Firm-value effects of CSR disclosure and CSR performance

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ABSTRACT

We examine in this paper the effects of corporate social responsibility (CSR) disclosure and CSR performance on firm value for S&P 500 firms from 2011 to 2014. We find that CSR disclosure is positively associated with firm value and that the effect of CSR disclosure on firm value is larger than the effect of CSR performance. On average, the overall firm value increase for one index point of Bloomberg's environmental, social, and governance (ESG) Disclosure Score is $260 million, whereas the increase for one index point of the Asset4 ESG Performance Score is below $90 million. Moreover, we find that CSR performance scores related to the environment and governance are positively associated with firm value while the social score is negatively associated. Our results suggest that CSR disclosure mediates CSR performance. Based on prior research, we argue that CSR disclosure tends to be positively biased and too complex to be processed properly. We conclude that a relatively high amount of CSR disclosure is misinterpreted as good CSR performance.

Key Words: corporate social responsibility; CSR, ESG; firm value; voluntary disclosure.
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I. Introduction

The steady increase in requirements by governments and stock exchanges for public information on corporate social responsibility (CSR) suggests the growing importance of CSR-related transparency and a heightened interest in high-quality CSR disclosure, in both CSR-specific and integrated reports.[1] International CSR reporting standards, primarily the Global Reporting Initiative's G4 standards and the International Integrated Reporting Framework crafted by the International Integrated Reporting Committee (IIRC), have been set up in an effort to regulate CSR disclosure in a comprehensive fashion. Whereas the sheer quantity of extensive CSR disclosure runs the risk of being too complex to be processed properly by stakeholders, high quality CSR reporting should reduce discretionary and opportunistic CSR disclosure to properly reflect CSR performance.

Despite an enormous amount of literature on firms' environmental CSR activities and the effect of their disclosure, primarily on firm performance and cost of capital but seldom on firm value, the effect of CSR disclosure and the directional effect of specific CSR activities—environmental, social, or governance (ESG)—on firm value is unclear and remains an open empirical question. A large amount of disclosed CSR information might be (mis-)interpreted by both shareholders and non-shareholders, given that the public is a primary stakeholder of CSR reporting, as 'good' CSR

[1] The Hauser Institute of the Harvard Kennedy School provides detailed information on the status quo of CSR disclosure requirements of governments and stock exchanges. The report is accessible at http://iri.hks.harvard.edu/csr (as of October 7, 2016).

performance and thus generate higher firm values. We investigate the effect of CSR disclosure and CSR performance on firm value, especially the relative effects of the two metrics.

Managers act primarily in the interests of shareholders, but they are constrained by regulations like environmental standards, human rights codes, and general business law or public interests. Transparency through disclosure allows for public monitoring and may reduce the necessity of detailed regulations for non-legitimate actions through law. The public's (i.e., non-shareholders') need for transparency regarding management's CSR activities may appear to be in conflict with the idea of creating value for shareholders, but the literature also suggests that CSR disclosure may serve both the needs of the public and of shareholders (Huang and Watson 2015). Transparent CSR activities are thought to create a certain amount of tension between the public's needs and shareholders' interests, but can also serve to align the interests of the public and the shareholders, so that both may benefit from CSR activities. For example, when a firm improves the control of natural resources and avoids environmental damage, it serves the public. At the same time, it avoids litigation risks and reputational damage to the firm, which is valuable to shareholders. Firms may also use CSR activities for brand building to attract and retain customers and employees (Castelo Branco and Lima Rodrigues 2006; Porter and Kramer 2006; Porter and Kramer 2011). On the other hand and from the shareholder’s perspective alone, CSR activities that have no return or reduce future economic benefits may result in reduced firm value.

In addition, CSR disclosure can be considered another piece of fundamental information provided to shareholders. It may complement information obtained from standard financial statements and

annual reports. It also informs existing or potential shareholders about CSR-related firm value. If of high quality, CSR disclosure is helpful to investors when assessing CSR performance and fundamental long-term firm value; however, managers may attempt to use CSR disclosure opportunistically to report good news rather than bad news (Verrecchia 1983). Alternatively, they may report bad news in a way that is too positive or provide information in a manner that is too complex to be processed properly by investors. If so, the mere disclosure of CSR activities may be interpreted as good CSR performance and mislead investors in their judgments of the potential long-term risks of their investments.

We analyze the impact of the extent of CSR-related disclosure and the impact of CSR performance on firm value using S&P 500 firms for the years 2011 to 2014. We apply panel data regression and use a modified version of the Ohlson model (1995) to analyze the impact of CSR disclosure and performance on firm value. We find that both CSR disclosure and performance affect firm value, but that the relative effect of CSR disclosure is larger than the total effect of the individual dimensions of CSR performance. The CSR disclosure level is measured by Bloomberg's ESG Disclosure Score, while CSR performance is measured by Thomson Reuters' ESG ASSET4 score, as obtained from Datastream consistent with Lys, Naughton, and Wang (2015). For each index point improvement on the disclosure index, the firm value increases by US$260 million. For each index point of improvement in the performance score of the environmental dimension, firm value increases by $109 million; it decreases by $82 million for the social dimension and, even though not statistically significant, increases by $64 million for the governance dimension.

In addition, our study differs from previous studies in that we consider the environmental, social, and governance dimensions in one study. Most prior research focuses only on the environmental dimension (Al-Tuwaijri, Christensen, and Hughes 2004; Cho et al. 2012; Matsumura, Prakash, and Vera-Muñoz 2014; Sharfman and Fernando 2008). The social dimension is seldom directly related to firm value (Holder-Webb et al. 2009), while the governance dimension has not been considered in the CSR context. In our study, we report on the impact of CSR disclosure and performance on firm value by considering all three dimensions. It makes sense to consider all three in one study because the effects on firm value differ for each dimension. The extensive prior literature has already investigated firm value and individual drivers of the social and governance dimensions, as with corruption and gender. However, no study to our knowledge has considered the combined effect as captured in the indexes used in the present study.

A study focusing on all three dimensions leads to a holistic and consistent analysis of firms' non-financial activities and their effects, which can differ among the dimensions. Previous studies primarily investigated the CSR disclosure effects on firm performance, on stock volatility, on growth, or on some combination of the three; they did not address firm value directly. Moreover, prior studies have focused primarily on voluntary CSR disclosure. Even though peer pressure and public awareness does not make disclosure technically mandatory, the S&P 500 firms are de facto required to accept the G4 and the IIRC standards when reporting their CSR activities. Furthermore, Securities and Exchange Commission and Environmental Protection Agency (EPA)

regulations require[2] the disclosure and achievement of certain CSR activities, such as the EPA's rule on mandatory reporting of greenhouse emissions (Environmental Protection Agency 2009; Matsumura, Prakash, and Vera-Muñoz 2014).

II. Framework and Hypothesis Development

A firm's fundamental value is a function of future economic benefits, the growth of future economic benefits, and the cost of capital (Damodaran 2006; Palepu and Healy 2013; Penman 2013). If CSR activities affect future economic benefits, the cost of capital, and growth, firms' fundamental value will also depend on firms' CSR activities. Examples of CSR activities with an impact on future economic benefits, the cost of capital, growth, and thus on fundamental firm value may include:

- Those that generate future economic benefits, including management practices that improve reputation and increase customer loyalty, e.g., by corporate environmental policies, sustainable products, and innovative CSR-related technologies, which ultimately produce revenues (or reduce costs) and generate operating cash flow.
- As such activities always come at a cost, whether in social engagement, new technology, research and development, or training, and in surveillance and monitoring of corruption avoidance and for the control of CSR-related resources, some CSR activities may simply be additional costs to corporations that do not generate anticipated payoffs or respond to

[2] E.g., SEC's Guidance Regarding Disclosure Related to Climate Change or EPA 40 CFR Part 9, respectively.

public pressure. Hence, CSR activities also result in an outflow of resources or may be an investment with no return, reducing future economic benefits.

- Those activities that influence the cost of capital involve management practices that avoid environmental, societal, governance risk, or reputational risk or reduce the cost of capital by achieving a competitive advantage, such as a technological edge, which reduces the operational risk and thus the cost of capital.
- Some strategies may enhance resource creation and grow earnings and free cash flow by ensuring short- and long-term growth through competitive advantages, reputation, and the anticipation of changes in areas such as the regulatory environment.

Management will incorporate CSR activities into their practices if they increase fundamental firm value or if the public or shareholders demand that they do so.

Stock prices reflect fundamental value if value-relevant information is disclosed and if markets are able to process that information properly. Therefore, the reflection of CSR-related fundamental value in stock prices depends on the quality of CSR disclosure and the ability of market participants to process any disclosed CSR information properly. If that information is not processed properly, stock prices will deviate from their fundamental values.

If CSR activities generate public value and increase value for shareholders at the same time, management will report these CSR activities properly; however, if CSR performance reduces shareholder value, managers will have little incentive to disclose CSR information properly.

Depending on the quality of CSR disclosure, which is influenced by standard-setting activities, discretion to report is opportunistically reduced.

Figure 1 illustrates our framework for the firm value effects of CSR disclosure and CSR performance.

INSERT FIGURE 1

CSR Performance and Firm Value

The management of CSR activities affects corporate financial performance (Balakrishnan, Sprinkle, and Williamson 2011; Borghesi, Houston, and Naranjo 2014; Elliott et al. 2013; Flammer 2015; Henri and Journeault 2010; Klassen and McLaughlin 1996). Research can be classified into studies that investigate the direct or indirect (e.g., reputation; see Herremans, Akathaporn, and McInnes 1993) financial impact of CSR performance (e.g., Matsumura, Prakash, and Vera-Muñoz 2014; Sharfman and Fernando 2008) and of CSR disclosure (Dhaliwal et al. 2011; Dhaliwal et al. 2012) or both (Cho et al. 2012; Patten 2002). In sum, the literature suggests a tentatively positive relationship between CSR activities, mostly in the environmental context, and financial performance and/or firm value based on market and accounting measures (Margolis, Elfenbein, and Walsh 2009; Orlitzky, Schmidt, and Rynes 2003).

Nevertheless, there is also a school of thought associated with Milton Friedman that argues that investments in CSR activities reduce firm value because disposable cash flows to shareholders are diminished (Clacher and Hagendorff 2012; Friedman 1970). However, this logic only holds true if CSR investments (1) do not generate returns above a firm's capital costs and (2) have lower returns than alternative opportunities in which a firm could invest (Margolis, Elfenbein, and Walsh 2009; Smith 2003). Even if a firm invests in CSR activities for which these conditions hold true, investors can underestimate their attractiveness, as it is difficult for them to evaluate the long-term effects of CSR investments. The existing literature suggests that a firm's CSR performance affects:

- future economic benefits (Al-Tuwaijri, Christensen, and Hughes 2004; Clarkson, Li, and Richardson 2012; Cormier and Gordon 2001; Herremans, Akathaporn, and McInnes 1993; Dhaliwal et al. 2011; Orlitzky, Schmidt, and Rynes 2003);
- the cost of capital (Anderson and Frankle 1980; Casey and Grenier 2015; Dhaliwal et al. 2011; Klassen and McLaughlin 1996; Plumlee et al. 2015; Richardson and Welker 2001); and the
- growth of a firm (Huang and Watson 2015, 12).

More concretely, most studies of environmental CSR performance find a positive association between that performance and financial performance and/or firm value (Al-Tuwaijri, Christensen, and Hughes 2004; Matsumura, Prakash, and Vera-Muñoz 2014; Sharfman and Fernando 2008). Social performance has a negative effect, according to Richardson and Welker (2001). Other studies in this area find that certain aspects of social dimensions, such as gender (Post 2015), are

positively related to firm value. We do not predict any specific directional effect of social performance. A vast amount of literature investigates corporate governance in general (Cohen 2004); to our knowledge, however, no study focuses on governance in the context of CSR activities and firm value. We include the governance dimension, as we want to approach firms' CSR activities holistically. If management practices increase corporate governance by fostering sustainable strategies, which would put weight on a long-term economic focus, a positive association with firm value is suggested. Therefore, we hypothesize that the CSR performance affects firm value, as stated in hypothesis 1 and related hypotheses:

H1: The overall effect of CSR performance on firm value differs from zero.

H1a: The effect of environmental CSR performance on firm value is positive.

H1b: The effect of social CSR performance on firm value differs from zero.

H1c: The effect of governance-related CSR performance on firm value is positive.

CSR Disclosure and Firm Value

In addition to standard financial statements, CSR disclosures may deliver information that assists in forecasting future economic benefits, the cost of capital, and the growth rate. This is because CSR reports communicate management practices to avoid risk, generate incentives to control risk, and provide information on a firm's workforce, its customers, and society. CSR information may improve a firm's public reputation and thus long-term shareholder value.

From an investor's point of view, CSR performance must be fairly disclosed to be useful: "Information is gold to the investor" (Penman 2013, 6). CSR disclosure assists investors in assessing the fundamental value of a firm through identifying sustainable management practices or contingent liabilities, such as litigation, which offset 'intangible assets' that may result from a lack of regulation or enforcement like protecting against environmental damages or the human rights violations. Much like financial reporting, CSR disclosure should contain reliable and relevant information on actual CSR performance rather than simply enumerating activities that might fall under CSR. Fair presentation prevents firms from using CSR disclosure as a marketing tool to hide poor CSR performance (Cho et al. 2012, 15). If CSR disclosure is fairly presented and thus of high quality, it can increase information efficiency and reduce transaction costs through by information asymmetries.

However, managers may use discretionary CSR disclosure requirements opportunistically (Blacconiere and Patten 1994). The literature suggests that they may have a positively biased perception of their CSR activities (Cormier, Gordon, and Magnan 2004). Moreover, firms with

poor CSR performance, generally in the environmental dimension, disclose more CSR information (Clarkson et al. 2008; Henri and Journeault 2010; Patten 2002; Skinner 1994) using optimistic language and less certainty than better-performing firms (Cho, Roberts, and Patten 2010). Therefore, CSR information may contain positively biased information when CSR information is discretionary and when management prefers to communicate positive rather than negative information (Cho et al. 2012; Balakrishnan, Ingram and Frazier 1980; Sprinkle, and Williamson 2011; Verrecchia 1983). This bias may result in forecast errors and ultimately in a higher cost of capital. Research suggests that the CSR disclosure of firms with poor CSR performance results in higher forecast errors compared to firms with superior CSR performance (Dhaliwal et al. 2011). Hence, investors may have difficulties processing CSR information appropriately (Elliott et al. 2013). A high level of CSR disclosure may suggest superior CSR performance, but the open empirical question remains as to whether investors rely on the mere volume of CSR disclosure or whether they assess CSR performance regarding its impact on fundamental firm value. Therefore, we hypothesize that and investigate whether CSR disclosure is positively associated with firm value and that the effects of CSR disclosure effect on firm value will be stronger for low-performing firms than high CSR performers:

H2: CSR disclosure is positively associated with firm value.

H2a: Effects of CSR disclosure on firm value will be stronger for low-performing CSR firms than high CSR performers.

Moreover, if investors tend to conflate CSR disclosure with CSR performance, CSR disclosure effect on firm value will prevail over the CSR performance effect. Therefore, we hypothesize that the firm value effect of CSR disclosure will, ceteris paribus, prevail over the effect of CSR performance:

H3: The firm value effect of CSR disclosure will prevail over the effect of CSR performance.

III. Research Method

Sample

Our analysis is based on the firms in the S&P 500 Index. We choose the S&P 500 Index composition as of January 2014 for the data sample, as it marks the middle of the observed period. We analyze these firms for the fiscal years 2011 to 2014, because it is most recent period, and covering four years makes our approach becomes more reliable and more statistically robust.

We choose the firms of the S&P 500 Index for three reasons: (1) it contains the 500 largest companies in the world's most important economy, which means they have significant impact; (2) historic data on both CSR disclosure levels and on actual CSR performance were available for all firms in the index; (3) recent studies have also chosen the S&P 500 Index firms for their samples (Dhaliwal et al. 2011; Matsumura, Prakash, and Vera-Muñoz 2014; Sharfman and Fernando 2008), which makes our results comparable to other studies.

Empirical Model

For the analysis of CSR disclosure and CSR performance effects on firm value, we use a modified version of the Ohlson (1995) model. Firm value is proxied by market capitalization explained by net assets, operating income, size, and industry and firm fixed effects. Like Matsumura et al.'s (2014) addition of carbon emissions to the Ohlson model, we add CSR disclosure and performance to analyze the firm value effects of environmental CSR:

$$VALUE_{i,t} = ß_{0,i,t} + ß_1 DISC + ß_2 SOC + ß_3 GOV + ß_4 ENV + ß_5 N\_ASSET + ß_6 EBIT + ß_7 SIZE + \varepsilon_{i,t}$$

We run two regressions to test our model. Model 1 uses CSR disclosure as the independent variable and includes CSR performance measured separately for all three ESG dimensions. (2) Model 2 separates the effect of CSR disclosure based on firms' being high or low CSR performers. We use CSR performance to distinguish between good news and bad news since the market might process CSR information differently when it is good or bad news.

Variables

Firm Value

Firm value, the dependent variable in our analyses, is calculated as the average firm value of common equity in the second, third, and fourth months after the end of the fiscal year by

multiplying the common shares outstanding with the share price at the end of each month. Both metrics were retrieved from Thomson Reuters' database as of January 5, 2016.

CSR Disclosure Score

The CSR disclosure score measures the "extent of a company's environmental, social, and governance (ESG) disclosure", as Bloomberg describes it, as of January 5, 2016. Bloomberg's ESG Disclosure Score ranges from 0.1 to 100. Companies that disclose little ESG information score low, while companies that disclose extensively score high. The score is adjusted to different industries by Bloomberg, which ensures each company is evaluated only on data that are relevant to its particular sector. Furthermore, the score weighs each data point by its importance. It must be emphasized that Bloomberg's CSR Disclosure Score by measures CSR disclosure level but not its quality. The quality of disclosure will depend on the quality of CSR disclosure standards and their enforcement.

CSR Performance Score

CSR performance is measured on a scale from 0 to 100 using data from the Thomson Reuters ASSET4 ESG database. Even though accounting literature also uses MSCI ESG Stats (formerly known as KLD) (Huang and Watson 2015), MSCI ESG Stats does not provide the aggregate measure for all three dimensions available in both ASSET4 and Bloomberg; Lys et al. also use Asset 4; a detailed description is available in their paper (Lys, Naughton, and Wang 2015). The database that we assessed through Datastream provides information on a company's economic,

social, environmental, and corporate governance-related performances, and the ASSET4 ESG database provides separate scores for each of these four dimensions.

The environmental score quantifies the consequences of a company's performance on living and non-living natural systems, with a low score indicating the existence of environmental risks. The corporate governance score evaluates a company's processes and structures to ensure that the board's interests are aligned with those of long-term shareholders. The social score reflects a company's attitude and behavior toward its employees, customers, and society. We include firm fixed effects in the regression analysis.

IV. Results

Descriptive Statistics

Tables 1 to 3 provide descriptive summary statistics for the firms and variables used in the regression analysis. The tables show the development of the independent and the dependent variables for the analyzed period and the correlation matrix. Table 3 reports both the Pearson and Spearman correlations; the relatively small differences between the two suggest nearly linear relations among the variables, as we suppose in the model. The average CSR disclosure increases at a moderate but continuous rate.

INSERT TABLE 1

INSERT TABLE 2

INSERT TABLE 3

Firm Value Effects of CSR Performance (H1, H1a-c)

Hypothesis 1 predicts that the overall effect of CSR performance on firm value differs from zero, while H1a—H1c propose that environmental and governance performance will be positively associated with firm value and negatively associated with social CSR performance. Table 4 displays the results of the regression analysis, which supports our H1 and H1a—H1c. CSR performance is associated with firm value, and the three individual EGS dimensions include the expected signs of environmental and governance performance being positively associated with firm value and social performance negatively affecting firm value. While it may be striking that there is a negative association between social CSR performance and firm value, this result is consistent with Richardson and Welker's findings (2001).

Firm Value Effects of CSR Disclosure and Its Relation to CSR Performance (H2, H3)

Hypothesis 2 predicts that CSR disclosure is positively associated with firm value. The regression analysis in Table 4 supports this hypothesis. To investigate H2, we separate the disclosure effect

of high and low CSR performers. The coefficients of DISC_TOP and DISC_BOT are statistically significant and suggest a positive association between CSR disclosure level and firm value. Empirically, an improvement of one index point in the CSR disclosure score of low performers (DISC_BOT) increases firm value by $322 million, while an improvement of one index point of the CSR disclosure score of high performers (DISC_TOP) increases firm value by $199 million. This supports H2a, which posits that the CSR disclosure effect on firm value will be stronger for low-performing CSR firms than for high CSR performers, despite a lack of significance regarding the difference between DISC_TOP and DISC_BOT (p = 0.26).[3] This finding is particularly important, as it suggests that low-performing firms can increase firm value simply by increasing their CSR disclosure level.

Hypothesis 3 predicts that firm value effects of CSR disclosure prevail over the effect of CSR performance. This hypothesis is supported by the regressions in Table 4, since the coefficients of the CSR disclosure effects in total—the average of DISC_TOP and DISC_BOT—are larger than the sum of the coefficients of CSR performance (ENV, SOC and GOV). Again, this finding is of importance, as it shows that CSR disclosure generates more firm value than actual CSR performance. More specifically, the average disclosure effect brings $260 million in firm value, whereas the total effect of all ESG performance dimensions is below $90 million.

[3] Common statistical test for the difference between the coefficients of DISC_TOP and DISC_BOT.

INSERT TABLE 4

V. Conclusion and Discussion

We analyzed the firm value effects of CSR disclosure and CSR performance, measured by the three ESG dimensions, for S&P 500 firms for the fiscal years 2011 to 2014. We found that CSR disclosure is positively associated with firm value and that the firm value effect of CSR disclosure is substantially more powerful the firm value effect of CSR performance. The overall firm value increase for one index point of Bloomberg's ESG disclosure score is $260 million, whereas the average increase for one index point of the Asset4 ESG Performance Score is much lower (the sum of the performance coefficients ranges between $34 million and $90 million).

If disclosure level eclipses performance in this way, our findings raise the question of whether CSR standards present CSR performance fairly to serve the needs of both shareholders and the public for reliable, unbiased, and useful information. Most CSR disclosures have more than 200 pages and contain information that is connected only loosely to CSR performance. Considering this fact, its usefulness for either shareholders or the public is particularly questionable. Do financial analysts use this information for valuation, or is CSR disclosure used as a marketing instrument to hide poor CSR performance? Our findings are mostly consistent with suggestions in previous literature that managers may try to use CSR disclosure opportunistically to report good news instead of bad news and that market participants have difficulties processing CSR information.

Our findings are limited to the CSR disclosure of S&P 500 firms, which are subject to the relatively unregulated CSR disclosure environment that is the US capital market. Even if public pressure

and monitoring may require quasi-mandatory disclosure, the CSR disclosure of US firms may differ from mandatory disclosure in the European Union (Directive 2013/34/EU), or as exists in countries like Norway and Australia that mandate the disclosure of CSR information.

In sum, and expressed with the words used in Cho et al. (2012, 14), we conclude that with regard to the firm value effect of CSR disclosure and CSR performance, "words currently speak louder than actions." Future research is required, particularly related to the fair presentation and usefulness of disclosed CSR information.

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Appendix A: Figures and Tables

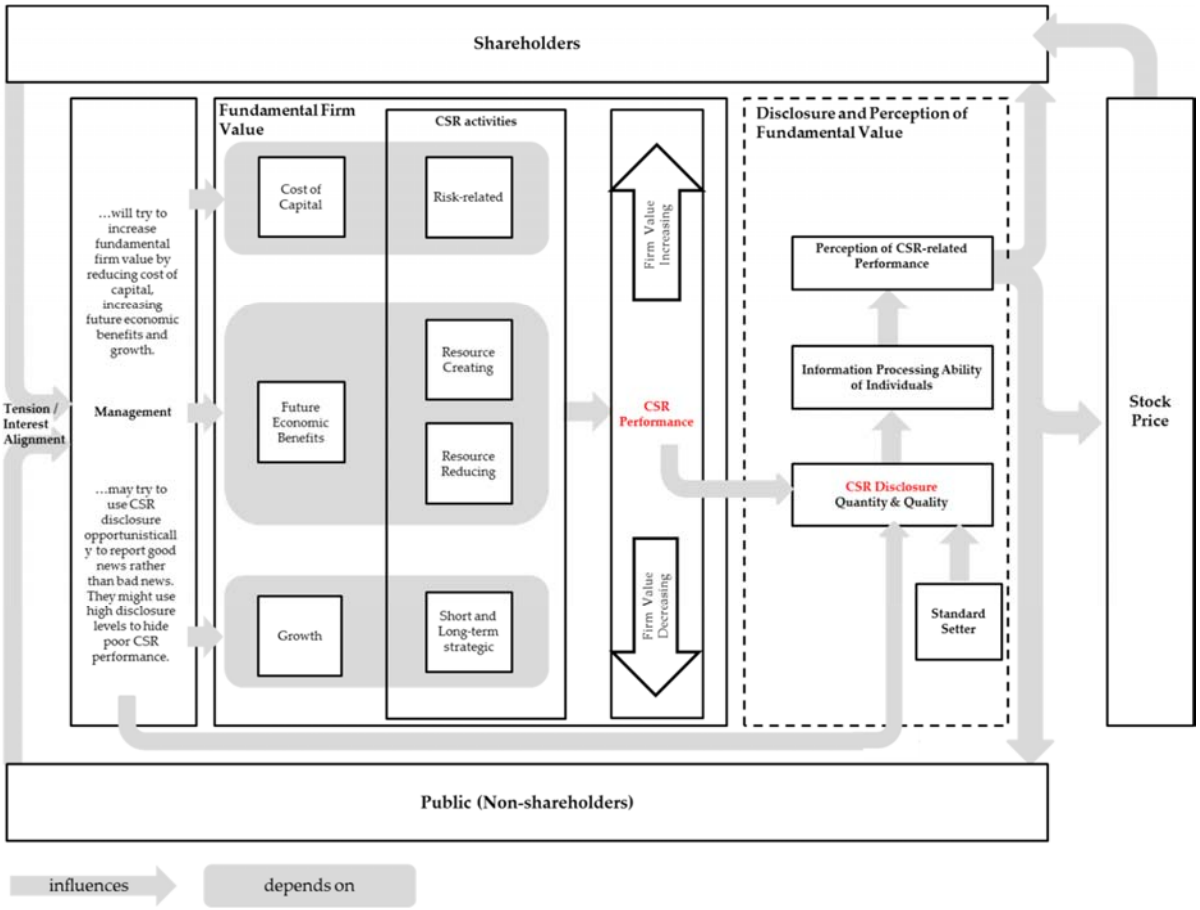

Figure 1: Framework for the Firm value Effects of CSR Disclosure and CSR Performance.

Table 1. Descriptive Statistics—Firm Value Model

Variable	FY 2011		FY 2012		FY 2013		FY 2014		Source
Firm Parameters	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	
VALUE[1]	25'010	40'936	29'824	46'998	35'384	56'802	37'409	56'395	TRSL
N_ASSET[1]	12'457	24'685	13'176	26'219	14'004	27'535	14'020	28'598	CALC
EBIT[1]	2'864	5'461	2'851	5'293	3'052	5'467	3'019	5'560	TRSL
SIZE[2]	23.52	1.33	23.60	1.31	23.66	1.29	23.70	1.29	CALC

[1] in million $US
[2] logarithm of total assets
TRSL = Thomson Reuters Database
CALC = Manually calculated metrics
For variable definition, see Appendix A.

Table 2. Descriptive Statistics—Disclosure and ESG Performance

Variable	FY 2011		FY 2012		FY 2013		FY 2014		Source
ESG Disclosure Score	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	
DISC	28	15	30	15	31	15	31	14	Bloomberg
DISC_TOP	30	15	31	16	31	15	32	15	CALC
DISC_BOT	27	14	29	15	30	15	31	14	CALC
ESG Performance Scores									
ENV	59	31	60	31	60	31	60	30	Datastream
SOC	60	26	59	27	59	27	60	26	Datastream
GOV	78	15	76	16	78	15	78	15	Datastream

TRSL = Thomson Reuters Database
CALC = Manually calculated metrics

DISC = ESG disclosure score retrieved from Bloomberg at the end of the fiscal year
DISC_TOP = ESG disclosure score (retrieved from Bloomberg) for the firms with the best (top half) CSR performance
DISC_BOT = ESG disclosure score (retrieved from Bloomberg) for the firms with the worst (bottom half) CSR performance

ENV = score regarding environmental performance from the ASSET4 ESG database and retrieved from Datastream
SOC = score regarding social performance from the ASSET4 ESG database and retrieved from Datastream
GOV = score regarding governance related performance from the ASSET4 ESG database and retrieved from Datastream

For further variable definition, see Appendix A.

Table 3. Correlation Coefficients

	VALUE	NET_A	EBIT	SIZE	ENV	SOC	GOV	DISC
VALUE		0.72***	0.91***	0.55***	0.08***	0.02	0.03	0.31***
NET_A	0.68***		0.78***	0.69***	0.12***	0.09***	0.04*	0.32***
EBIT	0.77***	0.70***		0.59***	0.09***	0.06***	0.03	0.31***
SIZE	0.63***	0.88***	0.73***		0.15***	0.15***	0.08***	0.33***
ENV	0.04*	0.11***	0.10***	0.14***		0.78***	0.58***	0.07***
SOC	0.03	0.10***	0.12***	0.15***	0.79***		0.57***	0.08***
GOV	0.00	0.05**	0.05**	0.09***	0.59***	0.59***		0.00
DISC	0.38***	0.34***	0.42***	0.32***	0.07***	0.08***	0.01	

Spearman (Pearson) correlation below (above) the diagonal
*, **, *** denote significance at $p < 0.10$, < 0.05, and < 0.01 respectively.
For variable definition, see Appendix A.

Table 4. Regression Analysis

Regression Analysis

		Dependent Variable: Firm Value					
		Model 1			Model 2		
Independent Variable	Pred. Sign	Coeff.	Robust Std. Err.	t	Coeff.	Robust Std. Err.	t
ESG Disclosure							
DISC	+	259.86***	72.41	3.59			
DISC_TOP	+				199.06**	91.57	2.17
DISC_BOT	+				322.11***	89.04	3.62
ESG Performance							
ENV	+	87.40**	42.67	2.05	109.39**	48.74	2.24
SOC	+/-	-104.09**	44.31	-2.35	-82.42**	40.72	-2.02
GOV	+	51.12	37.54	1.36	63.53	38.71	1.64
Firm Parameters							
N_ASSET	+	0.88***	0.34	2.62	0.89***	0.33	2.68
EBIT	+	2.45***	0.53	4.66	2.44***	0.52	4.68
SIZE	+	11'213.06***	4'143.92	2.71	11'019.90***	4'078	2.70
R-squared		0.65			0.65		
Observations		1'862			1'862		
No. Of Groups		476			476		

*, **, *** Denote significance at p < 0.10, < 0.05, and < 0.01, respectively.

We control for year fixed effects and firm fixed effects.

For variable definitions see Appendix A.

Sample size varies due to missing data due to a change in constituents of the S&P 500.

Appendix B
Variable Definitions

VALUE	=	Average firm value of common equity in the second, third, and fourth month after the end of the fiscal year, calculated by multiplying the common shares outstanding by price per share.
DISC	=	ESG disclosure score retrieved from Bloomberg at the end of the fiscal year.
DISC_TOP	=	ESG disclosure score retrieved from Bloomberg for the firms with the best (top half) CSR performance, retrieved from the ASSET4 ESG database, in the S&P 500 at the end of the fiscal year.
DISC_BOT	=	ESG disclosure score retrieved from Bloomberg for the firms with the worst (bottom half) CSR performance, retrieved from the ASSET4 ESG database in the S&P 500 at the end of the fiscal year.
ENV	=	Score regarding environmental performance from the ASSET4 ESG database and retrieved from Datastream.
SOC	=	Score regarding social performance from the ASSET4 ESG database and retrieved from Datastream.
GOV	=	Score regarding governance related performance from the ASSET4 ESG database and retrieved from Datastream.
N_ASSET	=	Difference between net operating assets (NOA) and net financial obligations (NFO).
NOA	=	Net operating assets calculated as total assets subtracted by total liabilities and financial assets and adding debt.
NFO	=	Net financial obligations calculated as debt subtracted by financial assets.
EBIT	=	Firm's EBIT.
SIZE	=	Firm size calculated as the logarithm of the total assets.