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## CSR and cost of capital: evidence from Japan

### Abstract

**Purpose:** This study examines the link between corporate social performance (CSP) and the cost of capital of Japanese firms in 2008–2013, considering the influences of banking relationships and ownership structure.

**Design/methodology/approach:** It examines the relation between CSP and the cost of capital in terms of the cost of debt, cost of equity, and weighted average cost of capital, using a composite CSP measure based on stakeholder relationships. A regression model is adopted, controlling for bank dependency, ownership structure, and firm-specific attributes.

**Findings:** Institutional ownership influences the CSP–cost of equity relation and reduces the cost of equity, while CSP is perceived by debtors as not information-mitigating for the observed period. For 2008–2010, the relation between CSP and bank dependency increases the cost of debt; however, the positive influence of bank dependency on the cost of debt dilutes during 2010–2013 as the shift to a more market-oriented financial market in Japan occurs.

**Practical implications:** Although bank borrowing is important, especially for small firms, non-financial disclosure makes external financing more flexible. Institutional investors concerned about the non-financial aspects of business therefore play an important role in mitigating the information asymmetry that exists in the capital market.

**Originality/value:** This study extends research on the CSP–cost of capital link by considering structural changes in financial systems (e.g., capital market perception of CSP and banks as delegated monitors).

**Keywords:** Corporate social responsibility; cost of capital; banking relationship; institutional ownership

**Article classification:** Research paper

## 1. Introduction

Since the 1970s, numerous studies have investigated the link between corporate social responsibility (CSR) and financial performance. A firm's CSR strategy is recognized as a determinant of its long-term success in terms of competitive advantage, risk management, and sustainability. Through financial liberalization and globalization, the relationship between the financial market's perception of CSR and corporate managers' decisions on financing has become increasingly important for the future development and sustainability of business.

The extent to which CSR affects the cost of capital has become a dominant theme in CSR research over the past decade. From a theoretical perspective, a corporate strategy that sufficiently considers the non-financial aspects of the business as well as conflicts among stakeholders reduces business risk and mitigates the information asymmetry faced by lenders and investors in the financial market (Perrini et al., 2011). Thus, high corporate social performance (CSP) could reduce the agency costs faced by a company that pursues external financing. From a practical perspective, the market perception of CSP may incentivize the company to initiate CSR in order to distinguish effective CSR practices from formative CSR practices and to promote non-financial disclosure (Carroll and Shabana, 2010).

From the viewpoint of information asymmetry, institutional investors may prefer high CSP firms to reduce information costs, while banks may accumulate firm-specific information based on relationship lending rather than select high CSP borrowers. Further, ownership structure and the banking relationship (dependency on bank borrowing or bank dependency hereafter) could influence the link between CSP and the firm's cost of capital differently (Roberts and Yuan, 2010; Goss and Roberts, 2011).

Based on the foregoing, this study explores how CSP in terms of CSR-related non-financial information affects the cost of capital, explicitly considering the influence of bank dependency and ownership structure, in a bank-centered financial market shifting to a more market-oriented system. Specifically, this study examines the relation between CSP and the cost of capital in terms of the cost of debt capital (cost of debt hereafter), the cost of equity capital (cost of equity hereafter), and the weighted average cost of capital (WACC) as a comprehensive cost of capital.

The contributions of this study to the body of knowledge on this topic are threefold. First, this study explores the influences of institutional ownership and bank dependency on the relation between CSP and the cost of capital to shed light on the conflicts between shareholders and debtors in the context of asymmetric non-financial information. Second, in the context of Japanese firms, this study provides evidence that institutional investors enhance CSP and mitigate information asymmetry in the capital market. Third, this study calculates original CSP indices for Japanese firms based on stakeholder relations, as no public data based on the stakeholder approach are available.

This study makes a number of interesting findings. First, it finds that while institutional ownership has no negative link with CSP, it does reduce the cost of equity by enhancing CSP, while bank dependency increases the cost of debt for the observed period. This finding suggests that CSP produces conflicts between shareholders in the capital market and debtors based on relationship lending. Second, by comparing the results for two sub-periods, the positive influence of bank dependency on the cost of debt

becomes insignificant in the recent sub-period, although institutional ownership continues to negatively affect the cost of equity. These results weakly suggest that financial institutions as well as corporate borrowers are becoming more aware about non-financial disclosure. Third, the presented findings extend the research on the link between the market perception of CSP and the cost of capital in the context of a bank-centered financial system in transition to a more market-oriented system. This study also adds evidence to the body of CSR research on cross-country comparisons.

The remainder of this paper is organized as follows. Section 2 reviews the relevant research and defines the basic concepts. Section 3 presents the hypotheses to examine. Section 4 describes the data and empirical methodology and summarizes the results. Section 5 offers the implications of the presented findings. Section 6 concludes and addresses future research directions.

## **2. Prior research and basic concepts**

### **2.1 CSR and capital market perception**

CSR has become a core concept in corporate management from a long-term perspective. CSR activities include incorporating social characteristics or features into product and manufacturing processes, adopting progressive human resource management practices, achieving higher levels of environmental performance through recycling and pollution abatement, and advancing the goals of community organizations (McWilliams et al., 2006, p. 2). According to European Commission (2001), Chen et al. (2015) define CSR as *voluntarily integrating social, environmental and social concerns into their companies' operations and their interactions with stakeholders* (p. 1) and measure the extent to which corporations practically handle their responsibility for stakeholders. In the context of strategic CSR, this study defines CSR as corporate strategies for the long-term success of the firm.

CSP is corporations' efforts and achievements towards taking social responsibility in running their business. Wood (1991) defines CSP as *an organisation's configuration of principles of social responsibility, processes of social responsiveness, and policies, programs and observable outcomes as they relate to the firm's social relationships* (p. 93). Many researchers have empirically examined the relationship between CSP and corporate financial performance, focusing on conceptualizing, specifying, and testing the link (e.g., Cochran and Wood, 1984; Graves and Waddock, 1994; Russo and Fouts, 1997).

Although the empirical results on the association between CSP and profitability are inconclusive, many findings support the risk reduction aspect of CSP (see Orlitzky et al., 2003; Van Beurden and Gossling, 2008). More recently, researchers have increasingly shifted their focus towards the financial market's perception of CSR in the determination of risk, with many studies finding a negative relation between CSP and idiosyncratic risk (Boutin-Dufresne and Savaria, 2004; Girerd-Potin et al., 2014; Mishra and Modi, 2013). Others explore firm valuation models with CSR and show the implications for the integrative logic of CSR in managing long-term risk and sustainability (Gregory et al., 2014; Gao and Bansal, 2013).

Since the 1960s, the agency approach to the cost of capital has been a major concern in corporate finance theory. Apart from the general equilibrium model of the capital market developed by Mossin (1966),

the acquisition of information and its dissemination to other economic units are central activities in all areas of finance, and institutional structures and information costs explain financial behavior (Merton, 1987). Under asymmetric information in a capital market, the agency costs associated with ownership structure and outside claims on the firm including debt and equity demonstrate conflicts related to who bears the cost (Jensen and Meckling, 1976). In addition to these standard views, the extended agency approach incorporates various stakeholder relations, which determine corporate value (Freeman, 1984, 1994; Waddock and Graves, 1997), and some research focuses on the social factors that influence the choices made by responsible investors (Williams, 2007).

Theoretically, CSR could determine the cost of equity, which represents the required rate of return to shares by investors through several channels. First, CSR reduces the uncertainty of the firm's future cash flows and explores business opportunities to enhance future cash flow. El Ghouli et al. (2011) demonstrate a negative relationship between CSP and the implied equity risk premium. They discuss that an integrated mechanism through which CSR affects firm value is its effects on firm risk. Gregory et al. (2014) investigate the effect of CSR on firm value and seek to identify the source of that value by disaggregating the effects on forecasted profitability, long-term growth, and the cost of capital.

Based on the risk mitigation view, Sharfman and Fernando (2008) focus on the capital market's response to improved environmental risk management and find that this reduces the cost of capital for both equity and debt financing. Goss and Roberts (2009) examine the link between CSR and bank debt. Ye and Zhang (2011) examine whether an improvement in firms' social performance reduces the cost of debt in China. They find that firms with extremely low or extremely high CSR are subject to a higher cost of debt financing. This U-shaped relation suggests that the optimal level of CSP differs between large state-owned firms and small private firms.

Second, the active extension of non-financial disclosure-related CSR mitigates information asymmetry and reduces the agency costs incurred by the misalignment of interests between management and financiers, which corporate managers face in financing. Jensen and Meckling (1976) indicate that any information that mitigates information asymmetries between contracting parties, thereby reducing adverse selection and moral hazard problems, would be value-relevant. A large body of the literature documents that financial disclosures provide value-relevant information and thus reduce the cost of capital. Dhaliwal et al. (2011) examine the benefits of the voluntary disclosure of CSR practices, using several models of *ex ante* or implied cost of equity, while Dhaliwal et al. (2012) find that the issuance of standalone CSR reports is associated with lower analysts' forecast error. More recently, Ioannou and Serafeim (2015) find a positive impact of CSR on sell-side analysts' recommendations.

There are significant variations in CSR disclosure across countries. Van der Laan Smith et al. (2005) find that large companies in Norway and Denmark have a higher level and quality of CSR disclosure than do US firms. This finding suggests that the market perception of CSP depends on the quality of non-financial disclosure in the country. Menz (2010) investigates the link between CSR disclosure and the cost of Euro corporate bonds and finds that CSP is not incorporated into the pricing of such bonds. In the context of Chinese firms, Gong et al. (2016) show the negative link between the quality of CSR reports and

cost of corporate bonds.

Third, CSR activities lower constraints (e.g., difficulties accessing financing) or frictions in the financial market by enhancing investor trust in the management of the firm and deepening cooperation between them. Chen et al. (2014) find that firms with better CSR performance face lower capital constraints because of their better stakeholder engagement and higher CSR-related disclosure. Further, the external assessment of credit risk can influence the trust and reputation of the firm in the market. Ge and Liu (2015) examine the link between CSP and the cost of new issues by US firms, using credit ratings as an *ex ante* cost of debt, and find that better CSR performance is associated with better credit ratings. Overall, prior studies therefore indicate that the relation between CSR awareness and corporate strategies may differ by the institutional surroundings of the firm.

## **2.2 CSR and ownership structure**

Numerous studies examine the role of institutional investors in corporate governance, because good corporate governance circumvents the problems associated with information asymmetry (e.g., Gompers and Metrick, 2001). More recently, CSR research has explored the effects of ownership structures on CSP in the development of global businesses and cross-border investment (Cox and Schneider, 2010; Dam and Scholtens, 2012, 2013). Many studies suggest that institutional investors can drive corporate managers to improve their firms' CSP and increase the degree of engagement and disclosure in US and UK markets (Chaganti and Damanpour, 1991; Coffey and Fryxell, 1991; Graves and Waddock, 1994; Johnson and Greening, 1999; Cox et al., 2004; Neubaum and Zahra, 2006). Roberts and Yuan (2010) investigate the extent to which the concentration of institutional ownership influences the cost of debt and find that the cost of debt tends to rise because of agency costs, although institutional ownership has a negative relationship with the cost of debt for firms with asymmetric information.

According to prior research, institutional investors can improve the CSR practices of investee firms. A good CSR strategy from an investor's viewpoint could be discretionary cost spending for debtors based on relationship lending, thereby linking to the increasing cost of debt. There is a conventional view that firms in Asia, typically in Japan, are less aware of corporate governance and CSR disclosure than US and European firms. [1] In the Japanese firms' context, following financial liberalization in the late 2000s, corporate governance reform has gradually developed and firms have been increasingly concerned about the role of shareholders and non-financial disclosure; [2] nevertheless, it is not yet as sufficient as the concern of their US and European counterparts. In the Japanese market, Suto and Takehara (2014) find that foreign investors prefer high CSP firms and that an increase in foreign ownership enhances CSP for 2007–2013. Thus, the impact of ownership structure on CSR practices and the cost of external financing remains an interesting empirical issue to examine.

## **2.3 CSR and bank borrowing**

Some studies investigate the link between CSR and credit risk in the debt market. In general, companies need to refinance themselves in the debt market more frequently than in the equity market

because of the limited maturity of short- and medium-term bonds (Oikonomou et al., 2014). Credit instruments are crucial for the external financing of corporations, especially in a bank-centered financial system such as that typically observed in Japan and other Asian countries. On the contrary, long-term institutional investors such as pension funds and insurance companies are likely to be more concerned with bond instruments than equity.

Goss and Roberts (2011) focus on banks' specialized role as delegated monitors of borrowing firms and examine the link between CSP and bank loans in order to identify the different aspects of discretionary CSR activities. They assume that banks have no social agenda to promote but are interested in repaying their loan obligations. Their empirical results demonstrate that US firms with the worst CSR scores pay more on their bank debt compared with firms with higher scores. Moreover, low-quality borrowers that engage in discretionary CSR face higher loan spreads and shorter maturities, while banks regard CSR as a cost-spending practice rather than as a form of risk management.

Successful lending often depends on the initiation of risk management. Caballero et al. (2008) explore whether misdirected bank lending based on the business relationships among large companies played a key role in prolonging the Japanese macroeconomic stagnation that began in the early 1990s. This study focuses on the widespread practice of Japanese banks continuing to lend to insolvent firms and shows the distorting effect on healthy firms. In such a situation, companies that have secured a strong relationship with banks could spoil their CSR strategies and rather enhance the cost of equity because of the information asymmetry in the market.

The impact of CSR on the cost of debt also differs between that in arm's length transactions in the public debt market and that in relationship-based lending by banks. Oikonomou et al. (2014) examine the effects of different CSP dimensions on the cost of debt in the bond issues of large US companies. They find that overall good performance is rewarded and corporate social/environmental transgressions are penalized. Although CSP mitigates information asymmetry in the bond and equity markets, it still may be unimportant for banks.

#### **2.4 CSR and financial constraints**

Under information asymmetry, some firm attributes may influence the availability of external financing. Financial constraints including capital constraints and credit constraints are defined as market frictions or an inability to obtain finance. Better stakeholder engagement and higher CSR transparency lower capital constraints (Chen et al., 2014). Young and small firms that face frictions in debt financing may also invest in CSR to a larger degree than large and established firms (Goss and Roberts, 2011). Firm size and a long-term bank relationship could further be received as signals of superior performing firms. Firms with high internal liquidity are less incentivized to develop CSR strategies to avoid constraints in external financing. Moreover, the CSR awareness of firms may differ by industry because stakeholder relationships and agency conflicts differ by business. Thus, under information asymmetry, the cost of capital could be influenced by firm size, expected profitability, internal liquidity, and industry or business type as well as other firm characteristics related to financial constraints.

### 3. Hypotheses development

This study examines how CSP by Japanese listed companies has affected the cost of capital (i.e., cost of equity, cost of debt, and WACC), using sample data from 2007 to 2013. Then, it explicitly considers the effects of bank dependency and ownership structure on the link between CSP and the cost of capital. As discussed in Section 2, many empirical results find a negative relation between CSP and the idiosyncratic risk of the firm (Sharfman and Fernando, 2008; El Ghouli et al., 2011; Gregory et al., 2014) and show that CSP mitigates the information asymmetry in the financial market (e.g., Dhaliwal et al., 2011, 2012; Ioannou and Serafeim, 2015).

Theoretically, if CSP is regarded as information on the quality of the firm, high CSP is expected to reduce the risk premium in both the equity and the debt markets. However, even if CSP reduces the risk premium the firm faces, CSR demands corporate resources and substantial time before having the expected effect (Russo and Fouts, 1997; Branco and Rodrigues, 2006; Barnett, 2007). Focusing on the cost of equity, Hypothesis 1 is proposed.

***Hypothesis 1: The higher the level of CSP, the lower is the firm's cost of equity.***

Institutional investors can drive corporate managers to improve their firms' CSP (Chaganti and Damanpour, 1991; Coffey and Fryxell, 1991; Graves and Waddock, 1994; Johnson and Greening, 1999; Cox et al., 2004; Neubaum and Zahra, 2006). If it is expected that institutional investors contribute to improving non-financial disclosure, higher institutional ownership reduces agency costs. If banks behave as delegated monitors of the firm as Goss and Roberts (2011) emphasize, bank dependency is perceived as a sign of a superior performing firm in the equity market. Thus, high bank dependency could have a negative impact on the cost of equity. On the contrary, if the bank relationship decreases the efficient management of the borrowing firm by slackening monitoring and strengthening collusion with each other, bank dependency could be perceived as a sign of opaque corporate management and increase agency costs, as Caballero et al. (2008) investigate for Japanese banks in the 1990s. Thus, not only ownership structure but also bank dependency could have a significant impact on the linkage between CSP and the cost of equity. Thus, Hypotheses 1a and 1b are proposed.

***Hypothesis 1a: Institutional ownership influences the relationship between CSP and the cost of equity and reduces the cost of equity.***

***Hypothesis 1b: Bank dependency influences the relationship between CSP and the cost of equity and reduces the cost of equity.***

If CSR reduces the idiosyncratic risk of the firm by enhancing the transparency of management, CSP also reduces the risk premium in the debt market. Concerning bank borrowings, Sharfman and Fernando



(2008) and Goss and Roberts (2009) investigate the link between CSP and the cost of debt and Roberts and Yuan (2010) focus on the relation between corporate governance and the cost of debt. Many recent studies also investigate the link between CSP and the cost of debt issued in the corporate debt market (Menz, 2010; Ye and Zhang, 2011; Ge and Liu, 2015; Gong et al., 2016). Hence, Hypothesis 2 is proposed.

***Hypothesis 2: The higher CSP, the lower is the firm's cost of debt.***

If banks play the role of delegated monitor, relationship banking is expected to reduce the financial distress cost of borrowers. If institutional ownership is expected to improve the disclosure and transparency of investees, it could also reduce the cost of debt. However, equity owners and debtors are different types of risk bearers with different access to information on the firm and face different conflicts of interests with management (Jensen and Meckling, 1976).

Therefore, banks that have strong relationships with borrowers may be more aware of the cost-spending aspect of CSR and less concerned with its risk management aspect than shareholders. For institutional investors, however, the behavior of banks as delegated monitors may provide information that lowers risk (Roberts and Yuan, 2010). To examine the effect of ownership structure and bank dependency on the relation between CSP and the cost of debt, the following two additional hypotheses are thus proposed.

***Hypothesis 2a: Institutional ownership influences the relationship between CSP and the cost of debt and reduces the cost of debt.***

***Hypothesis 2b: Bank dependency influences the relationship between CSP and the cost of debt and reduces the cost of debt.***

If CSR mitigates the information asymmetry faced by both investors and debtors, higher CSP lowers WACC. However, a conflict of interests between investors and debtors could complicate the comprehensive effect of CSP on WACC. To examine this effect, Hypothesis 3 is proposed by controlling for ownership structure and the bank dependency of debt.

***Hypothesis 3: The higher CSP, the lower is the firm's WACC.***

Conflicts of interests between equity owners and debtors have been more serious during the period of prolonged financial distress since the 1990s in Japan. [3] In the 2000s, recovering banks tended to select high-quality borrowers and preferred short-term loan contracts. On the contrary, institutional investors became active in corporate governance and more aware about CSR in financial globalization (Suto and Takehara, 2014). Therefore, the association between CSP and the comprehensive cost of capital for a firm presented as WACC may differ by the observed period.

## 4. Empirical analyses

### 4.1 CSP and firm data

The CSP indices used in this study were developed by Suto and Takehara (2014, 2016a, 2016b) based on the annual CSR questionnaire survey administered by Toyo Keizai Incorporated. The indices include five dimensional indices according to the stakeholder approach (employment, environment, social contribution, safety and security, and internal governance) and a consolidated composite index. [4] The questionnaire was sent to all public firms listed on the Tokyo Stock Exchange (TSE) as well as the major listed companies on other exchanges in Japan.

The sample period of this study ran from 2007 to 2013. Firms that did not respond to the CSR questionnaire survey and firms in financial sectors were excluded from the sample. Table 1 summarizes the number of firm-year observations in each year and in each sector. [5] The number of firm-year samples was lowest in 2007 (481) and highest in 2013 (525). The total number of samples in the observation period (2007 to 2013) was 3,461 and 83.13% were listed on the first section of the TSE. This study uses a lagged one-year CSP variable as one of the instruments in the two-stage regression analysis; observations that did not have lagged one-year CSP were excluded from the regression analysis. Then, the number of observations from 2007–2010 was 1,281 and that for 2011–2013 was 1,399. As a result, the number of observations in the regression analysis was 2,680.

[Table 1 around here]

### 4.2 Estimated cost of capital

As discussed above, superior CSP may provide a firm with better access to financing by mitigating the information asymmetry of idiosyncratic risk and lowering the cost of capital. Theoretically, the cost of equity is the expected rate of return on shares demanded by investors in the equity market, while the cost of debt is the *ex-ante* costs of borrowing that reflect the default risk premium demanded by debtors. Most public firms finance themselves with both debt and equity by balancing the benefits and costs in a given macroeconomic situation and under the prevailing market structure and corporate taxation rates. Assuming the presence of a tax shield effect, the cost of debt is defined after reducing the tax saving.

WACC is defined in equation (1) (Modigliani and Miller, 1958):

$$r_{WACC} = \frac{E}{D+E} r_E + \frac{D}{D+E} (1-\tau) r_D$$

(1)

where  $D$ ,  $E$ ,  $r_E$ ,  $r_D$ , and  $\tau$  denote total debt, equity capital, the cost of equity, the cost of debt (before tax), and the effective corporate tax rate, respectively.

Few empirical studies focus on the CSR and WACC linkage. Sharfman and Fernando (2008) show that environment risk management has a positive relation with the cost of debt (after offsetting the tax advantage) and a negative relation with the cost of equity and with WACC. This study estimated the cost

of equity ( $CostE$ ) based on the conditional version of the Fama and French three-factor model (Fama and French, 1997) [6] and the cost of debt after the tax-saving effect ( $CostD$ ) based on data drawn from financial statements. By employing the Monte Carlo simulation method, it computed the marginal tax of the firm and used this to compute the WACCs of individual firms.

With respect to the cost of debt, many studies use the spreads of loans and bonds (Roberts and Yuan, 2010; Goss and Roberts, 2011; Menz, 2010). Although spread is a good measure of pricing debt, consistent datasets of spreads are not available for the sample. Alternatively, this study uses payable interest rates after tax as a proxy of the cost of debt:  $CostD$  (interest payments/book value of interest-bearing debt)  $(1-\tau)$ . Then,  $\tau$  is the marginal tax rate calculated following Graham (1996). Interest payment from short-term debt is included in the numerator and short-term debt (short-term loans payable and corporate bonds maturing within one year) is included in the denominator.

### 4.3 Control variables

As discussed above, bank dependency and institutional ownership influence the link between CSP and the cost of capital. By adding these variables, this study selects four firm characteristics that affect access to external financing: firm size, leverage, long-term profitability, and internal liquidity. It also introduces loan maturity to reflect debtors' contract preference and market-evaluated probability of default by distance to default.

Bank dependency ( $BankD$ ), an explanatory variable, is defined as bank loans payable divided by interest-bearing debt, while the ratio of shares held by non-individuals ( $InstCon$ ) is used as a proxy of institutional ownership.

Generally, a larger firm is accepted to demonstrate better corporate governance and greater stability. Indeed, many empirical studies have found a significant link between a large firm size and a low cost of capital (e.g., Sharfman and Fernando, 2008; El Ghouli et al., 2011; Goss and Roberts, 2011). Hence, in this study, firm size is calculated by taking the natural logarithm of the market value of equity ( $lnMV$ ). The size dummy variables used in regression model (2) are also computed based of  $lnMV$ .

Leverage is a determinant of long-term financial risk that affects both the cost of equity and the cost of debt. Theoretically, higher leverage is expected to relate to a higher cost of equity (Modigliani and Miller, 1958), while an increase in leverage raises the marginal cost of debt (e.g., Binsbergen et al., 2010). Empirically, many studies examine the impact of leverage on the cost of capital (Dhaliwal et al., 2006; Sharfman and Fernando, 2008; Roberts and Yuan, 2010; Goss and Roberts, 2011). This study defines leverage as interest-bearing debt (book value) scaled by the market value of equity ( $DER$ ).

Excess internal liquidity may be regarded as a slack of internal funds, which leads to inefficient management in the equity market, while it could be received as a buffer to reduce default risk by lenders. This study thus uses net working capital scaled by total assets ( $NWCTA$ ) as a proxy of internal liquidity (e.g., Goss and Roberts, 2011).

Firm-level profitability is regarded a key determinant of future investment. Higher expected profitability will mitigate the frictions the firm faces in the financial market (e.g., Chen et al., 2014).

Earnings before interest and before taxes scaled by total assets (*EBITTA*) is used as a proxy of long-term profitability (Goss and Roberts, 2011). This study also uses *EBITTA*. This study further uses the growth rate of sales (*SLSG*) as a proxy of firm growth and the book-to-market ratio (*B/M*) as a proxy of market value.

Default risk received in the financial market affects the linkage between CSP and the cost of debt. Here, this study estimates the distance to default of the firm (*DD*) by employing the model developed by Vassalou and Xing (2004). *DD* serves as an inverse measure of the frequency of bankruptcy. Higher *DD* demonstrates a lower probability of default. Finally, this study adds a sin industries dummy variable (*DSIN*) for 23 Japanese firms (Japan Tobacco, eight from the brewing industry, and 14 firms whose sales heavily depend on Japanese pinball games).

#### 4.4 Correlations

Table 2 presents the descriptive statistics in Panel A and Pearson correlations of the CSP index, the cost of capital metrics, and eight control variables in Panel B. CSP is significantly negative at the 1% level with the cost of equity (-0.130) and WACC (-0.094), while the cost of debt is positive and weak (0.019). According to the results, higher CSP is related to a lower cost of equity but a higher cost of debt.

With regard to the correlations between CSP and firm characteristics, firm size (*lnMV*) and institutional ownership (*InstCon*), profitability (*EBITTA*), bank dependency (*BankD*), and distance to default (*DD*) are systematically positive as expected. Among these, the correlations with *lnMV* (0.596) and *InstCon* (0.420) are remarkable. By contrast, CSP has negative correlations with bank dependency (*BankD*), leverage (*DER*), liquidity (*NWCTA*), the book-to-market ratio (*B/M*), and growth rate (*SLSG*). Among these, *B/M* has the highest negative correlation with CSP (-0.347) as expected. These findings suggest that larger-scale firms and firms that have greater capital market power have higher CSP.

[Table 2 around here]

#### 4.5 Regression analyses and results

This study next constructs the following regression model to investigate the relationship between the composite CSP measure and the cost of capital by controlling for bank dependency, ownership structure, and the seven other firm-specific variables including the sin industry dummy. As shown in Table 2, firm size has a strong correlation with CSP and some of the firm attributes. This study transforms firm size into four dummies based on size-ranked quintile portfolios because the association between firm size and the cost of capital is non-linear in the Japanese firms according to Suto and Takehara (2016a, 2016b). It also introduces sector and year dummies.

By imposing two cross-terms, *BankD*×*CSP* and *InstCon*×*CSP*, the results from the regression analyses are associated with the research hypotheses. The following regression model is employed:

$$\begin{aligned}
r_{j,t} = & \alpha + (\beta_1 + \beta_2 \text{BankD}_{j,t} + \beta_3 \text{InstCon}_{j,t}) \text{CSP}_{j,t} + \beta_4 \text{DER}_{j,t} \\
& + \beta_5 \text{EBITTA}_{j,t} + \beta_6 \text{NWCTA}_{j,t} + \beta_7 \text{BM}_{j,t} + \beta_8 \text{SLSG}_{j,t} + \beta_9 \text{DD}_{j,t} + \beta_{10} \text{DSIN}_{j,t} \quad (2) \\
& + \sum_{i=1}^4 \delta_i \text{DSize}_{i,j,t} + \sum_{i=1}^5 \eta_i \text{DSector}_{i,j,t} + \sum_{i=1}^5 \lambda_i \text{DYear}_{i,j,t} + \varepsilon_{i,t}
\end{aligned}$$

To control for endogeneity due to the reverse causality from the cost of capital to CSP, the parameters in model (2) are estimated by using two-stage least squares regressions in which the lagged one-year CSP variable ( $\text{CSP}_{j,t-1}$ ) and Amihud's (2002) ILLIQ are used as instruments. [7] The observed period is 2008–2013, as the one-year lagged variable is used.

By considering the correlations among the control variables, this study runs four cases (Models 1 to 4). Table 3 presents the estimated results of the four regression models for the full observation period of 2008–2013. On the cost of equity in Panel A, CSP has a negative coefficient in Model 1; however, the coefficient becomes positive in Model 2 with the size, sector, and year dummies. Moreover, CSP has a negative correlation with the cost of equity but is effected by firm size, sector, and year.

Model 3 incorporates two cross-terms,  $\text{BankD} \times \text{CSP}$  and  $\text{InstCon} \times \text{CSP}$ , and Model 4 is the full regression model with all the control variables. In both cases, the coefficients of the two cross-terms are significantly negative and the coefficients of  $\text{InstCon} \times \text{CSP}$  are remarkably large. Hence, institutional ownership has strongly negative influences on the cost of equity through its effect on enhancing CSP. Bank dependency also has a negative influence on the cost of equity, although the effect is much less than that for institutional ownership.

This finding suggests that an increase in institutional ownership lowers the cost of equity by enhancing transparency, while bank dependency may be perceived as providing information on the quality of firms for investors in the equity market. Indeed, the effect of institutional ownership on the relation between CSP and the cost of equity is so strong that the observed positive effect of CSP on equity finance can be mitigated. Thus, Hypothesis 1 is not strongly supported but Hypotheses 1a and 1b are supported overall.

In addition, the firm characteristics offer some interesting results. First, the coefficient of  $\text{EBITTA}$  is significantly negative, while that of  $\text{NWCTA}$  is significantly positive. Investors are concerned about long-term profitability but they perceive that short-term liquidity is linked to risk. The positive coefficients of  $\text{DER}$ ,  $\text{B/M}$ , and  $\text{DSIN}$  and the negative coefficient of  $\text{DD}$  are all expected. It is interesting that sin businesses are perceived as risky in the equity market.

[Table 3 around here]

On the cost of debt in Panel B, the coefficients of CSP are positive in Models 1 and 2, although the estimate in Model 1 is not statistically significant. When  $\text{BankD} \times \text{CSP}$  and  $\text{InstCon} \times \text{CSP}$  are incorporated into Models 3 and 4, the coefficients of CSP become negative but statistically insignificant. Concerning  $\text{BankD} \times \text{CSP}$  and  $\text{InstCon} \times \text{CSP}$ , the coefficients are all positive but only the estimates of  $\text{BankD} \times \text{CSP}$  are

statistically significant. These results suggest that CSR is perceived as cost-spending rather than risk-reducing by debtors and that institutional ownership does not significantly influence the CSP–cost of debt relation. Internal liquidity (*NWCTA*) shows a strong negative relation with the cost of debt, while profitability (*EBITTA*) has no significant influence. These results contrast sharply with those for the cost of equity, suggesting that firms with insufficient internal liquidity must depend on bank borrowing, even if they have to bear the high cost of debt.

Thus, Hypotheses 2, 2a, and 2b are rejected. For the debtors of the Japanese firms in the observed period, the risk reduction hypothesis of CSR is therefore not supported as a whole. Among the firm characteristic variables, the sin industry dummy is significantly negative, which also sharply contrasts with the result for the cost of equity.

The integrated effect of CSP on WACC in Panel C shows a significantly negative association with the cost of external financing in Model 1 and Model 2, although the significance level is not high in Model 2. In Model 3 and Model 4, the coefficients of CSP are significantly positive. Hypothesis 3 is thus rejected. However, institutional ownership has a significantly negative influence on the CSP–cost of capital relation. These facts suggest that increasing institutional ownership decreases WACC by enhancing CSP. Among the firm characteristics, the coefficients of profitability (*EBITTA*) and the sin industry dummy are positive. The positive link between the sin dummy and the cost of equity is consistent with the empirical result for US firms presented by Hong and Kacperczyk (2009).

Therefore, institutional ownership can mitigate information asymmetry and be linked to the decreasing cost of equity in the equity market by enhancing the CSP of investee companies. On the contrary, bank dependency still seems to be a determinant of access to external finance for companies that may face more frictions in the financial market and have to bear the high cost of debt.

#### **4.6 Regressions for the sub-periods**

The behavior of both banks and investors is influenced by macroeconomic conditions. The observed sample period (2008–2013) includes the global financial crisis and its aftermath. Considering the changes in business and financial circumstances during this time, the period is divided into two sub-periods: 2008–2010 and 2011–2013. The former includes the financial crisis and the following stagnant economy and the latter includes the recovery of the financial system.

Regressions for CSP on the cost of equity and cost of debt are run for these sub-periods. The estimated coefficients are summarized in Table 4 Panel A (2007–2010) and Panel B (2011–2013). Concerning the cost of equity, both *BankD*×*CSP* and *InstCon*×*CSP* have significantly negative relations for both sub-periods. These results are consistent with those for the full study period in Table 3. By contrast, the cost of debt has significantly positive relations with *BankD*×*CSP* for the former sub-period, while it has no significance for the latter period. This finding suggests that the cost-increasing effect of CSP on debt lowered after the global financial crisis, suggesting that debtors are more aware of CSP when estimating risk. Comprehensively, the association between CSP and WACC turns significantly negative in Model 1 and Model 2, although the effects of both cross-terms on the cost of capital weaken.

[Table 4 around here]

## 5. Implications and discussion

These empirical results provide evidence that institutional ownership reduces the cost of equity by enhancing CSP and mitigating information asymmetry in the capital market, while CSP has no information for debtors. These findings imply a conflict of interests between debtors and equity owners in terms of the CSR practices of Japanese firms under financial globalization. When comparing the regression results for the two sub-periods, the positive effect of the relation between CSP and bank dependency on the cost of debt seems to decline. Thus, Japanese banks seemingly become more aware of CSP with the gradual resolution of conventional relationship lending and the emerging influence of institutional ownership on corporate financing. For large and high CSP firms, external financing may thus be more flexible.

The presented finding about the cost of equity is consistent with those for US firms presented by Sharfman and Fernando (2008) and El Ghouli et al. (2011), although there is insufficient evidence that higher CSP is related to lower agency costs. Nevertheless, this paper presents strong evidence that institutional ownership has a negative effect on the cost of equity by using CSP as crucial information. On the influence of CSP on bank borrowing, this result does not concur with the findings of Goss and Roberts (2011) on the bank borrowing of US firms, or with those of Ge and Liu (2015), Gong et al. (2016), and Ye and Zhang (2011) on Chinese corporate debts. The presented finding is instead consistent with the results of Menz (2010) for European corporate debt. Concerning the influence of institutional ownership on borrowing costs, no significant result is found, although Roberts and Yuan (2010) find a negative relation between them by using data on US firms.

The insufficient result of the negative link between CSP and the cost of equity in the context of Japanese firms could be explained as follows. First, for the observed period, the capital market does not function actively under the continuing low-interest financial policy after the economic stagnancy at the end of the 1980s. In the late 2000s, the globalization of ownership structure and resolution of the cross-shareholding of Japanese companies heralded financial reform that aimed to activate capital markets, and this continues to be the case. Second, related non-financial disclosure is a key determinant of corporate value among institutional investors; however, awareness of non-financial information by companies is insufficient. Third, the corporate debt market is relatively narrow and undiversified in Japan compared with the US/UK markets. The low function of the corporate debt market may contribute to the CSP insensitiveness of some companies. Fourth, the bank relationship remains a determinant of access to external financing for small and emerging companies that face financial frictions. Financing from the financial market is either not available or prohibitively expensive for small and emerging companies in Japan, whereas external financing is more flexible for large or high-performing companies. These findings reveal the extent of the corporate finance problems confronting the Japanese financial system.

This study contributes to extending the perspective of CSR and corporate finance under changing institutional circumstances and the rising awareness of market participants. It also sheds light on the

conflicts and complementarity between equity and debt in the asymmetric information context. Since the 2000s, numerous empirical studies have examined the differences in the concepts and practices of CSR in national settings as well as the cross-cultural differences in stakeholder orientation towards CSR (e.g., Brammer et al., 2006; Scholtens and Dam, 2007; Matten and Moon, 2008). This study therefore provides a cross-country comparison of strategic CSR and corporate financing in different corporate surroundings.

## 6. Conclusion and future research

This study explores how CSP affects the cost of capital, explicitly considering the influences of relationship banking and ownership structure on CSP when shifting from a bank-centered financial system to a more market-based system. It finds insufficient evidence of a negative link between the level of CSP and the cost of equity; however, institutional ownership has a strongly negative influence on the cost of equity by enhancing CSP. This finding implies that institutional investors perceive CSR as non-financial information that can be used to reduce agency costs in equity financing. On the contrary, this study finds that the cross-effect of CSP and bank dependency on the cost of debt is positive, which implies that debtors perceive CSR activities as cost-spending but not information-providing. Overall, the institutional ownership–CSP relation reduces WACC, implying that a changing ownership structure is influencing the market to reward CSR-related disclosure in Japan.

The presented results add to the body of evidence that CSP has informational value for investors in the equity market, whereas debtors are still indifferent to CSP. This study reveals the role of institutional investors as key players disciplining corporate management in the capital market by pressing the non-financial disclosure of investee companies. Further, it confirms the conflicts related to CSR awareness between institutional investors and banks in the transitioning Japanese financial system. This study suggests that an extension to future research on CSP and the cost of capital would be to elaborate on the types of companies based on the degree of financial frictions they face. In particular, future research could investigate CSR strategies and non-financial disclosure that aim to reduce the cost of capital for different types of companies and may provide insight into the institutional reform of the financial market.

The presented work has some limitations related to the methodology and data that suggest future research directions. First, in the selection of the proxies for the cost of capital, this study employed two estimates of the cost of equity based on the Fama–French three-factor model and accounting-based metrics of the cost of debt. Using the implied cost of equity would thus be an interesting extension of this research. Second, regarding the cost of debt, market-based measures should also be explored for Japanese firms. Lastly, the firm data were limited to relatively large and established listed firms because of the availability of CSR data. Sample firms should thus be extended to identify different CSR behavior between low-quality and high-quality firms from a broader view.

## Notes

[1] For example, Japan's cherished loyalty system was part of the problem (<http://www.economist.com/node/21541039>). Stewart and Yermo (2010) also criticize the insufficiency of



the disclosure of Japanese companies from an international investors' point of view.

[2] Much research addresses the features of the corporate governance of Japanese firms based on the prevailing relationship-oriented system and their insufficient disclosure (e.g., Hoshi and Kashyap, 2001; Aoki et al., 2007). Practically, corporate governance reform started in the 2000s. The TSE required listed companies to disclose their Corporate Governance Reports in 2006. A large number of listed firms have since published CSR reports. More recently, Stewardship Codes for institutional investors in 2015 and Corporate Governance Codes for listed firms in 2016 have been implemented.

[3] During the long deterioration of the Japanese banking sector in the 1990s after the stock market bubble burst at the end of the 1980s and following the economic stagnation, troubled banks faced incentives to continue providing additional credit to the weakest firms in order to improve the bank's balance sheet (Peek and Rosengren, 2005). In this situation, access to debt financing by Japanese firms was strongly affected by their relationship with banks (Arikawa and Miyajima, 2005; Peek and Rosengren, 2005; Caballero et al., 2008). Foreign investors disproportionately invested in large and good performing firms before the 1990s (Kang and Stulz, 1997) and preferred firms with a good corporate governance structure in the 1990s (Miyajima and Nitta, 2011). In the 2000s, banks selected high-quality borrowers and preferred short-term loan contracts, while foreign investors preferred high CSP firms and encouraged CSR by Japanese firms (Suto and Takehara, 2014).

[4] The original database consists of three parts: employee relations (Part I), an overall survey-related CSR (Part II), and environmental preservation (Part III). By subdividing Part II into three distinct CSR dimensions, which correspond to the stakeholder relations chosen, this study selected questions related to each of the dimensions, converted the quantitative data (e.g., proportion of female employees) into three- or four-level categorical data, and made within-sector adjustments. For each of the five CSP attributes, this study used a principal component analysis to construct the CSP dimensional indices: employee relations (EMP), social contributions (SC), the security of the firm and product safeness (SS), internal governance and risk management (IG), and environmental preservation (ENV). It then integrated them into a composite CSP by using a statistical method. More detail is provided in Suto and Takehara (2016a).

[5] The average response rate to Toyo Keizai's CSR questionnaire survey for 2007 to 2013 was 29.7% (Suto and Takehara, 2016a, 2016b).

[6] The estimation method of the cost of equity using the conditional three-factor model in Fama and French (1997) is explained in Appendix 1.

[7] The standard errors are collected by using Petersen's (2009) cluster robust method.

## **Appendix 1. Estimation Method of the Cost of Capital**

### **(1) Cost of Equity**

This study computes the cost of equity of individual firms based on the conditional three-factor model proposed by Fama and French (1997). In the first step, it estimates the slope coefficients in the regression model (A1) by the time-series regression using the return from individual securities:

$$r_{it} - r_{ft} = \alpha_i + b_i(r_{Mt} - r_{ft}) + (s_{i1} + s_{i2} \ln MV_{it})SMB_t + (h_{i1} + h_{i2} \ln BM_{it})HML_t + \varepsilon_{it}, \quad t = 1, \dots, T. \quad (A1)$$

In (A1),  $r_{it}$ ,  $r_{ft}$ ,  $r_{Mt}$ ,  $\ln MV_{it}$ , and  $\ln BM_{it}$  denote the return of security  $i$ , risk-free interest rate, return from value-weighted market index, natural logarithm of the market value of equity, and natural logarithm of the book-to-market ratio in period  $t$ , respectively. Then, let  $\lambda_M$ ,  $\lambda_S$ , and  $\lambda_H$  denote the market, SMB, and HML risk premium. At the end of September of each year, the cost of equity of firm  $i$  is defined as

$$r_{Ei} = r_{LGB,t} + b_i \lambda_M + (s_{i1} + s_{i2} \ln MV_{it}) \lambda_S + (h_{i1} + h_{i2} \ln BM_{it}) \lambda_H, \quad (A2)$$

where  $r_{LGB,t}$  denotes the 10-year Japanese government bond yield. This study sets  $(\lambda_M, \lambda_S, \lambda_H) = (4\%, 1\%, 6.5\%)$ , which are the log-term (from 09/1977 to 12/2015) average of annualized returns of the Fama–French three factors in Japan.

## (2) Cost of Debt

Cost of debt,  $r_D$ , is defined as follows:

$$r_D = \frac{\text{Interest Expenses} + \text{Discount on Notes}}{\text{Interest Bearing Debt}} \quad (A3)$$

where

$$\begin{aligned} \text{Interest Bearing Debt} = & \text{Short - Term Loans Payable} + \text{Current Portion of Corporate Bonds} \\ & + \text{Long - Term Loans Payable} + \text{Bonds Payable} + \text{Convertible Bonds} \\ & + \text{Deposits Received from Employees.} \end{aligned}$$

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**Table 1. Number of Sector-Year Observations**

The sample period is the seven years from 2007 to 2013. The total number of firm-year observations is 3,556. %TSE denotes the percentage of sample firms listed on the first section of the TSE.

	2007	2008	2009	2010	2011	2012	2013	Total	%TSE1
Consumption Goods	139	137	128	134	135	136	146	955	86.18
Investment Goods	217	233	235	236	230	229	241	1,621	84.64
Services	82	82	82	83	80	83	90	582	71.31
Transportation	17	17	16	17	20	21	24	132	87.88
Utility	10	11	11	13	11	11	11	78	100.00
RealEstate	16	18	11	12	11	12	13	93	78.49
All Sectors	481	498	483	495	487	492	525	3,461	83.13
Lagged one-year CSP is not available	---	-88	-58	-49	-20	-21	-64		
#Observations used in the regression	---	410	425	446	467	471	461	2,680	
#observations in sub-periods	---	1,281		1,399					

**Table 2. Descriptive Statistics and Correlation Matrix**

CSP: Composite measure of CSP, CostE: Cost of equity estimated by the conditional version of Fama and French's (1997) three-factor model, CostD: Cost of debt, WACC: Weighted average cost of capital defined in (2), BankD: Bank dependency, InstCon: Concentration of ownership in institutional investors, DER: Debt-to-equity ratio, EBITTA: Earnings before interest and tax to total assets, NWCTA: Net working capital to total assets, lnMV: Natural logarithm of the market value of equity (in million JPY), B/M: Book-to-market ratio, SLSG: Growth rate of sales (in %), DD: Distance to default.

Panel A. Descriptive Statistics

	Mean	S.D.	1st Qu.	Median	3rd Qu.
CSP	0.477	1.624	-0.718	0.690	1.822
CostE	9.058	3.633	6.541	8.853	11.366
CostD	1.442	1.097	0.820	1.148	1.708
WACC	6.058	2.398	4.282	5.908	7.677
BankD	0.588	0.275	0.433	0.604	0.786
InstCon	0.679	0.167	0.582	0.714	0.806
DER	1.747	6.692	0.656	1.239	2.257
EBITTA	0.046	0.046	0.024	0.043	0.068
NWCTA	0.151	0.123	0.070	0.148	0.220
lnMV	10.898	1.805	9.575	10.817	12.235
B/M	1.184	0.750	0.672	1.012	1.492
SLSG	0.939	15.773	-5.663	1.158	7.126
DD	3.076	2.214	1.656	2.739	4.052

Panel B. Pearson Correlation Matrix

	CSP	CostE	CostD	WACC	BankD	InstCon	DER	EBITTA	NWCTA	lnMV	B/M	SLSG	DD
CSP	1.000	-0.130	0.019	-0.094	0.027	0.420	-0.008	0.105	-0.026	0.596	-0.347	-0.017	0.069
CostE		1.000	-0.008	0.604	0.005	-0.143	0.064	-0.288	0.085	-0.268	0.327	-0.084	-0.406
CostD			1.000	0.146	0.219	-0.005	0.029	-0.041	-0.030	-0.062	0.037	-0.022	-0.048
WACC				1.000	-0.020	-0.024	-0.063	-0.002	0.096	-0.164	0.174	-0.016	-0.050
BankD					1.000	-0.021	0.002	-0.072	0.132	-0.064	0.058	0.005	-0.089
InstCon						1.000	-0.072	0.265	-0.008	0.575	-0.316	0.061	0.037
DER							1.000	-0.081	-0.051	0.002	-0.032	-0.011	-0.084
EBITTA								1.000	-0.048	0.304	-0.317	0.336	0.362
NWCTA									1.000	-0.168	0.133	0.006	-0.116
lnMV										1.000	-0.599	0.080	0.248
B/M											1.000	-0.101	-0.263
SLSG												1.000	0.120
DD													1.000



**Table 3. Results of the Regression Analyses**

CSP: Composite measure of CSP, CostE: Cost of equity estimated by the conditional version of Fama and French's (1997) three-factor model, CostD: Cost of debt, WACC: Weighted average cost of capital defined in (2), BankD: Bank dependency, InstCon: Concentration of ownership in institutional investors, DER: Debt-to-equity ratio, EBITTA: Earnings before interest and tax to total assets, NWCTA: Net working capital to total assets, B/M: Book-to-market ratio, SLSG: Growth rate of sales (in %), DD: Distance to default, DSIN: Dummy variable that takes 1 if the firm is in a sin industry. Number of firm-year observations is 2,680.

$$r_{j,t} = \alpha + (\beta_1 + \beta_2 BankD_{j,t} + \beta_3 InstCon_{j,t})CSP_{j,t} + \beta_4 DER_{j,t} + \beta_5 EBITTA_{j,t} + \beta_6 NWCTA_{j,t} + \beta_7 BM_{j,t} + \beta_8 SLSG_{j,t} + \beta_9 DD_{j,t} + \beta_{10} DSIN_{j,t} + \sum_{i=1}^4 \delta_i DSize_{i,j,t} + \sum_{i=1}^5 \eta_i DSector_{i,j,t} + \sum_{i=1}^5 \lambda_i DYear_{i,j,t} + \varepsilon_{i,t}$$

Panel A. Cost of Equity

	Model 1		Model 2		Model 3		Model 4	
	Coef.	p-value	Coef.	p-value	Coef.	p-value	Coef.	p-value
Intercept	9.377	0.000	5.665	0.000	6.564	1.7786363	8.387	0.000
CSP	-0.337	0.000	0.189	0.000	2.730	0.000	2.630	0.000
CSP×BankD					-0.700	0.000	-0.484	0.001
CSP×InstCon					-3.169	0.000	-3.375	0.000
DER							0.014	0.028
EBITTA							-6.970	0.003
NWCTA							0.814	0.005
B/M							0.977	0.000
SLSG							0.001	0.926
DD							-0.544	0.000
DSIN							0.490	0.058
Size Dummy	No		Yes		Yes		Yes	
Sector Dummy	No		Yes		Yes		Yes	
Year Dummy	No		Yes		Yes		Yes	
Adjusted R <sup>2</sup>	0.021		0.178		0.198		0.338	

## Panel B. Cost of Debt

	Model 1		Model 2		Model 3		Model 4	
	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value
Intercept	1.402	0.000	1.440	0.000	1.424	0.000	1.628	0.000
CSP	0.011	0.206	0.066	0.000	-0.034	0.858	-0.048	0.806
CSP×BankD					0.177	0.007	0.191	0.003
CSP×InstCon					0.002	0.994	0.001	0.997
DER							0.004	0.099
EBITTA							-0.530	0.542
NWCTA							-0.692	0.000
B/M							0.071	0.056
SLSG							-0.003	0.182
DD							-0.021	0.030
DSIN							-0.570	0.000
Size Dummy	No		Yes		Yes		Yes	
Sector Dummy	No		Yes		Yes		Yes	
Year Dummy	No		Yes		Yes		Yes	
Adjusted $R^2$	0.000		0.028		0.033		0.044	

## Panel C. WACC

	Model 1		Model 2		Model 3		Model 4	
	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value
Intercept	6.089	0.000	5.272	0.000	5.481	0.000	4.782	0.000
CSP	-0.162	0.000	-0.036	0.120	0.556	0.099	0.710	0.032
CSP×BankD					0.042	0.718	0.003	0.977
CSP×InstCon					-0.890	0.023	-1.053	0.005
DER							-0.012	0.468
EBITTA							3.311	0.019
NWCTA							0.374	0.312
B/M							0.637	0.000
SLSG							-0.008	0.240
DD							0.027	0.402
DSIN							0.764	0.003
Size Dummy	No		Yes		Yes		Yes	
Sector Dummy	No		Yes		Yes		Yes	
Year Dummy	No		Yes		Yes		Yes	
Adjusted $R^2$	0.011		0.098		0.098		0.123	

**Table 4. Sub-period Results**

Panel A. Sample Period: 2008–2010

	Model 1		Model 2		Model 3		Model 4	
Cost of Equity	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value
CSP	-0.345	0.000	0.227	0.000	2.859	0.000	2.783	0.000
CSP×BankD					-0.618	0.004	-0.356	0.064
CSP×InstCon					-3.375	0.000	-3.640	0.000
(Adjusted $R^2$ )	0.023		0.199		0.216		0.348	
Cost of Debt	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value
CSP	0.023	0.028	0.082	0.000	-0.188	0.381	-0.185	0.428
CSP×BankD					0.238	0.000	0.246	0.000
CSP×InstCon					0.209	0.495	0.196	0.540
(Adjusted $R^2$ )	0.001		0.022		0.029		0.039	
WACC	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value
CSP	-0.135	0.000	-0.018	0.672	0.747	0.000	0.939	0.000
CSP×BankD					-0.024	0.401	-0.082	0.005
CSP×InstCon					-1.092	0.000	-1.280	0.000
(Adjusted $R^2$ )	0.009		0.093		0.085		0.115	

Panel B. Sample Period: 2011–2013

	Model 1		Model 2		Model 3		Model 4	
Cost of Equity	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value
CSP	-0.327	0.000	0.153	0.009	2.636	0.002	2.495	0.001
CSP×BankD					-0.802	0.000	-0.648	0.000
CSP×InstCon					-2.995	0.003	-3.116	0.002
(Adjusted $R^2$ )	0.018		0.168		0.189		0.332	
Cost of Debt	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value
CSP	-0.001	0.865	0.052	0.025	0.166	0.596	0.153	0.600
CSP×BankD					0.098	0.437	0.114	0.335
CSP×InstCon					-0.253	0.446	-0.259	0.407
(Adjusted $R^2$ )	-0.001		0.015		0.017		0.030	
WACC	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value
CSP	-0.184	0.000	-0.051	0.077	0.414	0.588	0.473	0.530
CSP×BankD					0.088	0.742	0.055	0.833
CSP×InstCon					-0.741	0.399	-0.795	0.354
(Adjusted $R^2$ )	0.012		0.098		0.101		0.125	