adj. R ²	0.331	0.331	0.331	0.332	0.311	0.331	0.331

This table reports results from regressing the cost of equity premium (r_{AVG}) on indicators for controversial business areas and controls over the period 1992-2007. r_{AVG} is the average implied cost of equity premium obtained from four models developed by Gebhardt, Lee, and Swaminathan (2001), Claus and Thomas (2001), Ohlson and Juettner-Nauroth (2005), and Easton (2004). Appendix A provides details on the implementation of the four models. The controversial business areas are alcohol (CSR_ALC in Model 2), gambling (CSR_GAM in Model 3), tobacco (CSR_TOB in Model 4), firearms (CSR_FIR in Model 5), the military (CSR_MIL in Model 6), and nuclear power (CSR_NUC in Model 7). In Model 1 CSR_CONTR is a dummy variable taking the value of 1 for firms involved in any of the six controversial business areas. Appendix C outlines definitions and data sources for the regression variables. Unreported industry controls are based on the Fama and French (1997) industry classification. Robust t -statistics adjusted for clustering by firm are reported inside the parentheses and ***, **, and * denote statistical significance at the 1%, 5%, 10% levels, respectively.

Table 8

Corporate Social Responsibility and Individual and Alternative Cost of Equity Capital Estimates

	Individual Cost of Equity Estimates				Alternative Cost of Equity Estimates			
	r_{CT}	r_{GLS}	r_{OJ}	r_{ES}	r_{FHG}	r_{PEG2}	r_{PEG5}	EPR
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CSR_S	-0.059*** (-3.873)	-0.027 (-1.393)	-0.040*** (-2.775)	-0.052*** (-2.720)	-0.063*** (-4.610)	-0.050*** (-2.773)	-0.044*** (-3.471)	-0.048*** (-4.267)
BETA	0.018 (0.360)	0.319*** (4.654)	0.013 (0.282)	0.274*** (4.547)	-0.064 (-1.451)	0.451*** (7.816)	0.017 (0.345)	-0.006 (-0.155)
SIZE	-0.031 (-1.236)	-0.152*** (-5.438)	-0.091*** (-3.515)	-0.165*** (-5.380)	-0.002 (-0.067)	-0.182*** (-6.609)	-0.067*** (-2.877)	0.034* (1.765)
BTM	0.517*** (2.845)	3.188*** (12.778)	1.481*** (8.666)	2.326*** (10.960)	1.220*** (7.756)	2.270*** (11.859)	1.204*** (8.717)	0.922*** (7.716)
LEV	0.762*** (12.566)	0.640*** (9.704)	0.613*** (8.105)	0.730*** (7.671)	0.765*** (11.190)	0.622*** (8.833)	0.531*** (12.387)	0.615*** (14.472)
LTG	0.058*** (7.548)	-0.015 (-1.579)	0.084*** (10.718)	0.033*** (3.491)	0.052*** (6.289)	0.077*** (9.202)	0.340*** (32.578)	-0.086*** (-17.446)
DISP	-1.250*** (-3.207)	-0.138 (-0.430)	5.943*** (13.167)	11.601*** (19.511)	-1.321*** (-3.168)	11.172*** (22.101)	-1.587*** (-5.607)	-6.259*** (-34.542)
INTERCEPT	2.019*** (3.839)	2.057*** (3.121)	2.557*** (5.670)	2.639*** (4.738)	0.119 (0.269)	1.909*** (3.772)	0.179 (0.397)	5.350*** (19.633)
Year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	12,915	12,915	12,915	12,915	12,914	12,881	12,699	12,915
Adj. R ²	0.167	0.257	0.275	0.359	0.264	0.428	0.516	0.457

This table presents results from regressing individual cost of equity premium estimates (Models 1-4) and alternative cost of equity premium estimates (Models 5-8) on the overall CSR score (*CSR_S*) and controls over the period 1992-2007. We estimate the cost of equity capital from applications developed by Claus and Thomas (2001) in Model 1, Gebhardt, Lee, and Swaminathan (2001) in Model 2, Ohlson and Juettner-Nauroth (2005) in Model 3, Easton (2004) in Model 4, the finite horizon Gordon model in Model 5, the risk premium implied by the Price-Earnings-Growth (PEG) ratio based on one- and two-year-ahead earnings forecasts in Model 6 and four- and five-year-ahead earnings forecasts in Model 7, and the earnings-to-price ratio in Model 8. Appendix A provides details on the implementation of the four models. Appendix C outlines definitions and data sources for the regression variables. Unreported industry controls are based on the Fama and French (1997) industry classification. Robust *t*-statistics adjusted for clustering by firm are reported inside the parentheses and ***, **, and * denote statistical significance at the 1%, 5%, 10% levels, respectively.

Table 9
Robustness to Analyst Forecast Optimism

	Forecast optimism bias less than j th percentile				Long-term growth forecast less than j th percentile				
	j=95% (0.031)	j=90% (0.017)	j=75% (0.004)	j=50% (0.000)	j=95% (26.22)	j=90% (22)	j=75% (17)	j=50% (13.09)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
CSR_S	-0.045*** (-3.383)	-0.040*** (-3.163)	-0.036*** (-2.850)	-0.037*** (-2.916)	-0.036** (-2.275)	-0.043*** (-3.197)	-0.043*** (-3.169)	-0.040*** (-2.827)	-0.030* (-1.787)
BETA	0.162*** (3.783)	0.124*** (2.969)	0.134*** (3.156)	0.122*** (2.632)	0.105* (1.907)	0.193*** (4.378)	0.205*** (4.389)	0.212*** (3.669)	0.251*** (2.951)
SIZE	-0.084*** (-4.026)	-0.089*** (-4.368)	-0.075*** (-3.720)	-0.066*** (-3.140)	-0.082*** (-3.324)	-0.115*** (-5.468)	-0.106*** (-4.946)	-0.098*** (-4.230)	-0.059** (-2.133)
BTM	1.743*** (11.458)	1.858*** (12.436)	1.796*** (11.853)	1.740*** (10.969)	1.686*** (9.089)	1.833*** (11.553)	1.794*** (10.964)	1.704*** (9.778)	1.360*** (6.412)
LEV	0.586*** (10.847)	0.607*** (10.972)	0.592*** (10.502)	0.567*** (9.851)	0.542*** (8.640)	0.667*** (10.922)	0.653*** (10.581)	0.632*** (10.232)	0.592*** (8.655)
LTG	0.041*** (6.004)	0.043*** (6.326)	0.042*** (5.965)	0.038*** (5.083)	0.032*** (4.049)	0.027*** (3.434)	0.025*** (2.736)	0.024* (1.879)	0.026 (1.282)
DISP	3.285*** (10.127)	3.302*** (9.300)	3.226*** (8.518)	3.391*** (7.960)	3.403*** (8.328)	4.461*** (11.425)	4.629*** (11.051)	5.058*** (10.704)	6.006*** (10.470)
FBIAS	30.666*** (15.189)								
INTERCEPT	2.263*** (5.849)	2.300*** (6.656)	2.257*** (6.529)	1.995*** (5.751)	1.829*** (4.768)	2.498*** (5.385)	2.385*** (5.006)	2.309*** (4.344)	1.078 (1.403)
Year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	12,290	11,676	11,061	9,217	5,890	12,270	11,603	9,670	6,461
Adj. R ²	0.376	0.326	0.324	0.335	0.326	0.344	0.351	0.368	0.379

This table examines the robustness of the results in Table 6, Model 2 to analyst forecast optimism. The dependent variable r_{AVG} is the average implied cost of equity premium obtained from four models developed by Gebhardt, Lee, and Swaminathan (2001), Claus and Thomas (2001), Ohlson and Juettner-Nauroth (2005), and Easton (2004). Appendix A provides details on the implementation of the four models. Model 1 controls for forecast optimism bias (*FBIAS*). Models 2 to 5 exclude observations in the top 5%, 10%, 25%, and 50% of the *FBIAS* distribution, respectively. Models 6 to 9 exclude observations in the top 5%, 10%, 25%, and 50% of the long-term growth forecast distribution (*LTG*), respectively. Appendix C outlines definitions and data sources for the regression variables. Unreported industry controls are based on the Fama and French (1997) industry classification. Robust t -statistics adjusted for clustering by firm are reported inside the parentheses and ***, **, and * denote statistical significance at the 1%, 5%, 10% levels, respectively.

Table 10
Robustness to Analyst Forecast Sluggishness

	(1)	(2)	(3)	(4)
CSR_S	-0.042*** (-2.987)	-0.045*** (-3.299)	-0.046*** (-3.306)	-0.048*** (-3.507)
BETA	0.015 (0.347)	0.131*** (3.092)	0.133*** (3.077)	0.152*** (3.494)
SIZE	-0.082*** (-3.789)	-0.103*** (-4.823)	-0.097*** (-4.471)	-0.102*** (-4.696)
BTM	2.223*** (13.905)	1.968*** (12.632)	1.947*** (12.410)	1.705*** (10.881)
LEV	0.750*** (11.765)	0.721*** (11.224)	0.736*** (11.368)	0.711*** (11.236)
LTG	0.055*** (7.857)	0.045*** (6.632)	0.047*** (6.872)	0.049*** (7.141)
DISP	2.963*** (9.049)	3.840*** (10.869)	3.687*** (10.394)	3.616*** (10.100)
MOM3		-3.051*** (-19.486)		
MOM6			-2.281*** (-20.414)	
MOM12				-1.177*** (-16.005)
INTERCEPT	2.201*** (5.432)	2.493*** (5.523)	2.414*** (5.348)	2.399*** (5.363)
Year effects	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes
N	12,879	12,900	12,900	12,900
Adj. R ²	0.363	0.363	0.367	0.355

This table examines the robustness of the results in Table 6, Model 2 to analyst forecast sluggishness. The dependent variable r_{AVG} is the average implied cost of equity premium obtained from four models developed by Gebhardt, Lee, and Swaminathan (2001), Claus and Thomas (2001), Ohlson and Juettner-Nauroth (2005), and Easton (2004). Appendix A provides details on the implementation of the four models. Model 1 re-estimates the implied cost of equity using January-end prices instead of June-end prices. Models 2 through 4 control for price momentum computed as the compounded returns over the past 3, 6, and 12 months, respectively. Appendix C outlines definitions and data sources for the regression variables. Unreported industry controls are based on the Fama and French (1997) industry classification. Robust t -statistics adjusted for clustering by firm are reported inside the parentheses and ***, **, and * denote statistical significance at the 1%, 5%, 10% levels, respectively.

Table 11
Robustness to Endogeneity

	VAR = INST	VAR = CEO_INC	VAR = EI	VAR = ANA	VAR = KZ	IV	GMM
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CSR_S	-0.033** (-2.546)	-0.048*** (-3.076)	-0.039*** (-2.734)	-0.042*** (-3.119)	-0.054*** (-3.749)	-0.090** (-1.989)	-0.080** (-2.387)
BETA	0.189*** (4.370)	0.115** (2.133)	0.139*** (2.772)	0.198*** (4.656)	0.107** (2.375)	0.153*** (3.557)	0.371*** (5.043)
SIZE	0.260*** (4.910)	-0.049* (-1.783)	-0.081*** (-3.151)	-0.012 (-0.410)	-0.166*** (-7.070)	-0.102*** (-4.494)	0.228*** (10.612)
BTM	1.343*** (7.696)	2.045*** (11.118)	1.932*** (11.284)	1.746*** (10.971)	1.847*** (11.430)	1.837*** (11.659)	3.304*** (12.225)
LEV	0.578*** (9.595)	0.538*** (7.296)	0.628*** (9.239)	0.645*** (10.396)	0.627*** (6.906)	0.684*** (11.218)	0.634*** (5.974)
LTG	0.046*** (6.853)	0.062*** (6.577)	0.040*** (4.915)	0.045*** (6.654)	0.035*** (4.956)	0.040*** (5.914)	0.116*** (13.334)
DISP	3.818*** (10.932)	4.586*** (10.936)	4.460*** (11.558)	4.055*** (11.363)	3.857*** (11.454)	4.031*** (11.334)	4.633*** (6.682)
VAR	-0.876*** (-8.156)	-1.047*** (-7.017)	0.009 (0.396)	-0.340*** (-5.462)	0.160*** (4.227)		
Lag(r_{AVG})							-0.401*** (-7.241)
INTERCEPT	4.055*** (8.146)	2.084*** (3.802)	2.233*** (4.585)	2.217*** (5.150)	2.629*** (4.971)	2.169*** (4.634)	
Year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes	Yes	Yes	No
N	12,903	7,813	10,499	12,915	10,692	12,914	9,603
Adj. R ²	0.342	0.381	0.356	0.336	0.341	0.334	

This table examines the robustness of the results in Table 6, Model 2 to omitted variables and reverse causality bias. The dependent variable r_{AVG} is the average implied cost of equity premium obtained from four models developed by Gebhardt, Lee, and Swaminathan (2001), Claus and Thomas (2001), Ohlson and Juettner-Nauroth (2005), and Easton (2004). Appendix A provides details on the implementation of the four models. Models 1 through 5 separately include as an additional control (VAR) the logarithm of one plus the number of institutional investors (*INST*), the fraction of CEO compensation arising from a 1% increase in the stock price (*CEO_INC*), Bebchuk et al.'s (2009) antitakeover provisions index (*EI*), the logarithm of one plus the number of analysts following the firm (*ANA*), and Kaplan and Zingales' (1997) index of financial constraints (*KZ*), respectively. Model 6 uses the instrumental estimation approach. Model 7, which includes the lagged risk premium ($Lag(r_{AVG})$) as an explanatory variable, is estimated using the system GMM technique after Blundell and Bond (1998). Appendix C outlines definitions and data sources for the regression variables. Unreported industry controls are based on the Fama and French (1997) industry classification. Robust *t*-statistics adjusted for clustering by firm are reported inside the parentheses and ***, **, and * denote statistical significance at the 1%, 5%, 10% levels, respectively.