ACRN Journal of Finance and Risk Perspectives 10 (2021) 77-94

Contents lists available at SCOPUS

ACRN Journal of Finance and Risk Perspectives

journal homepage: http://www.acrn-journals.eu/

Corporate Social Responsibility as a managerial learning process

Ahmed Marhfor*,[1], Kais Bouslah[2], Bouchra M'Zali[3]

[1]*Université du Québec en Abitibi-Témiscamingue. Member of CAIMD, Mohammed VI Polytechnic University*
[2]*University of St. Andrews. Member of CAIMD, Mohammed VI Polytechnic University*
[3]*Université du Québec à Montréal. Member of CAIMD, Mohammed VI Polytechnic University*

ARTICLE INFO

Article history:
Received 16 March 2021
Accepted 22 April 2021
Published 18 May 2021

Keywords:
Corporate social responsibility
Managerial learning theory
Revelatory efficiency
Investment-price sensitivity
JEL Classification: G14, G34, M14

ABSTRACT

The purpose of this paper is twofold. 1) We propose for the first time in the literature a theory (managerial learning hypothesis) that may explain why managers engage in corporate social responsibility (CSR). 2) We use an intuitive empirical methodology (Edmans et al. 2017) to test the relevance/irrelevance of our new theory. The idea behind our main contribution is that managers engage in CSR to learn new relevant information from other informed stakeholders. In return, managers will use both the new information and other information they already have to choose the optimal level of firm's investment (Jayaraman and Wu, 2019). Therefore, we propose to examine whether a strong CSR engagement improves revelatory efficiency (Edmans et al. 2012, 2017). The latter accounts for the extent to which stock prices reveal new information to managers that will help them make value-maximizing choices. Our findings suggest that CSR activities do not allow firm's managers to extract new information from their stock prices and ultimately improve the efficiency of their investment choices.

Introduction

Over the years, CSR has become an integral part of business practices and an important issue to both the academic and business world. All around the world, more corporations engage in CSR activities, establish CSR committees, and issue CSR reports. In the literature, the motives and impact of CSR engagement have been extensively tested. In this study, we innovate by proposing a new motive for CSR choice. We base our new argument on the managerial learning hypothesis that suggests that managers' desire to learn from other informed stakeholders' either directly or indirectly (through market stock prices) may be an important factor in their CSR engagement. Hence, our main purpose is to test whether a strong CSR engagement allows firms managers to learn from observing their stock prices and ultimately to make efficient investment decisions. The idea that managers engage in CSR in order to enhance their ability to collect valuable private information that other market participants posses is very appealing. Indeed, value-maximizing managers should have strong incentives to use any new relevant information, in addition to their own information, when making investment decisions. A growing literature suggests that managers can capture new

* Corresponding author.
E-Mail address: ahmed.marhfor@uqat.ca

https://doi.org/10.35944/jofrp.2021.10.1.005
ISSN 2305-7394

relevant information from market prices and use this information to achieve optimal investment levels (Chen et al. 2006; Edmans et al. 2012, 2017; Foucault and Frésad, 2012; Jayaraman and Wu, 2019; Goldstein and Yang, 2019; Lin et al. 2019; Hillegeist et al. 2020). Based on this literature, we argue that trades by informed market participants (e.g. institutional investors) that impound new information into stock prices can guide managers investment decisions. This argument suggests that other market participants can have relevant information that firm's managers do not have. For instance, managers can learn from regulators, capital providers, customers, financial analysts… new information about the aggregate economy, industry prospects, firm's competitors, and the demand for firm's products. Indeed, managers are expected to have less information advantage in these areas (Morck et al. 1990; Edmans et al. 2012, 2017; Jayaraman and Wu, 2019; Goldstein and Yang, 2019). The learning process should enhance managers' ability to make value-maximizing investment decisions. To the best of our knowledge, we are not aware of any study that examines whether CSR has an impact on the managerial learning process.

We argue that a genuine CSR engagement should improve the managerial learning process because: 1) CSR should strengthen the dialog and cooperation between managers and informed stakeholders (stakeholders' theory) and 2) CSR can expand the set of informed market participants who collect private information about firms and trade for their own profits. As a result, CSR can give access to informed market participants who may have a specific expertise in assessing firm's cash-flows. These informed stakeholders can choose either to share directly with managers some relevant information they possess or to disseminate their information through the trading process. In return, firm's insiders can learn from this new information and use it when making investment decisions. In other words, CSR can create a two-way process dialog between managers and other informed stakeholders. The latter can learn from managers and vice-versa.

We also contribute to the CSR literature by proposing a new concept of market efficiency (revelatory efficiency (RE)). In this respect, the empirical model we propose should allow to test whether a strong CSR engagement makes market prices more informative to managers (high RE). We assume that firm's managers use stock prices as signals for their investment expenditures (Edmans et al. 2012, 2017; Jayaraman and Wu, 2019; Goldstein and Yang, 2019). It is worth mentioning that all CSR studies that investigate the relationship between CSR engagement and market efficiency (e.g. Petrovis, 2006; Prior et al. 2008; Dhaliwal et al. 2011; Cormier and Magan, 2014) focus only on price efficiency (the extent to which CSR choice helps market prices reflect firm's fundamentals). This traditional approach assumes that secondary markets prices are passive, in that they merely reflect firm's fundamentals (high price efficiency) without affecting such fundamentals (Bond et al. 2012). In other words, secondary markets are just a sideshow and do not affect real economic activity (e.g. corporate investments). According to these studies, what matter for real economic activity are frictions in primary markets (e.g. moral hazard and adverse selection problems) that may constrain real investment and the ability of firms to raise capital, and end up reducing real economic activity (Bond et al. 2012). In the line of research mentioned above, frictions in secondary markets should not have any impact on real economy. In fact, secondary markets frictions should simply redistribute wealth between noise traders and informed traders, and impact real economy only to the extent stocks' liquidity affects firms' cost of capital (Morck et al. 1990; Bond et al. 2012). Following Morck et al. (1990) and Bond et al. (2012), we argue that treating secondary markets as a sideshow is a mistake. Indeed, a new strand of research suggests many reasons for which secondary

markets have real consequences even though activities in these markets do not lead to any transfer of capital to firms. In this respect, there seem to be strong theoretical and empirical evidence suggesting that investors' sentiment and irrationality do affect the actions and decisions of firms' managers. Another reason why secondary markets have real consequences stems from the informational role of stock prices. For instance, firm's managers can learn valuable information from their stock prices and use this new information to guide their actions and decisions (Chen et al. 2006; Edmans et al. 2012; Foucault and Frésad, 2012). Consequently, in this paper, we include the feedback effect from financial markets into traditional models of the price formation process. More specifically, our new definition of market efficiency accounts for the extent to which prices both affect and reflect firm's future cash flows. We argue that accounting for the feedback effect from secondary markets to real economy will enhance our understanding of CSR impact. This issue is important because if RE matters, traditional measures of price efficiency will be unable to gauge RE. In fact, for the first time in the literature, our analysis may potentially provide rigorous empirical results suggesting that CSR may help managers learn new relevant information from their stock prices and allow them to make efficient-investment decisions (high RE).

We measure RE using the association between investment expenditures and stock prices (investment-price sensitivity). We argue that stock prices (as measured by Tobin's Q) may predict firm's investment because they (1) reflect firm's fundamentals and (2) convey to managers' useful new information. Indeed, investment expenditures will be more sensitive to stock prices when these prices provide more information that is new to managers who ultimately choose the level of corporate investment. As a result, high RE should trigger high and positive investment-price sensitivity. Furthermore, in rational capital markets, when investment opportunities improve (worsen) we should expect stock prices to increase (decrease) in order to reflect positive (negative) Net Present Values (NPVs) of such opportunities. The main purpose of our empirical tests is to examine whether a strong CSR engagement also triggers an increase in firm's investment-price sensitivity. We conjecture that CSR should be positively linked to investment-price sensitivity when CSR activities improve price efficiency and help managers learn new information from market prices.

We show empirically that the investment-to-price sensitivity of firms with strong CSR engagement is not significantly higher in comparison to firms with weak CSR engagement. The neutral association between CSR and investment price-sensitivity is robust to various estimation methodologies and to alternative definitions of corporate investment and Tobin's Q. Our findings are consistent with the idea that firm's social activities do not help managers enhance their ability to collect valuable private information from other market participants.

In the next section, we review the literature and develop our main hypothesis. In section 3, we describe the research methodology. Section 4 presents the study results. In section 5, we discuss the meaning and relevance of the main findings. Section 6 concludes.

Literature Review

In the literature, numerous theoretical arguments have been proposed to explain why firms' managers engage in CSR activities. For instance, the signalling argument suggests that managers use CSR to signal higher moral standards and better quality of firm's prospects (Montiel et al. 2012; Ramchander et al. 2012). Furthermore, because firms must

meet a variety of social expectations, the legitimacy argument considers CSR as a legitimizing tool that will ensure firm's survival (Deegan, 2002; Cho and Patten, 2007; Reverte, 2009; Archel et al. 2009). According to the stakeholders' theory, firm's managers engage in CSR to resolve conflicts of interest between stakeholders. According to this view (e.g. Freeman, 1984; Jo and Harjoto, 2011, 2012), CSR will allow managers to secure stakeholders' support and cooperation and ultimately improve firm's financial performance. In this paper, we introduce a new argument based on the managerial learning theory (Chen et al. 2006; Edmans et al. 2012, 2017; Foucault and Frésad, 2012; Jayaraman and Wu, 2019; Goldstein and Yang, 2019). According to Chen et al. (2006), "*the idea behind the theory is that stock prices aggregate information from many different participants who do not have channels for communication with the firm outside the trading process. Thus, stock prices may contain some information that managers do not have. This information, in turn, can guide managers in making corporate decisions, such as the decision on corporate investments*" (p. 620). It is worth mentioning that even if managers already know most of the firm-specific information in stock prices, it is still possible that market prices reveal new relevant information to managers. As managers receive more information about firm's investment opportunities, they will able to make value-maximizing investment decisions (e.g. when a manager announces an acquisition of a target company and an important stakeholder reacts negatively to such announcement, the manager may learn from this negative response and change or cancel the acquisition bid).

Our new theoretical framework considers CSR engagement as a mechanism that strengthens dialog and cooperation between managers, shareholders, and informed stakeholders (Stakeholders' theory). The managers-stakeholders dialog and cooperation may push some informed stakeholders to share with the firm either directly or through the trading venue some relevant information they possess. Consequently, firm's insiders can learn from this new information and use it to maximize the output of their investment decisions (high RE). CSR can also expand the set of informed investors who collect and trade private information about firm's future prospects and, at the same time, can give access to these investors who may have a specific expertise in assessing firm's future prospects. Such argument is plausible because many studies (e.g. Dhaliwal et al. 2011; Cormier et al. 2014) indicate that firms' with high CSR standards are followed by a large number of informed market participants (e.g. institutional investors and financial analysts) who collect private information about their fundamentals and trade their stocks on a regular basis. As suggested earlier, we argue that managers-stakeholders dialog is a two-way process. Stakeholders can learn from managers and vice-versa. This two-way dialog will benefit firm's stakeholders, managers and improve further the managerial learning process.

Considered that way, managers have incentives to operate with integrity and transparency (high CSR standards) because such actions should allow them to develop strong relationships with other informed stakeholders. In addition, a genuine CSR engagement should increase stakeholders' confidence in managers' commitments while weak firm's disclosure standards combined with opaque communication strategies will lead to doubts about managers' actions and intentions (Wang and Choi, 2013). Hence, under the managerial learning theory, CSR should improve firm's disclosure practices, expand the set of informed investors and strengthen the dialog between managers and these investors. In the same line of reasoning, risky arbitrage (trades that exploit mispricing opportunities) initiated by some "smart" investors can be more effective under our new perspective. Indeed, the presence of less noise-trader risk and

sentiment changes risk (high CSR standards) make arbitrage less risky for "smart" investors (Morck et al. 1990; Doukas et al. 2010). Therefore, risk-averse arbitrageurs will bet more aggressively against mispricing, which may help increase the amount of outsiders' information in stock prices (information not already possessed by firm's managers). Arbitrageurs will also increase the size of their trade when managers are more willing to learn from any new information that can be impounded into stock prices through arbitrage trading.

On the other hand, one can argue that "informed" market participants could also send inaccurate signals about firm's fundamentals or the future state of the economy. If this inaccurate information is used by managers when they decide to invest, the positive association between investment and stock prices should suggest low RE because investment decisions will be distorted by false signals from markets (Morck et al. 1990). Following Morck et al. (1990), we consider that the inaccurate (false) signals view is more plausible at the aggregate level, when firm's insiders are more likely to get confused by the aggregate market information. In this respect, Morck et al. (1990) considers that: "*the false signals hypothesis seems less likely to apply to individual stock returns than to industry stock returns or to the market as a whole. It is easier to argue that managers learn more new things from the stock market about the economy as a whole or about industry conditions than they do about their own firms*" (p.165). Hence, in our empirical tests, we use individual stock returns and prices in order to rule out the false signal view as an alternative explanation.

In sum, based on the managerial learning theory, CSR should enhance RE through the learning channel when other informed stakeholders choose to share with managers some incremental information they posses either directly or through the trading process. Based on our new theoretical framework, we can propose the following hypothesis:

Main Hypothesis: There is a positive relation between CSR and RE.

To measure RE, we rely on a well-established measure in the literature (Investment-price sensitivity). We argue that stock prices are positively related to firm's investment because such prices convey to managers new relevant information that is useful in making investment decisions (Morck et al. 1990; Dow and Gorton, 1997; Subrahmanyam and Titman, 1999; Goldstein and Guembel, 2005; Edmans et al. 2017; Jayaraman and Wu, 2019). If the managerial learning mechanism allows firm's managers to incorporate new relevant information from markets prices into investment decisions, we should expect a positive relationship between market prices and investment expenditures (Chen et al. 2006; Jayaraman and Wu, 2019; Goldstein and Yang, 2019). In the same line of reasoning, when the private information produced by other informed stakeholders' is irrelevant and firm's managers already know such information, firm's investments should correlate less with markets prices. As result we should expect a lower investment-price sensitivity. In addition, if CSR engagement increases further managers' learning ability (high RE), firms with high CSR scores should exhibit positive and high investment-price sensitivity in comparison to firms with weak CSR engagement.

Another theory (mispricing argument) suggests that firm's investments should be sensitive to non-fundamental information that is embedded into stock prices (Baker et al. 2003). For instance, when stock prices are undervalued, firms' that need equity to fund projects with positive NPV will refuse to issue new shares at irrationally low prices

(Baker et al. 2003). Consequently, these firms' will forgo valuable investments opportunities and the level of their investment expenditures should remain low. On the other hand, when stock prices are overvalued, firms with negative NPV projects will be able to issue new shares and increase their investments (Baker et al. 2003). Hence, in irrational markets, it is also possible to have positive associations between stock prices and investment expenditures. Under the mispricing theory (irrational markets), the RE is weak when the investment-price sensitivity is high and positive. Hence, based on the mispricing argument, if CSR engagement improves RE, firms with strong CSR engagement should exhibit low or no significant investment-price sensitivity. Therefore, we argue that it is important to provide robust tests that help separate the managerial learning theory from the mispricing theory. To do so, we propose to isolate the non-fundamental component of stock prices in our empirical tests (underpricing or overpricing).

Research Methodology

To implement our empirical tests, we run the following regression:

$$(I/K)_{i,t} = \beta_0 + \beta_1(Q)_{i,t-1} + \beta_2(CSR)_{i-1} + \beta_3(Q_{i,t-1})*(CSR_{i,t-1}) + \beta_4(return)_{t+3} + \beta_5 CF_{i,t-1} + \beta_6(B/M)_{i,t-1} + \beta_7 Controls + \varepsilon_{i,t} \quad (1)$$

Where $I_{i,t}$ represents investment in plant and equipment for firm *i* during period *t*; K denotes the beginning-of-period value of total assets. Our market value variable is Tobin's Q ((Market value of equity + book value of assets – book value of equity)/ book value of assets). For robustness, we propose a variety of proxies for corporate investment and Tobin's Q. We follow Peters and Taylor (2017) and calculate new measures of Tobin's Q that account for intangible capital. We also take into consideration intangible investment. Peters and Taylor (2017) argue that it is important to consider components that account for intangible capital when estimating the investment-Q relation. Hence, Tobin's Q is also measured as firm value divided by the sum of physical and intangible capital. Firm value is market value of outstanding equity, plus the book value of debt, minus current assets. Physical capital is the book value of property, plant and equipment (PP&E). Intangible capital is the sum of externally purchased intangible capital (intangible capital from the balance sheet) and internally created capital. The latter is the sum of knowledge capital and organizational capital (Peters and Taylor, 2017). Knowledge capital is measured by accumulating past research and development (R&D) spending using the perpetual inventory method (see Peters and Taylor, 2017 for more details). The organizational capital is a fraction (30%) of past selling, general and administrative (SG&A) spending using the perpetual inventory method. Intangible investment is measured as R&D + (0.3 * SG&A) and physical investment as capital expenditures. Our main findings are robust to the way corporate investment and Tobin's Q are measured. For robustness, we also propose to use stock returns instead of Q.

CSR is firm social scores. It represents our proxy for CSR engagement. To construct our measures of firm's social performance (SP), we use social data for US firms from MSCI ESG STATS (formerly KLD Research & Analytics, Inc.). This database is the most widely used CSR database by academics. It provides binary (0,1) indicators for each strength and concern activity in 7 qualitative dimensions (community, diversity, employee relations, environment, product, human rights, and corporate governance). Each dimension involves a number of strengths and concerns. MSCI database attributes a value of 1 for the presence of each strength item and concern item. On the other hand, a

value of 0 is attributed for the absence of each strength item or concern item. We follow Harjoto and Jo (2008) and Bouslah et al. (2013, 2016) to construct an aggregate SP measure (an arithmetic average index of CSR engagement). The latter is defined as the difference between the average strengths' items and average concerns items for all 7 CSR dimensions (equation 2). More specifically, we first calculate the average strength (concern) score per dimension, which is equal to the total number of strengths (concerns) divided by the total maximum possible number of strengths (concerns) within a given dimension (Bouslah et al. 2013, 2016); and then we compute an arithmetic average for strengths items and concerns items (see equation 3 and 4 for more details). Based on equation (2), high CSR index scores indicate a strong CSR engagement. Based on equation (3) and (4), high STR (strengths) index scores suggest high CSR commitment while high CON (concerns) index scores indicate weak CSR engagement.

$$CSRindex_{i,t} = STR_{i,t} - CON_{i,t} \tag{2}$$

$$STR_{i,t} = \frac{1}{D}\sum_{d=1}^{D}\left(\frac{1}{N_{STR}}\sum_{j=1}^{J} strenght_j\right) \tag{3}$$

$$CON_{i,t} = \frac{1}{D}\sum_{d=1}^{D}\left(\frac{1}{N_{CON}}\sum_{k=1}^{K} concern_k\right) \tag{4}$$

Where d refers to a qualitative dimension and D is the total number of dimensions for firm i during year t. NSTR and NCON represent the maximum possible number of strengths and concerns for a given dimension. J and K refer to the number of strengths and concerns, respectively, within a given dimension for firm i during year t. For robustness, we also compute individual SP scores for each dimension (disaggregated measures of CSR). For instance, CSR Community index is equal to differences between strengths items and concern items within the community dimension. STR and CON community indexes refer to the number of strengths and concerns items, respectively, for the community dimension. Following Fazzari et al. (1988), we add firm's cash flow (CF) to control for the well-documented effect of this variable on investment (see Fazzari et al. 1988, and Kaplan and Zingales 1997). CF may impact firm's investments because of the cost advantage of internal funds (Pecking order theory). CF should then serve as a proxy for the availability of internal funds for investment. B/M denotes the book to market ratio. To address concerns about potential omitted variables bias, we propose to include a variety of control variables to our main regression framework: e.g. firm's size; leverage; return on assets (ROA); sales growth; dividend yield; and analyst coverage. Table 1 presents detailed definitions and measurements of our main variables.

Table 1. Variables definition and measurement

Variable	Variable measurement
1.Investment	Investment in plant and equipment for firm (i) during period (t) divided by firm (i) total assets during period (t-1)
2. Tobin's Q	(Market value of equity + book value of assets – book value of equity)/ book value of assets
3. Return	The fiscal-year-end adjusted share price, plus the adjusted dividends, all divided by the adjusted price at the end of the previous fiscal year
4. Future return	The buy-and-hold return for the three-year period following the current year (for years t+1, t+2 and t+3).
5. CSR Index	The difference between the average strengths items and average concerns items for all 7 CSR dimensions
6. STR Index	An arithmetic average for strengths items
7. CON Index	An arithmetic average for concerns items
8. Cash Flow	The sum of income before extraordinary items and depreciation net of cash dividends scaled by total assets
9. Book-to-Market	The book to market ratio
10. Firm's Size	The logarithm of firm's total assets
11. Leverage	Total debt/total assets
12. ROA	Return on assets ratio
13. Sales Growth	Sales growth rate from t-1 to t
14. Dividend payout	Dividend /Book value of equity
15. Analyst coverage	the number of analysts following firm's activities

We also include firm's future returns (t+3) to isolate the non-fundamental component of stock prices (mispricing theory). Following Baker et al. (2003) and Chen et al. (2006), we use future stock returns as a proxy for mispricing. In fact, when stock prices are undervalued à (t= 0) , firms will invest less at (t=0) while their future returns (t+3) should be higher knowing that underpriced stocks have higher expected returns going forward, as mispricing is corrected (Baker et al. 2003). In the same line of reasoning when stock prices are overpriced at (t =0), we should expect higher investment expenditures at (t=0) and low future returns (t+3) as mispricing is corrected (Baker et al. 2003). Hence, the mispricing theory implies that the investment-future returns sensitivity should be negative on average (Baker et al. 2003). We argue that adding future returns in our main equation is particularly useful in ruling out the mispricing theory as an alternative explanation.

Our accounting data comes from COMPUSTAT. Financial analysts' data comes from I/B/E/S. In addition, we obtain stock prices and returns from CRSP. Our final sample consists of an unbalanced panel dataset of 16,206 firm-year observations for all non-financial and non-utility firms covered by our 4 databases (2494 firms) over the period 1991-2012. The main coefficient of interest in equation (1) is β3, the coefficient of the interaction term (Qi,t-1*CSRi,t-1) that proxies for the impact of CSR engagement on the relation between investment expenditures and stock prices. β3 should allow us to measure the extent to which the investment-price sensitivity differs between firms with high CSR scores and firms with low CSR scores. It is worth mentioning that β2 (our measure of investment-price sensitivity) is computed without taking into consideration CSR engagement. Hence, β3 can be considered as a proxy that examines the impact of CSR activities on the Investment-Price sensitivity. Knowing that positive and significant investment-price sensitivity is an indicator that managers respond to new information that is reflected in market prices, a positive and significant β3 means that strong CSR activities enhance the precision of private information conveyed by stock prices. In other words, the relationship between CSR and RE is positive when β3 is positive. A negative and significant β3 means that CSR lowers the overall quality of information available to firm's managers and therefore lowers the efficiency of their investments. A neutral β3 suggests that CSR activities have no impact on RE.

Results

We first measure the mean, median, standard deviation, minimum, maximum, skewness, and kurtosis of the main variables used in this study (results not tabulated). We perform our tests for the whole sample, for a subsample of firms with CSR scores above the sample median, and a subsample of firms with CSR scores below the sample median. We also perform mean difference tests (results not tabulated). For the whole sample, the average (median) CSR score is -0.031 (-0.030). The average (median) CSR score is 0.028 (0.007) for firms with strong CSR engagement, while the average (median) score is equal to -0.088 (-0.076) for our subsample of firms with weak CSR engagement. Our univariate findings also indicate that firms with high CSR scores have higher investment expenditures in comparison to firms with weak CSR engagement (0.125 for socially responsible firms versus 0.112 for non socially responsible firms (NSRF)). In the same line of reasoning, the performance (ROA) of socially responsible firms is greater than the performance of NSRF (0.086 versus 0.071). Furthermore, socially responsible firms have higher dividend payout ratios (0.178 versus 0.146 for NSRF), higher cash flows (0.024 versus 0.008 for NSRF), low leverage ratios (0.338 versus 0.493 for NSRF), and low Book-to-Market ratios (0.459 versus 0.510 for NSRF). Socially responsible firms are also followed by more financial analysts (2.258 versus 2.210 for NSRF). All these differences are statistically significant at 1%.

Table (2) provides the matrix of correlations between our main variables.

Table 2. This table presents the correlations between variables. The sample period is 1991-2012. All variables are defined in table 1.

	investment	Tobin's Q	Future return	CSR index	STR index	CON index	Cash flow	Size
investment	1							
Tobin's Q	0.0364*	1						
Future return	-0,0051	-0.0467*	1					
CSR index	0.0359*	-0,0039	-0,0288	1				
STR index	-0,0201	-0.0401*	-0,0086	0.6258*	1			
CON index	-0.0652*	-0.0376*	0,024	-0.5692*	0.2850*	1		
Cash flow	-0.3107*	0.0436*	-0.0383*	0.0674*	0.0877*	0,0096	1	
Size	-0.0857*	0,0143	-0.0702*	0.0846*	0.4445*	0.3647*	0.2379*	1

*Significant at 1% level

As expected, investment expenditures are positively correlated with stock prices, with the coefficient for Qi,t-1 estimated at 0.0364 and significant at 1% level. This finding is consistent with previous studies that document positive investment-price sensitivity (e.g. Morck et al. 1990; Chen et al. 2006). Table (2) also shows that the coefficient estimate for cash flow is negative (-0.3107) and significant (at 1% level) which contradicts the findings in prior studies that suggest the presence of a positive correlation between firm's investment and firm's cash flow (e.g. Fazzari et al. 1988). The correlation between investment at (t) and future returns (t+3) is negative and nonsignificant (-0.0051), indicating that firms do not invest less (more) when their stocks are undervalued (overvalued). This additional finding is inconsistent with the mispricing theory. Hence, our univariate analysis suggests that we can rule out the mispricing theory as an alternative explanation of the investment-price sensitivity. In addition, firm's investment is positively correlated with CSR index and negatively correlated with CON index. On the other hand, the correlation between investment and STR index is not significant.

We run equation (1) using aggregate and disaggregate (dimensional) measures of firm's SP. The purpose is to test the incremental influence of CSR on the investment-price sensitivity. As suggested earlier, the marginal impact of CSR engagement is proxied by β3 coefficient, which measures the extent to which the investment-price sensitivity differs between firms with high CSR scores and firms with low CSR scores. If managers learn more information from observing their stock prices when they engage in CSR, we should expect β3 to be positive and significant (high RE for firms with strong CSR engagement).

In Table (3), we present the results of variant estimations of equation (1) using aggregate measures of firm's SP for all 7 dimensions. In model (1), we use the difference between the average strengths items and average concerns items for all 7 CSR dimensions to provide firm's SP scores. In model (2), we use only the average strengths for all 7 CSR dimensions (see equation (3) for more details). In model (3), we use the average concerns score for all 7 dimensions to proxy for SP (see equation (4) for more details). The first three columns show results obtained from Ordinary Least Square (OLS) regressions with year and industry fixed effects (our baseline specification). Columns

(4), (5) and (6) repeat the same analysis using firm-fixed effects to account for time-invariant firm characteristics that are unobservable or at least difficult to measure. Finally, Columns (7), (8) and (9) re-estimate equation (1) based on instrumental variable (IV) method. The purpose is to examine the sensitivity of the results to the endogeneity problem.

Consistent with previous studies (e.g. Morck et al. 1990; Chen et al. 2006), investment expenditures are positively and significantly associated with Q, suggesting that managers use stock prices as signals of firm's investment opportunities. For instance, in Model (1) of the baseline specification, the coefficient on Q is 0.0630 with a p-value of .001. To test whether the investment-price sensitivity is increasing for firms with high CSR scores, we rely on the coefficient of the interaction between Q and CSR. Results from the baseline specification suggest that β3 is negative and nonsignificant (-0.0032) when CSR is measured as the difference between the average strengths items and average concerns items for all 7 CSR dimensions.

Table3. Corporate Social Responsibility and Investment-Price Sensitivity: Primary results with aggregated measures of firm's social performance (SP)

This table presents coefficients and test statistics from variant estimations of equation (1). Firm's social performance is based on aggregated measures of CSR engagement. For instance, in model (1), we use the difference between the average strengths items and average concerns items for all 7 CSR dimensions. In model (2), we calculate firm's SP using the average strengths for all 7 CSR dimensions. In model (3), we use the average concerns score for all 7 dimensions to proxy for SP. Furthermore, Table (3) shows results obtained from OLS regressions with year and industry fixed effects (columns 1, 2 and 3); from firm-fixed effects regressions (columns 4, 5, and 6); and from IV regressions (columns 7, 8 and 9). One, two or three asterisks denote significance at the 10%, 5% and 1% levels, respectively.

Independant	OLS estimation			Fixed-Effects estimation			IV estimation		
Variables	Model1	Model2	Model3	Model1	Model2	Model3	Model1	Model2	Model3
Intercept	0.1299***	0.1447***	0.1384***	0.1993***	0.2022***	0.1990***	0.1383***	0.2251***	0.0709
Lagged Tobins's Q	0.0630***	0.0617***	0.0625***	0.0076	0.0072	0.0063	0.0612***	0.0547***	0.0842**
Lagged CSR index	0.0777***			-0.0429**			1.1503***		
Lagged Q*Lagged CSR	**-0.0032**			**0.0026**			**-0.1504**		
Lagged Strenghts index (STR)		0.1742***			-0.081***			1.0747***	
Lagged Q * Lagged STR		**-0.0132**			**0.0177**			**0.1475**	
Lagged Concerns index (CONC)			0.0087			0.0104			-1.7008**
Lagged Q * Lagged CONC			**-0.0030**			**0.0101**			**0.0420**
Future return (t+3)	0.0021	0.0021	0.0021	0.0006	0.0006	0.0006	0.0017	0.0021	0.0014
Lagged Cash Flow	-0.1865***	-0.1881***	-0.1877***	-0.0383***	-0.038***	-0.0387***	-0.1789***	-0.2070***	-0.1624***
Lagged Book to Market ratio	-0.0514**	-0.0501**	-0.0507**	-0.0061	-0.0065	-0.0054	-0.0518**	-0.0555***	-0.0693**
Lagged Size	-0.0112***	-0.0141***	-0.0120***	-0.0162***	-0.015***	-0.0161***	-0.0029	-0.0349***	0.0284*
Lagged Leverage	-0.0057***	-0.0054***	-0.0059***	-0.0043***	-0.004***	-0.0043***	-0.0028	-0.0016	-0.0059**
Lagged ROA	-0.0741***	-0.0695***	-0.0713***	0.0772***	0.0762***	0.0771***	-0.0966***	-0.0594**	-0.1438***
Lagged Sales Growth	0.0066	0.0077	0.0068	-0.0038	-0.0038	-0.0038	0.0044	0.0172**	-0.0092
Lagged dividend yield	-0.0070***	-0.0070***	-0.0062**	-0.0016	-0.0017	-0.0017	-0.0164***	-0.0119***	-0.0162***
Lagged Analysts Coverage	0.0212***	0.0216***	0.0215***	0.0061***	0.0061***	0.0060***	0.0154***	0.0232***	0.0119**
Firm-Year Observations	16,206	16,206	16,206	16,206	16,206	16,206	14,805	14,805	14,805
R^2	0.379	0.381	0.377	0.095	0.095	0.094			
p-value of Hansen J statistic							0.695	0.857	0.563
Degrees of freedom							72	72	72
F statistic							20.87	19.69	15.19

The same coefficient remains nonsignificant when we measure CSR using the average strengths scores for all 7 CSR dimensions (-0.0132 with a p-value > 0.1). Results from average concerns scores (column 3) are virtually identical to column (1) findings (-0.0030 with a p-value > 0.1). These three estimates imply that investment-price sensitivity of firms with high CSR scores is neither higher nor lower than investment-price sensitivity of firms with low CSR scores. In other words, the sensitivity of investment to Q is not increasing in our aggregate measures of CSR, indicating that CSR activities do not improve RE. This neutral effect is robust to a host of alternative measures of corporate investment and Tobin's Q.

We also check the robustness of these primary findings in several ways. First, we propose to alter the baseline specification by using firm-fixed effects estimations. When we account for time-invariant firm characteristics that are unobservable or at least difficult to measure, the coefficient of the interaction between Q and CSR remains non significant statistically. For instance, in column (4) where firm-fixed effects are included and CSR is measured as the difference between the average strengths' items and average concerns items for all 7 CSR dimensions, our coefficient of interest is positive and nonsignificant (0.0026 with a p-value > 0. 1). Second, we also propose to investigate the impact of CSR engagement on investment-price sensitivity based on IV methods. Indeed, according to our previous specifications, CSR engagement is viewed as exogenous. However, a remaining concern is endogeneity. As suggested by Harjoto and Jo (2012), CSR engagement is not a random decision. Consequently, it may be possible that firm characteristics may explain the potential findings rather than CSR activities. In addition, it is also possible that firms with high CSR scores may invest more. Hence, an OLS estimation of equation (1) will produce biased estimators knowing that CSR may be correlated with the error term. We address the endogeneity concern by relying on the two-step efficient generalized method of moments (GMM). For the IV approach, we use two well established instruments: 1) the average industry CSR score and 2) the average CSR score of the surrounding firms in the same state (e.g. California, Texas etc…). We argue that the level of CSR for each firm should be closely related to industry norms. In addition, we assume that social expectations or pressures for strong CSR engagement may depend on the geographical location of the firm. For instance, managers in California may rely on nearby firms or institutions for guidance with respect to CSR. Columns (7), (8) and (9) in Table (3) show empirical results based on IV estimations. Again, the findings do not support our main hypothesis and suggest a neutral association between CSR and RE.

So far, our assessment of the relationship between CSR and RE is based on aggregate measures of CSR for all 7 dimensions. We then propose to measure CSR scores using disaggregated (dimensional) measures of firm's social engagement. We argue that relying only on aggregate measures of CSR may cause a loss of information about the composition of each dimension. Indeed, it is possible that an aggregation measure will not provide an accurate picture of firm's CSR engagement within each dimension. Table (4) shows empirical results of estimations using CSR scores for each dimension separately. For instance, CSR in column (1) is measured using the difference between strength items and concern items within the community dimension. Coefficients and tests statistics in Table (4) are obtained from OLS regressions with year and industry fixed effects. The coefficients on Q are always positive and significant for all models (all CSR dimensions). These results support the observations in the literature that suggest the presence of a positive association between investment expenditures and stock prices. To test the impact of CSR activities on investment sensitivity to stock prices, we focus on the coefficient of the interaction term (Q*CSR). In column (1),

where firm's CSR is measured as the difference between strengths items and concerns items for the community dimension, our coefficient of interest is negative and nonsignificant (-0.0017). The same coefficients remain nonsignificant for the rest of the models that rely on other dimensional (individual) scores. These additional findings imply that, on average, the sensitivity of firm's investment to stock prices is the same for firms with strong CSR engagement and firms with weak CSR engagement regardless of the CSR dimension. Hence, our additional robustness tests do not show any incremental investment-price sensitivity for firms with high CSR scores. In other words, firm's CSR engagement does not allow managers to learn new relevant information from their stock prices.

Table 4. Corporate Social Responsibility and Investment Sensitivity to Stock Prices: OLS estimations based on disaggregated (dimensional) measures of SP.

Independent Variables	Model1 (Community)	Model2 (Diversity)	Model3 (Employee)	Model4 (Environment)	Model5 (Human Rights)	Model6 (Products)	Model7 (Corporate Governance)
Intercept	0.1415***	0.1410***	0.1292***	0.1395***	0.1306***	0.1383***	0.1299***
Lagged Tobin's Q	0.0626***	0.0613***	0.0638***	0.0624***	0.0630***	0.0623***	0.0623***
Lagged CSR index	0.0384***	0.0340***	0.0160	0.0016	0.0102	0.0086	-0.0129
Lagged Q * Lagged CSR	**-0.0017**	**-0.0043**	**0.0040**	**0.0090**	**-0.0019**	**-0.0035**	**0.0035**
Future return (t+3)	0.0021	0.0021	0.0022	0.0021	0.0021	0.0021	0.0021
Lagged Cash Flow	-0.187***	-0.1890***	-0.1862***	-0.1871***	-0.187***	-0.1879***	-0.1875***
Lagged Book to Market	-0.0509**	-0.0499**	-0.0522**	-0.0508**	-0.050**	-0.0506**	-0.0504**
Lagged Size	-0.012***	-0.0130***	-0.0120***	-0.0118***	-0.012***	-0.0118***	-0.0121***
Lagged leverage	-0.005***	-0.0055***	-0.0058***	-0.0059***	-0.005***	-0.0058***	-0.0059***
Lagged ROA	-0.072***	-0.0684***	-0.0769***	-0.0720***	-0.072***	-0.0720***	-0.0707***
Lagged Sales Growth	0.0069	0.0076	0.0069	0.0067	0.0069	0.0068	0.0068
Lagged Dividend Yield	-0.0063**	-0.0072***	-0.0062**	-0.0063***	-0.006***	-0.0063***	-0.0062**
Lagged Analyst Coverage	0.0214***	0.0213***	0.0213***	0.0214***	0.0215***	0.0214***	0.0214***
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.378	0.379	0.378	0.377	0.377	0.377	0.377
Firm-Year observations	16 206	16 206	16 206	16 206	16 206	16 206	16 206

This table presents coefficients and test statistics from estimations of the following regression:

$$(I/K)_{i,t} = \beta_0 + \beta_1(Q)_{i,t-1} + \beta_2(CSR)_{i-1} + \beta_3(Q_{i,t-1})*(CSR_{i,t-1}) + \beta_4(return)_{t+3} + \beta_5 CF_{i,t-1} + \beta_6(B/M)_{i,t-1} + \beta_7 Controls + \varepsilon_{i,t}$$

Where $I_{i,t}$ represents investment in plant and equipment for firm *i* during period *t*; K denotes the beginning-of-period value of total assets. Q is the ratio of firm's market value to replacement cost. CSR is firm social performance. The latter is based on disaggregated measures of CSR engagement. For instance, in Model 1, we rely on CSR community index which is equal to differences between strength items and concern items within the community dimension. We estimate all models using OLS regressions with year and industry fixed effects. Year and industry dummies coefficients are not reported for parsimony. One, two or three asterisks denote significance at the 10%, 5% and 1% levels, respectively.

Our dimensional (individual) analysis is also performed using firm-fixed effects models (See Table 5 for more details). In this respect, when we account for time-invariant firm characteristics, the findings confirm again the nonsignificant relation between CSR and investment-price sensitivity. More specifically, our coefficient of interest is not significant in 6 models, suggesting that CSR activities do not increase RE.

Table 5. Corporate Social Responsibility and Investment Sensitivity to Stock Prices: Firm-fixed effects estimation with disaggregated (dimensional) measures of SP.

Independent Variables	Model1 (Community)	Model2 (Diversity)	Model3 (Employee)	Model4 (Environment)	Model5 (Human Rights)	Model6 (Product)	Model7 (Corporate Governance)
Intercept	0.2112***	0.2101***	0.2112***	0.2155***	0.2124***	0.2116***	0.2125***
Lagged Tobin's Q	0.0074	0.0077	0.0075	0.0072	0.0072	0.0076	0.0072
Lagged CSR	-0.0062	-0.0041	-0.0075	-0.0321**	-0.0011	-0.0070	-0.0068
Lagged Q * Lagged CSR	**0.0046**	**-0.0005**	**0.0031**	**0.0104****	**-0.0065**	**-0.0017**	**0.0002**
Future return (t+3)	0.0006	0.0006	0.0006	0.0005	0.0006	0.0006	0.0006
Lagged Cash Flow	-0.0387***	-0.0385***	-0.0386***	-0.0387***	-0.038***	-0.0388***	-0.0385***
Lagged Book to Market	-0.0060	-0.0063	-0.0060	-0.0058	-0.0058	-0.0056	-0.0058
Lagged Size	-0.0157***	-0.0156***	-0.0158***	-0.0164***	-0.015***	-0.0159***	-0.0160***
Lagged leverage	-0.0043***	-0.0043***	-0.0043***	-0.0043***	-0.004***	-0.0043***	-0.0043***
Lagged ROA	-0.0769***	-0.0767***	-0.0768***	-0.0773***	-0.075***	-0.0775***	-0.0770***
Lagged Sales Growth	-0.0039	-0.0040	-0.0039	-0.0039	-0.0039	-0.0040	-0.0038
Lagged Dividend Yield	-0.0018	-0.0017	-0.0017	-0.0018	-0.0016	-0.0017	-0.0017
Lagged Analyst Coverage	0.0060***	0.0060***	0.0061***	0.0061***	0.0061***	0.0062***	0.0059***
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.094	0.094	0.094	0.095	0.095	0.094	0.094
Firm-Year observations	16 206	16 206	16 206	16 206	16 206	16 206	16 206

This table presents coefficients and test statistics from estimations of the following regression:

$$(I/K)_{i,t} = \beta_0 + \beta_1(Q)_{i,t-1} + \beta_2(CSR)_{i-1} + \beta_3(Q_{i,t-1})*(CSR_{i,t-1}) + \beta_4(return)_{t+3} + \beta_5 CF_{i,t-1} + \beta_6(B/M)_{i,t-1} + \beta_7 Controls + \varepsilon_{i,t}$$

Where $I_{i,t}$ represents investment in plant and equipment for firm *i* during period *t*; K denotes the beginning-of-period value of total assets. Q is the ratio of firm's market value to replacement cost. CSR is firm social performance. The latter is based on disaggregated measures of CSR engagement. For instance, in Model 1, we rely on CSR community index which is equal to differences between strength items and concern items within the community dimension. We estimate all models using firm-fixed effects estimation. The latter accounts for unobserved time-invariant relations between explanatory variables and firm's investment. Year dummies coefficients are not reported for parsimony. One, two or three asterisks denote significance at the 10%, 5% and 1% levels, respectively.

In Table (4) and (5), CSR engagement is viewed as exogenous. To account for the issue of endogeneity, we rely, in Table (6), on both disaggregated measures of CSR and IV estimations. Again, the impact of CSR on investment-price association remains insignificant in 6 of 7 specifications (see table 6 for more details). These additional results do not lend support to the claim that CSR engagement enhances managers' ability to collect valuable private information from other market participants.

Table 6. Corporate Social Responsibility and Investment Sensitivity to Stock prices: Instrumental variable approach with disaggregated (dimensional) measures of SP.

Independent Variables	Model1 (Community)	Model2 (Diversity)	Model3 (Employee)	Model4 (Environment)	Model5 (Human Resources)	Model6 (Products)	Model7 (Corporate Governance)
Intercept	0.1522***	0.1560***	0.1603***	0.0853	0.1168***	0.0952***	0.1733
Lagged Tobin's Q	0.0625***	0.0578***	0.0655***	0.0561***	0.0619***	0.0677***	0.0576*
Lagged CSR	0.2066***	0.1025	0.5396**	0.6210***	0.1829***	0.1905	-0.2222
Lagged Q * Lagged CSR	**0.0122**	**-0.0084**	**-0.0100**	**-0.0900**	**-0.0814***	**-0.0139**	**0.0255**
Future return (t+3)	0.0014	0.0021	0.0029	0.0023	0.0019	0.0016	0.0024
Lagged Cash Flow	-0.1953***	-0.2028***	-0.1643***	-0.1794***	-0.1969***	-0.1901***	-0.1996***
Lagged Book to Market	-0.0515**	-0.0470**	-0.0560**	-0.0432**	-0.0502**	-0.0556**	-0.0440*
Lagged Size	-0.0134***	-0.0161***	-0.0117***	-0.0054	-0.0111***	-0.0049	-0.0186
Lagged leverage	-0.0056***	-0.0044**	-0.0033	-0.0048***	-0.0057***	-0.0049**	-0.0055***
Lagged ROA	-0.0722***	-0.0542***	-0.1510***	-0.0953***	-0.0754***	-0.0629**	-0.0532
Lagged Sales Growth	0.0067	0.0084	0.0058	0.0054	0.0051	0.0014	0.0094
Lagged Dividend Yield	-0.0161***	-0.0100***	-0.0065	-0.0068***	-0.0064***	-0.0064**	-0.0028
Lagged Analyst Coverage	0.0201***	0.0208***	0.0145***	0.0160***	0.0197***	0.0160	0.0168
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
P-value of Hansen J statistic	0.278	0.279	0.614	0.790	0.167	2.67e-05	0.482
Firm-Year observations	14 396	14 396	14 396	14 396	14 396	14 396	14 396

To address endogeneity concerns, this table presents coefficients and test statistics of our instrumental variable methodology. One, two or three asterisks denote significance at the 10%, 5% and 1% levels, respectively.

We also assess the robustness of our findings using disaggregated measures of SP based on strengths (STR) scores or concerns (CON) scores separately. So far, we have used "net" CSR scores at the aggregate and dimensional level (STR-CON). However, this approach could mask some relevant differences within a company with positive CSR actions (STR) and negative CSR actions (CON) cancelling each other. Therefore, we perform a series of additional robustness tests using dimensional STR scores and CON scores separately. Again, our results are robust to these additional tests.

Discussion

The neutral relationship between CSR and RE is not an indicator that CSR activities do not reduce adverse selection and that managers desire to learn new information from stock prices is not genuine. In this respect, we argue that even if CSR increases firm's disclosure, the total amount of information in the market may decrease or remain the same because CSR can also negatively impact the private information acquisition by other informed market participants. For instance, if financial analysts' incentives depend on the demand for firm's earnings forecasts, any

increase in managers' reporting about firm's future earnings could act as a substitute to analysts forecasting activities. Hence, if the incremental disclosure by socially responsible firms has the potential to interfere with private information acquisition or acts as a substitute to research activities of other market participants, CSR may decrease outsiders' incentives to acquire private information. The potential crowding out effect could harm managers' ability to learn new private information from stock prices and explain the neutral association between CSR and RE.

Goldstein and Yang (2019) propose a model that examines how the provision of more public information impacts research activities of sophisticated investors. According to them, the net effect of information production in the market depends on two types of information. Goldstein and Yang (2019) argue that managers know more about the first type (e.g. quality of firm's product) and wish to know more about the second type (e.g. market demand and competition). If managers disclose mostly new information they know with high precision in comparison to outsiders, they will end up learning from stock prices because outsiders still have strong incentives to acquire private information about which insiders have a less precise knowledge. On the other hand, if managers incremental disclosure is linked to factors they know with low precision, they will harm managerial learning because outsiders will be less inclined to focus their research activities on this type of information. In the same line of reasoning, Jayaraman and Wu (2019) show that the benefits of mandatory disclosure (e.g. reduction in adverse selection) can be traded off against the benefits of informed trading (e.g. increase in RE). The net effect should again depend on the type of information managers disclose. When firm disclosure is about factors managers wish to learn in depth, informed traders' incentives to acquire private information linked to these factors will decrease. As a result, the outsiders' contribution to stock prices about the unknown factors will decrease. Ultimately, the weak informational feedback from stock prices will harm managerial learning. Future research could then investigate how CSR can change the costs and benefits of private information production. It can also examine the impact of CSR when managers disclosure is about a variable they want learn more about. The findings can help socially responsible firms implement more efficient disclosure policies that will increase the overall quality of information.

Conclusion

In this paper, we examine whether strong CSR engagement enables managers to extract valuable information from their stock prices and use this informative feedback to make value maximizing investment decisions (high RE). We build on a growing strand of research that suggests that managers learn from their stock prices when making investment decisions. In our empirical tests, we use the association between investment and stock prices as a proxy for RE. We argue that positive and significant investment-price sensitivity indicates high RE. In addition, we assume that if CSR engagement helps managers take efficient actions, firm's social activities should strengthen the positive and significant relation between investment and stock prices.

Our study offers a new perspective on the motives of CSR engagement. It also offers a new perspective on the association between CSR and markets efficiency. In fact, we contribute to the few studies that test such relationship by incorporating the feedback effect from stock prices into traditional models of price discovery. More specifically, we consider not only whether stock prices accurately predict firm's fundamentals but also whether they reveal new

information for managers to take value-maximizing actions. Traditional models of market efficiency focus only on whether the price of a given stock accurately reflects firm's fundamentals.

The empirical results suggest that RE is not higher for firms with strong CSR engagement. Hence, CSR activities do not stimulate the production of new information that will help managers make value-maximizing investment decisions. In future research, it will be interesting to investigate why the learning hypothesis does not provide an explanation for managers CSR activities. This examination is beyond the scope of this paper but offers many promising avenues for future research.

References

Archel, P., Husillos, J., Larrinaga, C., & Spence, C. (2009). Social disclosure, legitimacy theory and the role of the state. *Accounting, Auditing & Accountability Journal 22*, 1284-1307. http://dx.doi.org/10.1108/09513570910999319

Baker, M., Stein, J., & Wurgler., J. (2003). When does the market matter? Stock prices and investment of equity-dependent firms. *Quarterly Journal of Economics* 118, 969-1005. http://dx.doi.org/10.1162/00335530360698478

Barnea, A., & Rubin, A. (2010). Corporate social responsibility as a conflict between shareholders. *Journal of Business Ethics 97*, 71-86. http://dx.doi.org/10.1007/s10551-010-0496-z

Bond, P., Edmans, A., & Goldstein, I. (2012). The real effects of financial markets. *The Annual Review of Financial Economics 4*, 339-360. http://dx.doi.org/10.1146/annurev-financial-110311-101826

Bouslah, K., Kryzanowski, L., & M'Zali, B. (2013). The impact of the dimensions of social performance on firm risk. *Journal of Banking & Finance 37*, 1258-1273. http://dx.doi.org/10.1016/j.jbankfin.2012.12.004

Bouslah, K., Kryzanowski, L., & M'Zali, B. (2016). Social performance and firm risk: impact of the financial crisis. Journal of Business Ethics. Vol Online First . DOI: 10.1007/s10551-016-3017-x

Chen, Q., Goldstein, I., & Jiang W., 2006. Price informativeness and investment sensitivity to stock price. *The review of Financial Studies* 20, 115-147.

Cho, C.H., & Patten, D.M. (2007). The role of environmental disclosures as tools of legitimacy: a research note. *Accounting, Organization and Society 32*, 639-647. http://dx.doi.org/10.1016/j.aos.2006.09.009

Cormier, D., & Magnan, M. (2014). The impact of social responsibility disclosure and governance on financial analysts' information environment. *Corporate Governance: The International Journal of Effective Board Performance 14*, 467-484. http://dx.doi.org/10.1108/CG-01-2013-0012

Cui, J., Jo, H., & Na, H. (2012). Does corporate social responsibility reduce information asymmetry? Working paper. Korea University.

Deegan, C. (2002). The legitimising effect of social and environmental disclosures - A Theoretical foundation. *Accounting, Auditing & Accountability Journal 15*, 282-311. http://dx.doi.org/10.1108/09513570210435852

Dhaliwal, D., Li, O., Zhang, A., & Yang, Y. (2011). Voluntary nonfinancial disclosure and the cost of equity capital: the initiations of corporate social responsibility reporting. *The Accounting Review 86*, 59-10. http://dx.doi.org/10.2308/accr.00000005

Doukas, J.A., Kim, C.K, & Pantzalis, C. (2010). Arbitrage risk and stock mispricing. *The Journal of Financial and Quantitative Analysis* 45, 907-934. http://dx.doi.org/10.1017/S0022109010000293

Dow, J., & Gorton, G. 1997. Stock market efficiency and economic efficiency: is there a connection? *Journal of Finance 52*, 1087-1129. http://dx.doi.org/10.1111/j.1540-6261.1997.tb02726.x

Edmans, A., Goldstein, I., & Jiang, W. (2012): The Real Effects of Financial Markets: The impact of Prices on Takeovers. *Journal of Finance* 67, 933–971.

Edmans, A., Jayaraman, S., & Schneemeier, J. (2017). The source of information in prices and investment-price sensitivity. *Journal of Financial Economics* 126, 76-96.

Fazzari, S., Hubbard R.G., & Petersen B. (1988). Financing constraints and corporate investment. B*rookings papers on Economic Activity* 1, 141-195. http://dx.doi.org/10.2307/2534426

Foucault, T, & Frésad L. (2012). Cross-listing, investment sensitivity to stock prices, and the learning hypothesis. *The Review of Financial Studies 25*, 3305-3350.

Freeman, R. (1984). *Strategic management: a stakeholder approach*. Massachusetts: Pitman Publishing Inc.

Freeman, R. (1987). The association between accounting earnings and security returns for large and small firms. *Journal of Accounting and Economics 9*, 195-228. http://dx.doi.org/10.1016/0165-4101(87)90005-X

Freeman, T., & Hasnaoui, A. (2011). The meaning of corporate social responsibility: the vision of four nations. *Journal of Business Ethics 100*, 419-443. http://dx.doi.org/10.1007/s10551-010-0688-6

Friedman, M. (1970). The social responsibility of business is to increase its profits. *New York Times*, 122-126.

Goldstein, I., & Guembel, A., (2005). Manipulation and the allocational role of prices. Working paper, University of Pennsylvania and Oxford University.
Goldstein, I., & Yang. L. (2019). Good disclosure, bad disclosure. *Journal of Financial Economics 131*, 118-138.
Harjoto, M., & Jo, H. (2008). Corporate social responsibility and operating performance. *Journal of the Academy of Business and Economics 8*, 59-71
Harjoto, M., & Jo, H. (2011). Corporate governance and CSR nexus. *Journal of Business Ethics 100*, 45-67. http://dx.doi.org/10.1007/s10551-011-0772-6
Hillegeist, S.A, Kausar, A., Kraft, A.G., & Park, Y.C. (2020). Financial reporting frequency and managerial learning from stock prices. Available at SSRN : http://dx.doi.org/10.2139/ssrn.3616579
Jayaraman, S., & Wu, J.S. (2019). Is silence golden? Real effects of mandatory disclosure. *Review of Financial Studies 32*, 2225-2259.
Jensen, M., & Murph, K. (1990). Performance pay and top management incentives. *Journal of Political Economy 98*, 225-263. http://dx.doi.org/10.1086/261677
Jo, H., & Harjoto, M. (2012). The causal effect of corporate governance on corporate social responsibility. *Journal of Business Ethics 106*, 53-72. http://dx.doi.org/10.1007/s10551-011-1052-1
Kaplan, N., & Zingales, L. (1997). Do investment-cash flow sensitivities provide useful measures of financial constraints? *The Quarterly Journal of Economics* 112, 169-215.
Lin, T.C., Liu, Q., & Sun, B. (2019). Contractual managers incentives with stock price feedback. *American Economic Review 109*, 2446-2468.
Liu, H., & Hou, C. (2019). Does trade credit alleviate stock price synchronicity? Evidence from China. *International Review of Economics & Finance 61*, 141-155.
McWilliams, A. & Siegel, D. (2001). Corporate Social Responsibility: A Theory of the Firm Perspective. *Academy of Management Review*, *26*, 117-127. http://dx.doi.org/10.2307/259398
Montiel, I., Husted, B., & Christmann, P. (2012). Using private management standard certification to reduce information asymmetries in corrupt environments. *Strategic Management Journal*, 33, 1103–1113.
Morck, R., Shleifer, A., & Vishny R.W., 1990. The stock market and investment: is the market a sideshow? *Brookings Papers on Economic Activity* 2, 157-215.
Murphy, K.J. (1999). *Executive compensation.* Handbook of Labor economics. Orley Ashenfelter and David Card, eds. Amsterdam.
Peters, R. & Taylor, L. (2017). Intangible capital and the investment q relation. *Journal of Financial Economics* 123, 251-272.
Petrovits, C. (2006). Corporate-sponsored foundations and earnings management. *Journal of Accounting and Economics* 41, 335-361.
Prior, D., Surroca, J., & Tribo, J. (2008). Are socially responsible managers really ethical? Exploring the relationship between earnings management and corporate social responsibility. *Corporate Governance* 16, 160-177.
Ramchander, S., Schwebach, R. G., & Staking, K. (2012). The informational relevance of corporate social responsibility: Evidence from DS400 index reconstitutions. *Strategic Management Journal*, 33, 303–314.
Reverte, C. (2009). Determinants of corporate social responsibility disclosure ratings by Spanish listed firms. *Journal of Business Ethics 88*, 351-366. http://dx.doi.org/10.1007/s10551-008-9968-9
Roll, R. (1988). R^2 . *The Journal of Finance 43*, 541-566.
Subrahmanyam, A., & Titman, S. (1999). The going-public decision and the development and financial markets. *Journal of Finance 54*, 1045-1082. http://dx.doi.org/10.1111/0022-1082.00136
Tobin, J. (1969). A general equilibrium approach to monetary theory. *Journal of Money, Credit and Banking 1*, 15-29. http://dx.doi.org/10.2307/1991374
Wang, H., & Choi, J. (2013). A new look at the corporate social-financial performance relationship: the moderating roles of temporal and interdomain consistency in corporate social performance. *Journal of Management 39*, 416-441. http://dx.doi.org/10.1177/0149206310375850.