

Drivers of Firm-idiosyncratic Resource Value: Independent Directors and Corporate Social Responsibility

Dr. Hien T. Tran*
Prof. Gerhard Kling

* Corresponding author: Dr Hien T. Tran, email: hientran@ftu.edu.vn

ABSTRACT

This study proposes and tests a model of how and why independent directors using CSR affect firm resource value after the firms make decision of acquiring or building it (ex post). The proposed model was built on Schmidt and Keil's (2013) theory of conditions and mechanisms that make resources valuable to a firm before making decision (ex ante). Data from 545 large companies in 20 countries supports the proposed model. The direct effect of independent directors alone on resource value captured on product market ex post is statistically insignificant; however, the synergic effect of independent directors using CSR disclosure ex post on value creation becomes significantly positive. The model may reveal the underlying mechanism that firm-idiosyncratic value is created from combining the resources of independent directors and stakeholders. This study confirms Schmidt and Keil's (2013) theoretical model, suggesting the link among the social network theory, the resource dependence theory and the agency theory in the global context. The study offers the insight that value captured on product market partially sourced from the joint effect of the resources of independent directors and stakeholders.

Key words

Independent Directors, Corporate Social Responsibility, Resource, Value Creation, Value Capture, Fortune

INTRODUCTION

Schmidt and Keil (2013) developed a theoretical model identifying the conditions and mechanisms that make resources valuable to a firm ex ante, i.e. before a decision on acquiring or building it is made. They define resource value is determined by the expected incremental payment from the product market. Their model is based on four factors including the firm's expected market position, its resource base allowing for complementarities, its position in inter-organisational networks giving access to relevant information, and managers' knowledge and experience allowing judgement about how to use the resource to its best value-creating potential. Being built on Schmidt and Keil's (2013) function of the drivers of firm-idiosyncratic resource value, this study proposes a model of the value added to profitability sourced from independent directors using CSR disclosure. Based on this proposed model, the study examines whether the resource of independent directors in combination with networks of stakeholders realistically contributes to value creation and capture of the value in product market.

It is assumed that there is a transformation from the social value of independent directors and their stakeholder networks through the use of CSR to value capture measured by profitability. The research question is *how and why independent directors using CSR is likely to result to increased value*. This question was addressed by drawing on the social network theory (Powell, 1990), resource dependence theory (Pfeffer and Salancik, 1978) and agency theory (Jensen and Meckling, 1976). Underpinned by these theories and the Schmidt and Keil's (2013) function, the study proposes that independent directors use CSR disclosure in their networks to win stakeholders' good will. Giving the firm access to privileged information, this goodwill is transformed into profitability.

To the best of our knowledge, this is the first study that tests Schmidt and Keil's (2013) theory using world-wide empirical data and an international perspective. Based on our findings, we propose the idea of a linkage among the social network theory, resource dependence theory and agency theory in the global context. This logic is evidenced by the empirical link between independent directors using CSR disclosure and profitability that supports Schmidt and Keil's (2013) theory. The study offers the global-level knowledge that social value can generate financial value if goodwill is gained from the networks by independent directors using CSR. This insight might be an input for decision making on the business models that promote enlightened value maximization (Jensen, 2001).

The following section presents the literature review that underpins the two hypotheses on the synergic influence of independent directors combined with CSR on value creation. Next, we describe the research methodology followed by the regression results. The last section discusses the implications, highlights the contributions and limitations of this study and suggests future research areas.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

While the question of the effect of independent directors on performance is a popular research topic, empirical results have varied substantially across studies (Dalton *et al.*, 1998; Dalton *et al.*, 1999). The overall conclusion of the many empirical studies is still that there is no clear relationship between independent directors and firm performance (Hermalin and Weisbach, 2003). There is no significant difference between high-performing companies and low-performing companies in terms of the number of outside directors. The key to making boards work better rests in the board process (Finkelstein and Mooney, 2003) rather than board composition.

The literature on boards of directors generally classify directors' roles into three categories: monitoring the management (control task); providing advice and counsel to the management (service task); and providing resources from the external environment (resource dependence task). However, the role of resource provision by independent directors has been inadequately studied (Kim and Cannella, 2008). Johanson and Ostergren (2010) suggest that any global theories related to independent directors should integrate social connectedness in corporate network.

Social Network Theory: the Social Capital of Independent Directors and Stakeholders

The social network theory (Powell, 1990) is the perspective gathering new insights into the mechanism that independent directors affect firm performance. The centre in this mechanism is the social capital and the network. Network constitutes a "distinct form of coordinating economic activity" (Powell, 1990), which contrasts (and competes) with markets and hierarchies (Hart, 1995; Jones *et al.*, 1997; Williamson, 1998).

Social capital is defined as the goodwill available to individuals and groups and is sourced from the social relations among the actors of the social networks (Adler and Kwon, 2002), thus being a resource. Earlier, Burt (1992) defined social capital as relationships with others through whom opportunities to use financial and human capital are received. Two features of social relations that give rise to social capital are the opportunities provided by the network structure of those relations and the ability at each of the nodes of this network that can be mobilized by such goodwill (Kwon and Adler, 2014).

Kim and Cannella (2008) define social capital of a director as the interpersonal linkages that the director has to others, both inside and outside the firm (i.e. internal and external social capital). At group level, board social capital is an asset that includes both relations of directors and potential resources arising from the relations. Their concept of social capital includes not only social networks but also the content of social relations such as trust, liking, obligation and respect, as well as the outcomes from social relations such as information and influence. Haynes and Hillman (2010) have the same viewpoint that board social capital is the resources residing in social networks including the individual director's personal ties that benefit the board.

Social capital is developed through the social networks that directors create over time (Hillman and Dalziel, 2003). Directors are subject to the normative pressure of maintaining access to social networks and are likely to enjoy the benefits of the resulting board social capital (Sauerwald *et al.*, 2014). Board-level social capital is positively associated with board effectiveness (Kim and Cannella, 2008) since external social capital provides companies with links to the external stakeholders through whom the firm can gain information, resources and legitimacy. These arguments are in favour of independent directors with specific types of social capital adding idiosyncratic value to the board, hence more chance of creating value for firms.

Resource Dependence Theory: Independent Directors and External Stakeholders - the Combined Resources Valuable to Firms

Resource dependent theory (Pfeffer and Salancik, 1978) suggests that superior firm performance is attributable to endowment with superior resources which is valuable, rare and difficult for other firms to replicate or substitute. In the resource-based view, the resource underlying competitive advantages need to be valuable (Barney, 1991). Yet, resources deployed by firms are only valuable to the extent that customers value a firm's products and services (Sirmon *et al.*, 2007) because of uncertainty in which future impact of a resource may not be known and the resource value becomes subjective (Kraaijenbrink *et al.*, 2010). This leaves a gap in the resource-based literature, between the supply side and the demand side. The gap has been filled by Schmidt and Keil's (2013) function identifying conditions and mechanisms that make resources valuable to a firm before a decision on acquiring or building it is made. Defining resource value as willingness to pay for or invest in a resource, Schmidt and Keil (2013) measure resource value as a function of both internal factors (the firm's resource base that allows for complementariness and its managers' characteristics) and external ones (the firm's expected market position on which customers' valuing the firm's products and the firm's position in inter-organisational network giving access to information).

Schmidt and Keil (2013) strengthen the theoretical validity of resource-based view by developing the new theory identifying the *ex ante* conditions under which firms attribute value to a resource. Their theory proposes that the more central the position of a firm in the network of stakeholders, such as customers, suppliers and alliance partners, the better the firm can act as broker by bridging structural holes in the network of those stakeholders. Also the more diverse the relationship of the firm to its customers, suppliers and alliance partners, the better it can assess information; subsequently, their customers are more willing to pay for the firm's resources.

On the other hand, the stakeholder synergy perspective (Tantalo and Priem, 2014) offers further insights into realizing synergic value creation. This is obtainable because multiple potential resources of value creation co-exist within each potential stakeholder group. Resource value is driven by product market value, which partially means that the measure to stimulate demand and increase willingness-to-pay for the firm's output contributes to higher resource value. Thus, how customers perceive value and how firms can boost customers' willingness to pay are among the key contributors to value capture (Priem, 2007).

Resource dependent theory suggests that independent directors are an important source that increases the social capital of the board. Board capital as the sum of individual director's human and social capital, can be used to provide resources for aiding in the formulation and implementation of firm strategy and monitoring (Hillman and Dalziel, 2003). This links a firm to its external environment and can foster access to critical information and valuable resources that help reduce uncertainty for strategic actions (Haynes and Hillman, 2010). Board social capital refers to directors' ability to access resources through relationships. In the resource-based view, independent directors are one means of forming corporate linkages with the external environment that enables an organisation to gain resources.

Directors may accumulate private social capital by strategically positioning themselves as brokers in social networks, creating ties to elite institutions (Burt, 2005; Galunic *et al.*, 2012). Directors also

benefit from membership in their social network, the public form of social capital. Social network and commonality of background appear to affect director appointments and dynamics of the board (Ferreira, 2015). Thus, directors will not risk ignoring the normative pressures of fellow directors because this behaviour may result in the loss of social capital (Westphal and Khanna, 2003). The social networks, externally through stakeholders and internally through independent directors, are instructive for theoretical inquiry into the effectiveness of independent directors.

A company depends on resources which originate from a company's environment; resource dependence theorists underpin the argument that independent directors' resources are transferred into value. Schmidt and Keil's (2013) framework is the basis for empirical tests of the resource-based view in independent directors-using-CSR models. The pressures of conforming to global best practices, adhering to social norms and disclosing CSR information when there is environmental uncertainty are the antecedents of engaging with stakeholders to maintain the social networks. Thanks to those, social capital is accumulated which is converted into willing-to-pay to maximize profit. The following hypothesis is therefore formulated.

H1: The resources that gain from independent directors building their networks through CSR disclosure are likely to result in increased value creation captured on product market.

Testing this hypothesis is of importance. Luan and Tang (2007) find independent directors have a significant positive impact on ROE in Taiwan, but not significant in the outperforming firms due to their absorptive capacity. Peng (2004) suggests that independent directors have little impact on ROE during institutional transition in China. Bhagat and Black's (1999) survey of boards of American public companies that have a majority of independent directors reveals the uncertain relationship between board composition and firm value. They find the evidence that firms with supermajority-independent boards are even less profitable than other firms. The result of a meta-analysis conducted by Rhoades *et al.* (2000) indicates that both insider and outsider dominated boards had a small positive impact on financial performance. Overall, the literature on the effectiveness of independent directors to a firm remains inconclusive.

Agency Theory: Independent Directors Pursuit their Self-interests

Independent directors (outside or external directors) of a firm have been loosely defined as people who have never been previously employed by that firm (Dore, 2005). On principle, independent directors are paid to serve as external monitors to and advisors for management; however, their self-interest might be paramount to building their own prestige and increasing their employability (Acharya and Pollock, 2013) whilst enjoying company remuneration. Independent directors, like any agents in principle-agent relationship (Jensen and Meckling, 1976), might prioritize their self-interests rather than making efforts to increase shareholders' wealth. Independent directors can gain their reputation and individual social capital from networking with stakeholders; they might advise CEOs to use low CSR but high CSR disclosure as CSR activities can be costly to firms or advise CEOs to use high CSR and high CSR disclosure, whichever works in their best interests.

Social capital is a determinant of director selection and board effectiveness in Kim and Cannella's (2008) framework. External social capital generates unique resources that are important to board effectiveness. This item of capital is positively associated with selection of independent directors because it indicates the candidates' ability to achieve effectiveness through links to the external environment. When firms search for a new board member, they consider a potential director's ability to access resources through relationships, which can be built by interlocking directorate ties and engaging stakeholders (Chen, 2014). Therefore, engagement with stakeholders could be one of the strategies that independent directors might use for their own benefits in terms of employability and effectiveness. Independent directors are likely to build their networks with stakeholders by exerting their influence on CSR disclosure for social capital gain.

The agency view and resource-based view are not mutually exclusive in judging independent directors using CSR. On the one hand, independent directors possibly advise CEOs to increase CSR disclosure,

thus winning goodwill of stakeholders and allowing the independent directors to accumulate social capital through networking with stakeholders. On the other hand, the combination of resources of independent directors and stakeholders is likely to make independent directors more effective to firm performance. Overall, according to the agency view, independent directors are opportunistic when exerting their influence on CSR. According to the resource-dependence view, independent directors using CSR might be beneficial to firms.

There is evidence that firms with a higher proportion of independent directors on the board are empirically associated with higher levels of voluntary disclosure (Cheng and Courtenay, 2006; Donnelly and Mulcahy, 2008). CSR disclosure is defined as the communication on the social and environmental impact resulting from organisations' economic actions on particular interest groups within society (Gray *et al.*, 1996). Companies seek to legitimise their existence to society by voluntarily disclosing social and environmental information within socially constructed systems of norms, values, beliefs and definitions (Owen, 2008). Companies are supposed to undertake activities that are compatible with social values, and to communicate that their activities are congruent with such values (Buhr, 1998). Even though disclosure and performance are two different concepts, quality of disclosure does matter as market interest in nonfinancial information has been on a rise during the past two decades (Eccles *et al.*, 2011).

Although independent directors are opportunistic agent of shareholders, they could use CSR disclosure to build and maintain their network with stakeholders, thus strengthening the firm's position in inter-organisational networks. This gives the firm access to privileged information and resources that increase willingness-to-pay of consumers (Schmidt and Keil, 2013). Since willingness-to-pay is transformed into value, the value will be added to firm profit, suggesting the following hypothesis.

H2: Independent directors pursue their self-interest by using CSR disclosure for networking so as to increase their own resource value.

The test for this hypothesis is important because the result adds further objective evidence for judging the effectiveness of independent directors. This is because there are plausible reasons for the concern on the effectiveness of independent directors in profit maximization (Gordon, 2007). Due to independent directors' lack of information, firms with a higher percentage of independent board members do not always perform better than the rest. The main concerns lie in independent director's capacity of scrutiny for making sound advice. In the absence of detailed information, independent directors may not be able to understand business well enough to make a meaningful contribution to improving financial performance (Ravina and Sapienza, 2010). Although the previous researchers claim that independent directors might be motivated by self-interest as they build reputation at the cost of shareholders and society (Raelin and Bondy, 2013), there is a need to have an impartial study of the effectiveness of directors' maintaining and improving CSR.

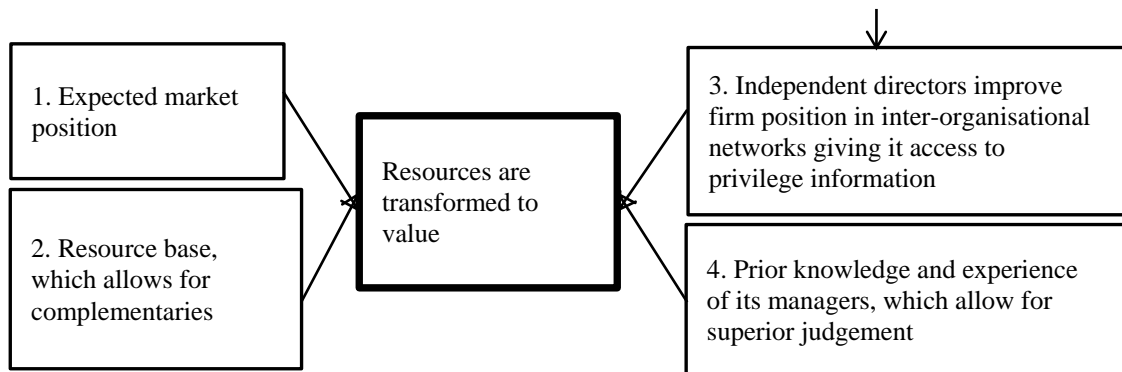
The Extended Model Built on Schmidt and Keil's (2013) Theory

Schmidt and Keil's (2013) theory demonstrates four factors identifying conditions that make resources valuable to a firm *ex ant*. They are (1) the firm's expected market position, (2) its *ex ant* resource base, which allows for complementariness, (3) its position in inter-organisational network, which gives it access to privileged information, and (4) the prior knowledge and experience of its managers, which allows for superior judgement concerning the value-creating potential of the resource.

Applying this theory, this study proposes a model of value creation due to the value added by a resource resulting from independent directors using CSR, illustrated in Figure 1.

Figure 1: The Extended Model Built on Schmidt and Keil's (2013) Theory of Conditions and Mechanisms that Resources Become Value





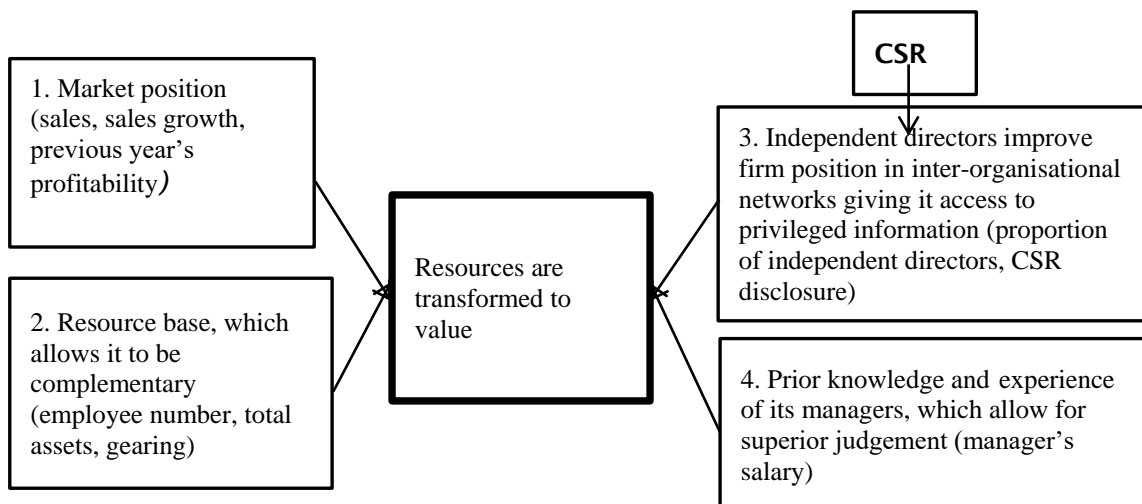
The key explanatory factor in the model is the impact of CSR strategy used by independent directors on a firm's position in the inter-organisational network, which gives the firm better access to privileged information. When firms have the resource's value based on proprietary information, the firms should be able to acquire profitability (Makadok and Barney, 2001). This factor is operationalised by the two complementary dimensions, CSR disclosure and independent director.

RESEARCH METHOD

The Proposed Theoretical Model of Value Creation after Firms Make Decisions of Acquiring or Building Resources

Underpinned by the previous literature, the proposed model in Figure 1 is deliberated in Figure 2 as followed. As resource value is determined by the expected incremental payment from the product market (Schmidt and Keil, 2013), value creation is measured by profitability.

Figure 2: The Proposed Model of Value Creation *ex post* Built on Schmidt and Keil's (2013) Theory of Conditions and Mechanisms that Resources Become Value for Empirical Tests



The Research Context and the Data

We collected the name of the firms appearing at least once in the Fortune World's Most Admired (FWMA) companies ranking results from 2006 to 2012. Although these results are released on Fortune website annually from early 2006 to early 2012, the rating is in fact conducted for the previous year, i.e. from 2005 to 2011. Data of CSR reputation and innovation reputation were manually collected from Fortune website. The annual 2005-2011 financial data, social disclose score, percentage of independent board members, number of employees, executive salary, industry and

country were collected from Bloomberg using the automated template sheet. After that, the companies that fall into the group of private, pending-to-be-published, inactive or delisted companies were excluded from the dataset. Finally, we omitted the firm-year observations which the data of the independent and control variables is missing. The final dataset has 1,817 firm-year observations of 545 companies in 171 industries in 20 countries. This is an unbalanced panel.

We chose the global context to test Schmidt and Keil's (2013) theory with the aim towards the development of global insight of corporate governance (Zattoni and Ees, 2012).

The period from 2005 to 2011 was chosen since the recent global recession spanned through these years in which 2008 was the most unprofitable year recorded by the companies in the dataset. In this year, the lowest mean and median of annual ROE were shown (10.77 and 14.58 respectively) compared to those of the rest of the observed years. Consequently, the hypothesis testing using data related to these observed years would reflect the time factor related to uncertainties - a difficult periods when firms were in the financial crisis. In addition to this reason, the fact that the data on social disclosure score started to be available in Bloomberg since 2005 onwards is the other reason for the choice of the studied period.

There are three main reasons for the selection of the FWMA firms for testing the hypothesis. Firstly, Fortune surveys were done on the global firms selected on the similar worldwide-applied criteria developed by the rating agency. FWMA ranking exercises are based on a large number of executives, directors and security analysts who rated the companies in their own industry for the selection of the ones they admired the most, in which CSR was considered as one of the key areas of leadership of a company in the relevant industry. The second reason is attributed to the reputation of the FWMA firms as previous studies suggest that firms providing more CSR information are larger and belong to high profile industries (Chan et al., 2013). It is also empirically evidenced that preserving the established reputation requires a firm to deliver consistent performance over time (Petkova et al., 2014). Thirdly, with the global reputation and total assets from over USD 1.4 billion to USD 2,600 billion in 2011, each of the firms in this study has had a profound impact on their global value chain and the world economy.

The Regression Specification

Based on the proposed theoretical model illustrated in Figure 2, the multivariate regression specification below was built to fit the data using a firm as the unit of analysis. Schmidt and Keil (2013) assume that there were perfect information, accurate expectation of future states by all firms, and that all firms were identical in their risk preferences. Given the difficulties in measuring these variables in a large sample and what constitute a relevant resource varies according to the firm and industry (King and Zeithaml, 2003), fixed-effects estimation method was applied to control unobservable time-invariant factors in the model. Furthermore, the study applies quantile regressions on different levels of profitability of the firms and the event approach using three subsets of the data, pre-crisis, at the peak of the crisis and during the recovery years after the peak of the crisis. The deployment of these methods enhances rigorousness for the empirical findings.

Dependent Variable

In this research project, corporate financial performance is judged upon profitability. Specifically in this study, the dependent variable, profitability, is measured by ROE following Flammer (2014) and Makni *et al.*(2009). In theory and practice, ROE has been commonly used to measure the profitability of firms. ROE is less susceptible to earning management compared to ROA (Prior *et al.*, 2008), and partially represents investors' evaluations of a firm's ability to generate future economic earnings rather than past performance (Mc Guire *et al.*, 1988).

Independent Variables

Independent Director

The percentage of independent directors, *indirector*, was used as the proxy for the participation of independent directors on boards. The literature loosely defined independent directors (outside or external directors) of a firm as the people who have never been previously employed by that firm (Dore, 2005) and who serve on the board of directors to do independent monitoring task and to be impartial advisors to CEO. This study is rested upon Bloomberg's definition of independent directors. This variable, *indirector*, is defined by the percentage of independent directors on board membership following Beasley (1996) and Rashid's (2014) study that employed the percentage of outside directors as the proxy for board independence.

Interactive variable = % of independent director * CSR disclosure

The interactive variable (*interact*) was formulated to measure the level that independent directors used CSR. CSR is proxied by Bloomberg social disclosure score (*CSR disclosure*). The score ranges from 0.1 for companies that disclosed a minimum amount of data to 100 for those that disclosed every data point. Each data point is weighted in terms of importance, with workforce data carrying greater weight than other social data. The score is also tailored to different industries. In this way, each company is only evaluated in terms of the data that is relevant to its industry sector. Bloomberg disclosure scores are not specific performance metric. They indicate the degree to which a company uses and reports non-financial information. See 2.4 for further information and the pro and con discussions of Bloomberg social disclosure score.

Control Variables

The factors (1), (2) and (4) are controlled in the model in accordance with the three factors of Schmidt and Keil's (2013) function. They are the firm's market position (1), its resource base, which allows it to be complementary (2), and the prior knowledge and experience of its managers, which allow for superior judgement concerning the value-creating potential of the resource (4).

For the firm's market position, total turnover (*sales*), sales growth (*salesgrow*) and lagged ROE (*l.value*) were used as the control variables. Schmidt and Keil (2013) denote market position of a firm as a function of its resource deployment decisions in previous periods, which affects both its costs and willingness to pay in a way that makes the firm unique, hence value creation. Value creation involves the factors that establishes or increases the consumer's valuation of the benefits of consumption (Priem, 2007); such intangible asset like reputation has an effect on firm performance (Lee and Roh, 2012). In addition, how customers perceive value, how value is created from using products and services (Vargo and Lusch, 2004; Vargo and Lusch, 2008) and how firms are able to boost customers' willingness to pay are the key contributors to firm performance (Priem, 2007). Market position is also characterised by level of sales, sales growth and ex ant profitability (Prior *et al.*, 2008; Ammann *et al.*, 2011). This explains why sales (*sales*), sales growth (*salesgrow*) and lagged ROE (*l.roe*) are controlled in the regression specification. Natural logarithm of turnover (*sales*) was obtained to reduce the effects of outliers in the distribution of this variable.

To control for a firm's resource base, which allows for complementariness, we used number of employees (*employee*), total assets (*assets*) and debt-to-equity ratio (*gearing*). Financial performance is likely subject to the size of the resource base; several aspects of its may influence corporate governance in a way that tempers the board's ability to effect change (Dalton *et al.*, 1999). Previous studies use total assets (Frye *et al.*, 2006; Lo and Sheu, 2007) and/or number of employees (Glavas and Piderit, 2009) to quantify the resource base. These studies indicate that the number of employees is negatively related to ROE, which is one of the accounting measures for the level of value capture on product market; likewise, total assets are negatively associated to ROE if the other relevant factors are controlled. Natural logarithm of total assets (*assets*) and employee number (*employee*) were obtained to reduce the effects of outliers in the distribution of those variables. Additionally, Collett and Hrasky's (2005) study examines the relationship between the voluntary disclosure of information and the intention to raise external finance; their regression analysis indicates that the voluntary disclosure is positively associated with the intention to raise equity capital, but not with the intention to raise debt capital. Ntim and Soobaroyen's (2013a) controlled for debt-to-equity ratio (*gearing*) in

their study on the determinants of voluntary disclosure. Thus, the capital structure of the firms is controlled in the model for the resource base of the firms. The debt-to-equity ratio is positively associated to ROE if the other related factors are constant.

We used executive salary (*salary*) to control the prior knowledge and experience of its managers that result in managerial judgements. Executive compensation strategies include short-term pay (salary and bonus) and long-term compensation (stock grants, options and other perks) (Mallin, 2010). Each of these elements has a different impact on executive incentive, which is supposed to be complementary to each other. In the labour market, employees have more information about their productive capacity than employers (Spense, 1973). Holding other motivational factors fixed, if firm owners decide to cut down managers' compensation, the most capable managers will probably be less incentivised, or even worse they may leave their jobs because they have more information about their productive capacity. The labour market fails in this case. On the principle of market signalling (Spense, 1973) in the labour market, potential managers are the signalers while owners (employers) are the signal receivers. In the labour market, hiring is an investment decision under uncertainty because candidate capacities are not known beforehand. Therefore, employers need to receive relevant signals to build trust to a critical level so that they can self-confirm their choices.

In Spense's (1973) theory, if an owner has perfect information, he will compensate the executive exactly at the corresponding level of the costs of performing the employment contract at the executive's expense. This is unfeasible because in reality the executive has more information about himself/herself than the others. Potential managers (agents) know much more than the employers (principals) about the level of the time, effort and opportunity costs of performing the contract. At the level of financial incentive, if the agent can choose to make more effort (a probability of q) or less effort (a probability of $1-q$) assuming that other factors are constant, he/she will choose to make less effort because there is no marginal financial encouragement whether or not he/she makes an effort in doing the job.

Spense (1973) states that information is efficient at the signalling equilibrium. He demonstrates that informational equilibrium in the market occurs at the point at which an employer's conditional probabilistic beliefs are confirmed to enable him to offer wage schedules and to make hiring decisions. Spense's (1973) signalling theory sets the frame of thought that executive salary stated in the employment contract signals the managerial prior knowledge and experience.

Following previous literature, firm reputation in CSR, innovation and quality of product and services, year effect (*yearD*), industry effect (*industryD*), and country effect (*countryD*) (Lattemann *et al.*, 2009; Menz, 2010; Ntim and Soobaroyen, 2013a) are also controlled in the model. Corporate reputation is defined as the accumulated impression that stakeholders have of the firm, resulting from their interactions with and communications received about the firm from a marketing perspective (Fombrun and Shanley, 1990). To control the effects of ex ante market position, reputation rating of CSR, innovation and quality of product and service were accounted in the model. Industry, year and country effects are controlled in the regressions since profitability might vary from industry to industry, from year to year and nation to nation. However, the industry dummies are technically excluded in the quantile specifications used for robustness analysis due to the shortage of the degrees of freedom in the lower quantile regressions if up to 171 industry dummies are estimated.

The coefficients of interest in the Equation 1 are β_1 and β_2 , which are both expected larger than 0 and small based on the previous studies such as Luan and Tang (2007) and Wang and Sarkis (2013). The variables of the Equation 1 are listed below, which include the variable name, the variable type and the expected sign of significance and the size of the parameters of the effect of each variable on the predicted response. *yearD*, *industryD* and *countryD* are excluded from this table.

The Econometric Model

$$(value)_{it} = \beta_{0it} + \beta_{1it}(indirector) + \beta_{1it}(interact) + \beta_{2it}(salary) + \beta_{3it}(employee) + \beta_{4it}(assets) + \beta_{5it}(gearing) + \beta_{6it}(sales) + \beta_{7it}(salesgrow) + \beta_{8it} - 1(value) + \text{other control variables} + \epsilon_{it}$$

Equation 1: The Regression Specification

Where

value is operationalised by return on equity (ROE);

indirector is the percentage of independent directors on board;

interact is the percentage of independent directors on board * Bloomberg social disclosure score;

salary is the natural logarithm of executive salary, as one of the elements of the executive compensation package in thousand USD;

employee is the natural logarithm of number of employees;

assets is the natural logarithm of total assets in thousand USD;

gearing is the debt-to-equity ratio;

sales is the natural logarithm of turnover in thousand USD;

sales grow is the growth rate of turnover;

Other control variables:

CSR reputation is the reputation for CSR, being rated 17 for the highest and 1 for the lowest; data was collected from Forture;

innovation reputation is the reputation for innovation, being rated 17 for the highest and 1 for the lowest; data was collected from Forture;

quality reputation is the reputation for product and service quality, being rated 17 for the highest and 1 for the lowest; data was collected from Forture;

industryD is the dummy variable for 171 industries;

yearD is the dummy variable for each year from 2005 to 2011;

countryD is the dummy variable for each country in the final dataset.

Natural logarithm was obtained for *salary*, *employee*, *assets* and *sales* to improve the normality of the data related to these variables.

Table 3.1: Predicted Impact of the Explanatory Variables on the Dependent Variable

Variable	Type of variable	Expected sign of significance	Expected magnitude of the coefficient of the explanatory variable
<i>value</i>	dependent		
<i>interact</i>	key explanatory	+	small
<i>indirector</i>	key explanatory	+	small
<i>salary</i>	control	+	small
<i>employee</i>	control	-	large
<i>assets</i>	control	-	large
<i>gearing</i>	control	+	large
<i>CSR reputation</i>	control	+	small
<i>innovation reputation</i>	control	+	small
<i>quality reputation</i>	control	+	small
<i>sales</i>	control	+	large
<i>salesgrow</i>	control	+	large

EMPIRICAL RESULTS

Descriptive Statistics

This section describes the data and provides the first glance at the patterns of *value* created by the synergic resource of the independent directors (*indirector*) and CSR disclosure (*CSR disclosure*). The former is proxied by the percentage of independent directors in the board membership, and the latter proxied by social disclosure score. [Table 1](#) reports the means, medians, standard errors, minimum and maximum values of the dependent and independent variables, for all years and by each year.

Although ROE has many outliers, under the law of large numbers and the central limit theorem, the efficiency of *value* estimation is more easily accepted as the number of observations increases to a substantially large level even if the normality assumption of *value* is violated (Li *et al.*, 2012). Thus the outliers of ROE in the dataset were retained as they might be meaningful in the interpretation of the regression results.

[Insert [Table 1](#)]

In the first glance, at the 2008 collapse, there are two main features seen in [Table 1](#). *First*, ROE was the lowest in 2008 among the seven observed years. The mean of ROE reported for 2008 was even lower than the median, which indicates that a majority of companies in the dataset had profit below the average level in 2008. *Second*, there is a wide gap between the minimum and maximum percentage of independent directors (0%-100%), which reveals the inside-outside board composition varies substantially across the firms.

An alternative way of visualizing the change in value creation around financial crisis event in 2008 is to notice the drop in mean ROE (10.77) in 2008 after the drop in mean *CSR disclosure* (18.68) in 2007. This indicates the trend that a considerable number of the firms in the dataset disclosed less the information of their social activities in 2007, the year that the global financial history started to suffer from the shock.

The descriptive statistics of the control variables are reported in [Table 2](#). The year, industry and country dummies are excluded from these tables.

[Insert [Table 2](#)]

It is interesting to see at the first glance that the capital structure (*gearing*) and sales growth vary substantially among the studied firms. The fact that the mean of *gearing* higher than its median indicates that a number of the firms were dependent on debt. Some of the firms in the dataset see the dramatic drop in sales growth, evidenced by the negative ratio as the minimum value of *salesgrow* (-82.13).

Correlation Analysis

[Insert [Table 3](#)]

[Table 3](#) shows the bivariate correlation coefficient between each pair of the variables in the dataset. As can be seen in this covariance matrix, both *CSR disclosure* and *indirector* is significantly and slightly correlated with *value*, which at first suggests the possibility that a change in the proportion of independent directors is likely to be marginally and positively correlated with a change in profitability of the firms in the dataset, and the trend of change in *CSR disclosure* and *value* is likely the same.

A first glance at the correlation coefficients seems to confirm the intuition from the theory that a change in *value* responds minimally and positively to a change in CSR disclosure and to a change in the proportion of independent directors on board.

There is a significantly large correlation between each pair of the control variables, *sales*, *assets* and *employee*. A visual inspection of the correlation coefficients would indicate concerns for multicollinearity; therefore, we detected multicollinearity using variance inflation factors (VIF) to

measures how much the variance of the coefficients is inflated by multicollinearity. VIF estimates how much the variance of a coefficient is inflated because of linear dependence with other predictors. The general rule of thumb is that VIFs exceeding 10 are signs of serious multicollinearity requiring correction (Belsley *et al.*, 1980). The test results show that the individual VIF of each variable and the mean VIFs are all well below the rule-of-thumb of 10. This demonstrates that the assumption of no perfect multicollinearity is not seriously violated in the models.

Further investigation into this association will be reported in the regression results after the control variables suggested by Schmidt and Keil's (2013) model were taken into account.

Result Interpretation

Fixed-effects estimation

Model 1 and Model 2 were run before robust check, Model 3 and Model 4 after robust check. Model 1 and Model 3 report the outputs without the combination of independent directors and CSR (*interact*). Model 2 and Model 4 reports the results after adding *interact* in the regressions. The interpretations of the regression outputs focus on the key explanatory variables, i.e., *indirector* and *interact*. Table 4 shows the output of the fixed-effects regressions of *indirector* and/or *interact* on the value, measured by ROE.

[Insert Table 4]

Models 1 and Model 3 show an insignificantly negative impact of *indirector* alone on *value*. In contrast, after *indirector* in combination with CSR disclosure was added into the regressions, the impact of *indirector* interacted with CSR disclosure became significantly and minimally positive ($\beta=.0029$ in Model 2 and Model 4). This suggests that, although *indirector* may have insignificant impact on *value* measured by ROE, *indirector* combining with CSR disclosure is likely to cause a minimal increase in *value*. Hypothesis 1 and Hypothesis 2 are supported at 95% confidence interval.

The results can be interpreted that the studied firms would have had more chance to improve profitability if the tasks of independent directors were closely linked with CSR disclosure by the management. Independent directors' combination with stakeholders through using CSR disclosure might have been efficient when firms were under the turbulence during the recent financial crisis. Possibly, the embedment of stakeholder approach in the governance mechanism of using independent directors could be one of the effective solutions for value creation.

Quantile regressions

Schmidt and Keil (2013) highline one of the limitations of their model is the assumption that customer's willingness-to-pay is unbounded. Therefore, we tested Hypothesis 1 and Hypothesis 2 in the condition of relaxing this assumption to see if the significance of the fixed-effects estimation result hold.

To do that, we ran Model 5 (25%-percentile), Model 6 (50%-percentile) and Model 7 (75%-percentile) to check the rigorousness of the regression results of the main model (Model 2 and Model 4) within different quantiles of the median distribution of ROE.

[Insert Table 5]

As can be seen in Table 5, the median regression results are significant for *interact* ($P<.01$); thus, Hypothesis 1 and Hypothesis 2 are again supported.

Event study

An event study was conducted of which the regression results are displayed in Table 6.

[Insert Table 6]

There might be unobserved systematic differences across firms in the economic environment at the time of recession. These may operate at the firm level or may be specific to the years of the study period. Unlike the panel analysis and the quantile regression analysis, the event-study approach uses the observations per stage - before, during and after the event. This approach was used to investigate the change in *value* around the time that the event happened. As can be seen in the ROE data, 2008-2009 is the stage that the global financial history is under the shock.

In [Table 6](#), we compared *value* in the period of 2005-2007 as pre-crisis, 2008-2009 when the event of the crisis happened at its peak, and the recovery years 2010-2011 after the peak of crisis. Employing pre-crisis data allows for an unbiased assessment (Hoorn, 2015). The dataset was split into three subsets in line with the period before, during and after the peak of the crisis. A pattern might emerge when we exploited the time dimension in the data as well as the sub-set of the firms below the median of ROE and the remaining sub-set of the firms above the median of ROE.

There is evidence that, when the financial crisis was at its peak (2008–2009), *CSR disclosure* has significant and positive minimal impact on *value* in all of the firms, no matter that is below or above the median of ROE ($\beta=.08$, P value $<.01$ in Model 7; $\beta=.08$, P value $<.05$ in Model 8). However, after the crisis, only the firms in the lower median of ROE distribution saw the significant and positive minimal impact of *CSR disclosure* on *value* ($\beta=.06$, P value $<.001$ in Model 9). Interestingly, while most firms in the dataset tend to recover after the deep end of the financial crisis, the effect of *CSR disclosure* on *value* is significantly pronounced for the less profitable firms.

Robustness Check

The procedure of diagnosing the regression models was strictly applied as followed.

The use of fixed-effect estimation method

Regarding the model specification, we did not choose pooled OLS estimations as the Breusch and Pagan Lagrangian multiplier test shows $P<.001$ in Models 1-4, which indicates the presence of panel effects on the change of ROE. Further, the Hausman test results ($P<.05$ in the four models) suggest that fixed-effects estimations are preferred than random effects estimations.

OLS assumptions

We tested the OLS assumptions related to linearity, heteroskedasticity, multicollinearity and series correlation. The test results of the assumption of linearity, $P<.001$ in the four models, indicate that the non-linearity hypothesis was rejected. Regarding the assumption of heteroskedasticity, the regression results after adjusting the standard errors in the main models held, suggesting the assumption of constant variance was not seriously violated. Regarding the assumption of multicollinearity, the mean VIF well below 10 demonstrates that the assumption of independent variables is not seriously violated. Regarding the assumption of no series correlation among the observations, we applied the Wooldridge (2002) test; its results, $P>.05$ in the four models, show that the assumption of no series correlation among the observations is not seriously violated.

Endogeneity

There are intrinsically unobserved elements in the dependent variable that cannot be estimated in the error term of a statistical model. The key explanatory variable is endogenous when there is a correlation with the error term (Wooldridge, 2013). The next two steps are to investigate if *interact* is endogenous with the error term and if *indirector* is endogenous with the error term; that is, to investigate the likely association between either *interact* or *indirector* and the residual of the models.

In the first step, the residuals R1 for Model 1 and R2 for Model 2 were obtained from the pooled OLS models using *value* as the dependent variable. The correlation between *interact* and each of the residuals and that between *indirector* and each of the residuals were examined, demonstrating that there was no significant correlation between either *interact* or *indirector* and each of the residuals ($P>0.05$).

The second step is to investigate the association between *interact* and each of the residuals and the association between *indirector* and each of the residuals using fixed-effects estimations. The regression results display that there were no significant associations between either *interact* or *indirector* and each of the residuals ($P > 0.05$). Therefore, *interact* is exogenous with the error term in the models, and so as *indirector*.

Further, a loop of causality between the independent and dependent variables of a model leads to endogeneity (Jia and Skaperdas, 2012). Therefore, we investigated the reversal consequences of *value* on *interact* and that on *indirector* to see whether the reversal impacts were insignificant. We need to ensure that the direction of causality is not reversal (Chen, 2014). The same control variables as of the main models were used in the reversal regressions. The regression outputs show that the causal effect of *value* was not statistically significant on either *interact* or *indirector*. This once again suggests that the endogeneity problem is not seriously violated.

For the quantile model, the test result of the linearity assumption demonstrates that this assumption is not violated. The results also show that the model specification is statistically accepted.

DISCUSSIONS AND CONCLUSIONS

The results of the previous empirical studies on the effect of independent directors on financial performance vary substantially (Dalton *et al.*, 1998; Dalton *et al.*, 1999). Bhagat and Black's (1999) survey of boards of American public companies that have a majority of independent directors reveals the uncertain relationship between board composition and firm value; particularly they find the evidence that firms with supermajority-independent boards are even less profitable than other firms. The results of a meta-analysis conducted by Rhoades *et al.* (2000) indicate that both insider and outsider dominated boards had a small positive impact on financial performance. There is no significant difference between high-performing companies and low-performing companies in terms of the number of outside directors; the key to making boards work better rests in the board process (Finkelstein and Mooney, 2003). Peng's (2004) finding suggests that independent directors have little impact on ROE during institutional transition in China. Recently, Luan and Tang (2007) find independent directors have a significant positive impact on ROE in Taiwan, but not significant in the outperforming firms due to their absorptive capacity. The empirical findings over the past fifteen years remain controversial on the influence of independent directors to financial performance; the overall conclusion of the many empirical studies is that there is no relationship between independent directors and firm performance (Hermalin and Weisbach, 2003).

There are plausible reasons for the concern on the effectiveness of independent directors in firm performance. There might be a criticism that independent directors are inexperienced in the company's business, thereby being unable to give sound advice in the management of the business (Kiel and Nicholson, 2005). Further, due to independent directors' lack of information that affects their ability of monitoring and control (Brennan, 2006), firms with a higher percentage of independent board members do not always perform better than the rest. In the absence of detailed information, independent directors may not be able to understand business well enough to make a meaningful contribution to improving financial performance (Baysinger and Hoskisson, 1990).

Likewise, the literature remains controversial of the dependent relationship between CSR and financial performance (McWilliams and Siegel, 2001); at the same time, there has not been a single theory to support that CSR should have impact on financial performance (Aguilera *et al.*, 2007). There should be underlying mechanisms involved with the moderated and mediated variables in this relationship (Zattoni and Ees, 2012). Recently, Ntim and Soobaroyen's (2013b) study find that a combination of corporate governance and CSR has a stronger positive effect on profitability than CSR alone in a single country. However, whether this finding holds at the global level remains unanswered.

This study goes a step further into how and why a synergy of independent directors and CSR disclosures affects value captured on product market in multiple countries. Grounded by Schmidt and Keil's (2013) work, this study proposes a governance model of using independent directors and CSR disclosure together adding value to firms. The study presents the regression results in favour of the proposed model. There was a chance that the combined resources of independent directors and their stakeholder networks built and maintained through CSR disclosure were minimally and positively associated with finance performance in the FWMA firms from 2005 to 2011. The results support the social network theory, resource dependence theory and agency theory.

This study might recommend the extension for Schmidt and Keil's (2013) function of the conditions and mechanism that resources become value added to a firm's profit ex ante to the ex post. It is not evident that independent directors alone had a significant impact on value capture in this study; however, after accounting for CSR disclosure as a moderator in this relationship, the impact of independent directors on financial performance became significantly positive. The study results suggest that the synergy of independent directors and stakeholders should enhance a firm's position in interorganisational networks which gives the firm more accessibility to relevant information; this might become the factor leading to increasing willingness-to-pay of the firm's potential customers. As proposed by Schmidt and Keil (2013), the more diverse the relationships of a firm to its customers, suppliers, and alliance partners, the better it can access information and, subsequently, the closer the willingness to pay for a resource ex ante will be to the product market impact of the resource ex post. This implies that independent directors might have had contribution to profitability from their effort of using CSR disclosure during the recent global financial crisis; therefore, stakeholder approach should be embedded in the traditional tasks of independent directors.

The evidence shows that CSR disclosure was of significance when the firms were at the peak of the financial crisis. During 2010 and 2011 when the global financial situations started to recover, CSR disclosure remains a significant impact to value capture by the low performing firms. The results might recommend that the firms would have had more chance to improve profitability if independent directors' tasks were closely linked with CSR disclosure. Independent directors combining with stakeholders through CSR disclosure might have been an efficient strategy during the recent financial crisis. These results confirm that CSR responds to the financial crisis by adding a small margin of profitability to the firms under the financial difficulty as the confirmation is stronger in the subset of unprofitable firms.

The positive effect caused by this synergy on increased ROE may recommend this synergy be one of the factors that explain how and why to increase willingness-to-pay. This confirms Schmidt and Keil's (2013) theory. The more diverse the relationships of a firm are to its customers, suppliers, and alliance partners, the better it can access information; subsequently, the closer its willingness to pay for a resource ex ante will be transformed into the market impact of the resource ex post.

However, the study challenges the use of salary as the proxy for measurement of managers' prior knowledge and experience. There is no significant impact of *salary* on *value* found in all of the regression results obtained this study although following Spense (1973) salary could be used to quantify managers' knowledge and experience. This might raise the need for another the measure for managers' knowledge and experience in future studies and question the conditions of managers' knowledge and experience in the theoretical model.

Earlier, Cheng and Courtenay (2006) finds the evidence that firms with a higher proportion of independent directors on the board are associated with higher levels of voluntary disclosure. Donnelly and Mulcahy (2008) report that an increase in voluntary disclosure is positively related to a rise in the number of non-executive directors on the board. Still, there is a concern on the quality of voluntary disclosure given the problem of information asymmetry (Akerlof, 1970; Spense, 1973; Stiglitz, 1975). Thus, this study results point to a need for independent directors' supervision of CSR activities and the importance of audit of CSR disclosure due to independent directors who might take advantage of this type of information disclosure.

Additionally, this study implies that there should be a global convergence of the governance principles where CSR for winning the goodwill of stakeholders and independent board members are linked together for improvement of sustainable profit. The study offers the idea that investments in companies with independent directors who are active in social networking through CSR are likely to be a worthy investment; there is likelihood of realizing sustainability-related opportunities in these networks.

Theoretical contributions. To the best of our knowledge, this is the first study that proposes the extension to and empirically tests Schmidt and Keil's (2013) theory of the conditions and mechanisms that make resources valuable to a firm before a decision on acquiring or building it is made. The proposed model built on Schmidt and Keil's (2013) function suggests that independent directors are likely to enhance shareholders' wealth by using CSR disclosure. This study confirms the social network theory, resource dependence theory and agency theory, suggesting the link among these theories in the global context.

Practical contributions. The study offers corporate managers, policy makers and investors the insight that profit might be gained from the combined resources of independent directors and stakeholders when the firms are in recession. It is, thus, recommended that CSR projects should be involved with independent directors to maximize efficiency. There is a need for independent directors' task of overseeing CSR activities.

This study has three main limitations worthy of further research. The *first* comes from the objective paradigmatic approach since it attempts to quantify human attitudes and behaviour embedded in social attribute constructs of CSR. The percentage of independent board members does not adequately reflect the extent of their resources in the real world. It might be only the tip of the iceberg since the study rests on the false assumption that human behaviour is observable and that observers have the time and ability to watch all human behaviour (Eisenhardt, 1989). The *second* comes from the impossibility of generalisation of the findings in the context of small and medium firms as the firms that do not meet the turnover selection criteria of Fortune survey are not included in the dataset. *Third*, this study is bound to the assumption of information symmetry in Schmidt and Keil's (2013) model. Future research into the issue is expected to fill these research gaps.

Table 1: Descriptive Statistics of the Dependent and Independent Variables

Variable		All	2005	2006	2007	2008	2009	2010	2011
Dependent <i>value</i>	Mean	16.64	26.46	21.80	19.24	10.77	13.52	17.64	19.56
	Median	15.37	21.14	19.45	18.03	14.58	12.38	14.25	15.38
	S.D.	28.19	39.71	18.74	18.94	32.51	35.03	21.59	27.10
	Min	-200.77	2.27	-36.54	-77.01	-200.77	-122.40	-51.98	-71.45
	Max	433.12	312.76	133.71	106.66	170.45	433.12	194.38	316.78
Independent <i>interact</i> (= <i>indirector</i> *social disclosure score)	Mean	1912.75	1957.96	1861.17	1521.13	1824.64	2006.00	2185.87	1990.49
	Median	1578.95	1977.44	1578.96	797.46	1368.42	1715.42	1913.90	1578.95
	S.D.	1516.08	1401.51	1410.12	1395.17	1514.33	1506.75	1570.89	1576.68
	Min	0.00	223.30	208.34	115.79	116.96	175.44	95.69	0.00
	Max	7692.50	5480.91	6732.02	6302.31	6732.02	6779.02	7192.98	7692.50
<i>indirector</i>	Mean	79.05	81.46	81.28	80.99	78.47	77.44	78.92	78.29
	Median	83.33	82.58	82.58	84.62	83.33	81.82	84.62	84.62
	S.D.	14.80	9.15	11.52	12.02	14.63	15.77	15.65	17.38
	Min	0.00	50.00	33.33	33.00	18.18	18.75	11.11	0.00
	Max	100.00	93.33	100.00	100.00	100.00	100.00	100.00	100.00
<i>CSR disclosure</i>	Mean	24.63	24.22	23.35	18.68	23.65	26.46	28.21	26.07
	Median	19.30	23.68	20.18	8.77	19.30	22.81	24.56	22.81
	S.D.	19.05	17.25	17.59	16.82	19.31	19.33	19.52	19.58
	Min	3.16	3.12	3.16	3.13	3.13	3.16	3.13	3.13
	Max	83.33	63.16	73.43	68.75	73.44	82.46	82.46	83.33

Notes: *indirector* is the percentage of independent directors on the board; *interact* is *indirector* multiplied by social disclosure score based on the 100-points scale; There is a significantly large correlation between each pair of the control variables for a firm's resource base, *sales*, *assets* and *employee* and between each pair of the control variables for a firm's market position, *csr*, *innovate* and *quality*. A visual inspection of the correlation coefficients would indicate concerns for multicollinearity; therefore, we used the test for variance inflation factor (VIF) to measure how much the variance of the coefficients is inflated by multicollinearity. The test results are generally well below the rule-of-thumb value of ten (2.32 for Model 1; 2.34 for Model 2; 2.37 for Model 3; 2.38 for Model 4 in Table 4), demonstrating that the model is identified since the assumption of no perfect multicollinearity is not seriously violated. Although the dependent variable, *value*, measured by ROE, has many outliers, under the law of large numbers and the central limit theorem, the efficiency of *value* estimation is more easily accepted as the number of observations increases to a substantially large level even if the normality assumption of *value* is violated (Li *et al.*, 2012). Thus, we retained the outliers of ROE in the dataset as the outliers might be meaningful in the interpretation of the regression results.

Table 2: Descriptive Statistics of the Control Variables

Control Variables	Mean	Median	S.D.	Min	Max
Knowledge and experience of managers					
<i>salary</i>	15.01	15.05	.68	10.00	23.32
Resource base allowing for complementarities					
<i>sales</i>	9.67	9.63	1.13	6.74	12.98
<i>assets</i>	10.04	9.95	1.45	6.48	14.90
<i>employee</i>	10.53	10.56	1.21	5.31	14.56
<i>gearing</i>	135.05	58.09	476.06	.00	10284.10
Market position					
<i>csr reputation</i>	12.15	12.00	3.44	2.00	17.00
<i>innovate reputation</i>	5.88	6.00	3.49	1.00	17.00
<i>quality reputation</i>	5.89	6.00	3.52	1.00	17.00
<i>salesgrow</i>	5.85	5.83	19.18	-82.13	208.42

Notes: This is the statistics for all firm-year observations; *salary* is the natural logarithm of total executives' salary of a firm; *gearing* is the debt-to-equity ratio; *assets* is the natural logarithm of total assets; *csr reputation* is measured by Fortune CSR rank (originally from 1 to 17 top down) being converted into 17 for the highest rank down to 1 for the lowest rank; *innovation reputation* is measured by Fortune innovation rank (originally from 1 to 17 top down) being converted into 17 for the highest rank down to 1 for the lowest rank; *quality reputation* is measured by Fortune rank of product and service quality (originally from 1 to 17 top down) being converted into 17 for the highest rank down to 1 for the lowest rank; *salesgrow* is growth rate of turnover; *sales* is the natural logarithm of turnover; *employee* is the natural logarithm of number of employees.

Table 3: Correlation Matrix for All Firm-year Observations

Variable	1	2	3	4	5	6	7	8	9	10	11	12
Dependent												
1 <i>value</i>	1.00											
Independent												
2 <i>interact</i>	.07**	1.00										
3 <i>indirector</i>	.07**	.19***	1.00									
Control												
4 <i>salary</i>	.04	.12***	.13***	1.00								
5 <i>assets</i>	-.08***	.32***	-.05*	.19***	1.00							
6 <i>employee</i>	.01	.30***	-.05*	.14***	.50***	1.00						
7 <i>sales</i>	.02	.37***	-.04	.19***	.76***	.72***	1.00					
8 <i>gearing</i>	.09***	.00	-.01	-.01	.09***	.01	.01	1.00				
9 <i>csr reputation</i>	.02	-.04	.16***	.13***	-.06*	-.12***	-.11***	.01	1.00			
10 <i>innovation reputation</i>	-.03	.05*	-.14***	-.07**	.06*	.10***	.09***	.01	-.79***	1.00		
11 <i>quality reputation</i>	-.03	.07**	-.13***	-.10***	.06*	.08***	.10***	-.01	-.80***	.85***	1.00	
12 <i>salesgrow</i>	.16***	-.05*	-.03	-.00	-.00	.05*	.09***	-.02	-.01	-.00	-.01	1.00

Notes: * p<.05 ** p<.01 *** p<.001.

Table 4: Fixed-Effects Mean Regression Outputs

Dependent variable: <i>value</i> (measure by ROE)	Model 1	Model 2	Model 3 Robust	Model 4 Robust
Independent variables				
Position in the networks				
<i>indirector</i>	-.10 (-.68)	-.20 (-1.28)	-.10 (-.91)	-.20 (-1.28)
<i>interact</i>		.0029* (2.36)		.0029* (2.36)
Control variables				
Knowledge and experience of managers				
<i>salary</i>	-.76 (-.40)	-.82 (-.43)	-.76 (-.72)	-.82 (-.43)
Resource base allowing for complementarities				
<i>assets</i>	3.52 (.48)	2.99 (.41)	3.52 (.24)	2.99 (.41)
<i>employee</i>	-22.04** (-3.00)	-22.41** (-3.06)	-22.04* (-2.19)	-22.41** (-3.06)
<i>gearing</i>	.01* (2.28)	.01* (2.25)	.01 (0.60)	.01* (2.25)
Market position =quantity* (willing to pay – cost)				
<i>sales</i>	15.05* (2.15)	15.93* (2.28)	15.05 (1.37)	15.93* (2.28)
<i>salesgrow</i>	.15** (3.13)	.15** (3.14)	.15** (3.12)	.15** (3.14)
<i>l.value</i>	-.16*** (-3.98)	-.16*** (-3.90)	-.16 (-1.15)	-.16*** (-3.90)
Other control variables				
<i>csr reputation</i>	.40 (.76)	.37 (.72)	.40 (.86)	.37 (.72)
<i>innovation reputation</i>	.27 (.46)	.23 (.40)	.27 (.39)	.23 (.40)
<i>quality reputation</i>	-.32 (-.60)	-.36 (-.68)	-.32 (-.62)	-.36 (-.68)
<i>industryD</i>	included	included	included	included
<i>yearD</i>	included	included	included	included
<i>countryD</i>	included	included	included	included
N	1194	1194	1194	1194
R-square within	.10	.11	.10	.11

Notes: *t* statistics in parentheses; * $p < .05$, ** $p < .01$, *** $p < .001$; the coefficients of *industryD*, *yearD* and *countryD* are not reported in this table; *l.value* is one-year-lag data of *value*. Model 2 and Model 4 use robust standard errors to control for heteroskedasticity of Model 1 and Model 3 respectively. Model 1 and Model 3 report the regression results when the combination of independent directors and CSR (*interact*) was not included in the proposed theoretical model. Model 2 and Model 4 display the regression outputs when this factor was included in the proposed theoretical model. Model 1 and Model 2 are the main models.

Table 5: Quantile Regression Output

Dependent variable: <i>value</i> (measured by ROE)	Model 5	Model 6	Model 7
	25%	50%	75%
Independent variables			
Position in the networks			
<i>indirector</i>	.04 (1.18)	.05 (1.95)	.04 (1.39)
<i>interact</i>	.0007** (2.97)	.0007** (2.98)	.0007* (2.39)
Control variables			
Knowledge and experience of managers			
<i>salary</i>	-.23 (-.44)	.26 (.52)	1.03 (1.62)
Resource base allowing for complementarities			
<i>assets</i>	-2.50*** (-6.92)	-3.31*** (-10.44)	-5.33*** (-13.84)
<i>employee</i>	.33 (.80)	.25 (.71)	-.57 (-1.38)
<i>gearing</i>	-.002*** (-3.60)	.002*** (3.92)	.013*** (23.08)
Market position			
<i>sales</i>	3.84*** (6.32)	3.21*** (6.31)	5.31*** (9.05)
<i>salesgrow</i>	.13*** (5.33)	.13*** (8.12)	.18*** (10.69)
Other control variables			
<i>csr reputation</i>	-.04 (-.24)	-.14 (-.90)	-.13 (-.69)
<i>innovation reputation</i>	-.20 (-1.08)	-.13 (-.75)	.07 (.31)
<i>quality reputation</i>	.36* (1.99)	-.05 (-.29)	-.23 (-1.03)
<i>yearD</i>	included	included	included
<i>countryD</i>	included	included	included
N	1817	1817	1817
Pseudo R2	.08	.09	.11

Notes: t statistics in parentheses; * p < .05, ** p < .01, *** p < .001; due to the considerable reduction in the number of observations in the quantile regressions, the industry dummy variable, *industryD* (for 171 industries as classified by Bloomberg) was excluded in the quantile regressions so that the degree of freedom is large enough to run the models; Year dummy and country dummy variables are not reported in this table; *l.value* was not used as time-series operators are not allowed in the quantile models.

Table 6: Regression Outputs – Event Study

Dependent variable: <i>value</i> (measured by ROE)	Before crisis		Peak of crisis		Recovery years	
	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13
	lower 50%	higher 50%	lower 50%	higher 50%	lower 50%	higher 50%
Independent variable						
Firm's position in the network						
<i>CSR disclosure</i>	0.03 (1.02)	0.05 (1.42)	0.08** (2.62)	0.08* (2.11)	0.06*** (3.35)	-0.02 (-0.78)
<i>indirector</i>	0.08 (1.92)	0.02 (0.42)	0.04 (0.86)	-0.00 (-0.01)	0.04 (1.63)	0.05 (0.94)
Control variable						
Knowledge and experience of managers						
<i>salary</i>	0.48 (0.58)	-0.06 (-0.08)	0.17 (0.24)	-0.38 (-0.65)	0.59 (0.93)	1.32 (1.04)
Resource base allowing for complementarities						
<i>employee</i>	-0.53 (-0.98)	-1.08 (-1.84)	-0.06 (-0.10)	-0.35 (-0.52)	1.11** (3.01)	0.01 (0.02)
<i>assets</i>	-3.07*** (-6.16)	-4.05*** (-5.58)	-3.89*** (-7.37)	-3.87*** (-4.88)	-3.20*** (-10.06)	-1.87* (-2.26)
<i>gearing</i>	-0.00 (-1.57)	0.01*** (4.52)	0.00** (2.87)	0.05*** (29.30)	0.01*** (42.22)	0.01*** (38.15)
Firm's market position						
<i>sales</i>	4.50*** (5.80)	4.15*** (4.39)	3.76*** (4.49)	2.86** (2.64)	2.51*** (4.74)	1.36 (1.33)
<i>salesgrow</i>	0.11*** (5.03)	0.06 (1.83)	0.21*** (8.59)	0.08 (1.91)	0.14*** (7.17)	0.10** (2.71)
Other control variable						
<i>quality reputation</i>	0.28 (1.94)	-0.24 (-1.45)	-0.17 (-1.16)	-0.28 (-1.57)	-0.15 (-1.75)	-0.18 (-1.23)
<i>countryD</i>	included	included	included	included	included	included
N	489	303	706	306	622	299
Pseudo R ²	0.09	0.08	0.08	0.13	0.12	0.13

Notes: *t* statistics in parentheses; * $p < .05$, ** $p < .01$, *** $p < .001$; the coefficients of country dummy variable are not reported in this table; industry dummy is not included in these models to retain enough degree of freedom for running the models; *l.value*, one-year-lag data of *value*, is not included in these models to retain the acceptable number of observations for modelling.

References

- Acharya, A.G. and Pollock, T.G. (2013) Shoot for the Stars? Predicting the Recruitment of Prestigious Directors at Newly Public Firms. *Academy of Management Journal*, 56 (5), 1396-1419.
- Adler, P.S. and Kwon, S.W. (2002) Social capital: Prospects for a new concept. *Academy of Management Review*, 27 (1), 17-40.
- Aguilera, R.V., Rupp, D.E., Williams, C.A. and Ganapathi, J. (2007) Putting the S Back in Corporate Social Responsibility: A Multilevel Theory of Social Change in Organizations. *Academy of Management Review*, 32 (3), 836-863.
- Akerlof, G.A. (1970) The Market for "Lemons": Quality Uncertainty and the Market Mechanism. *The Quarterly Journal of Economics*, 84 (3), 488-500.
- Ammann, M., Oesch, D. and Schmid, M.M. (2011) Corporate governance and firm value: International evidence. *Journal of Empirical Finance*, 18 (1).
- Barney, J.B. (1991) Firm resources and sustained competitive advantage. *Journal of Management*, 17, 99-120.
- Beasley, M.S. (1996) An Empirical Analysis of the Relation between the Board of Director Composition and Financial Statement Fraud. *The Accounting Review*, 71 (4), 443-465.
- Belsley, D.A., Kuh, E. and Welsch, R.E. (1980) *Regression Diagnostics: Identifying Influential Data and Sources of Collinearity*. New York: John Wiley.
- Bhagat, S. and Black, B. (1999) The Uncertain Relationship between Board Composition and Firm Performance. *The Business Lawyer*, 54 (3), 921-963.
- Brennan, N. (2006) Boards of Directors and Firm Performance: is there an expectations gap? *Corporate Governance: An International Review*, 14 (6), 577-593.
- Buhr, N. (1998) Environmental performance legislation and annual report disclosure: the case of acid rain and Falconbridge. *Accounting, Auditing and Accountability Journal*, 11 (2), 163-190.
- Burt, R.S. (1992) *Structural Holes: The Social Structure of Competition*. Cambridge: Harvard University Press.
- Burt, R.S. (2005) *Brokerage and Closure: An Introduction of Social Capital*. New York: Oxford University Press.
- Chan, M.C., Watson, J. and Woodliff, D. (2013) Corporate Governance Quality and CSR Disclosures. *Journal of Business Ethics*, DOI 10.1007/s10551-013-1887-8.
- Chen, H.L. (2014) Board Capital, CEO Power and R&D Investment in Electronic Firms. *Corporate Governance: An International Review*, 22 (5), 422-436.
- Cheng, E.C.M. and Courtenay, S.M. (2006) Board composition, regulatory regime and voluntary disclosure. *The International Journal of Accounting*, 41 (3), 262-289.
- Collett, P. and Hrascky, S. (2005) Voluntary disclosure of corporate governance practices by listed Australian companies. *Corporate Governance: An International Review*, 13 (2), 188-196.
- Dalton, D.R., Daily, C.M., Ellstrand, A.E. and Johnson, J.L. (1998) Meta-Analytic Reviews of Board Composition, Leadership Structure, and Financial Performance. *Strategic Management Journal*, 19, 269-290.
- Dalton, D.R., Daily, C.M., Johnson, J.L. and Ellstrand, A.E. (1999) Number of Directors and Financial Performance: A Meta-Analysis. *The Academy of Management Journal*, 42 (6), 674-688.

- Donnelly, R. and Mulcahy, M. (2008) Board Structure, Ownership, and Voluntary Disclosure in Ireland. *Corporate Governance: An International Review*, 16 (5), 416-429.
- Dore, R. (2005) Deviant or Different? Corporate Governance in Japan and Germany. *Corporate Governance: An International Review*, 13 (3), 437-446.
- Eccles, R.G., Krzus, M.P. and Serafeim, G. (2011) Market Interest in Nonfinancial Information. *Journal of Applied Corporate Finance*, 23 (4), 113-127.
- Eisenhardt, K.M. (1989) Agency theory. *Academy of Management Review*, 14, 57-74.
- Ferreira, D. (2015) Board Diversity: Should We Trust Research to Inform Policy? *Corporate Governance: An International Review*, 23 (2), 108-111.
- Finkelstein, S. and Mooney, A.C. (2003) Not the usual suspects: How to use board process to make boards better. *Academy of Management Executive*, 17 (2), 101-113.
- Flammer, C. (2014) Does Corporate Social Responsibility Lead to Superior Financial Performance? A Regression Discontinuity Approach. *forthcoming in Management Science*.
- Fombrun, C.J. and Shanley, M. (1990) What's in a name? Reputation building and corporate strategy. *Academy of Management Journal*, 33 (2), 233 -258.
- Frye, M.B., Nelling, E. and Webb, E. (2006) Executive compensation in socially responsible firms. *Corporate Governance-an International Review*, 14 (5), 446-455.
- Galunic, C., Ertug, G. and Gargiulo, M. (2012) The positive externalities of social capital: benefiting from senior brokers. *Academy of Management Journal*, 55 (5), 1213-1231.
- Glavas, A. and Piderit, S.K. (2009) How Does Doing Good Matter?: Effects of Corporate Citizenship on Employees. *Journal of Corporate Citizenship*, (36), 51-70.
- Gordon, J.N. (2007) The rise of independent directors in the United States, 1950-2005: Of shareholder value and stock market prices. *Stanford Law Review*, 1465-1568.
- Gray, R.H., Owen, D. and Adams, C. (1996) *Accounting and Accountability*. Hemel Hempstead: Prentice Hall.
- Hart, O. (1995) Corporate Governance: Some Theory and Implications. *The Economic Journal*, 105 (430), 678-689.
- Haynes, K.T. and Hillman, A.J. (2010) The effect of board capital and CEO power on strategic change. *Strategic Management Journal*, 31, 1145-1163.
- Hermalin, B.E. and Weisbach, M.S. (2003) Boards of directors as an endogenously determined institutions: A survey of the economic literature. *Economic Policy Review*, 9 (1), 7-26.
- Hillman, A.J. and Dalziel, T. (2003) Boards of directors and firm performance: Integrating agency theory and resource dependence perspectives. *Academy of Management Review*, 28, 383-396.
- Hoorn, A.V. (2015) The Global Financial Crisis and the Values of Professionals in Finance: An Empirical Analysis *Journal of Business Ethics*, 130 (2), 253-269
- Jensen, M.C. (2001) Value Maximization, Stakeholders Theory and the Corporate Objective Function. *European Financial Management*, 7 (3), 297-317.
- Jensen, M.C. and Meckling, W.H. (1976) Theory of the firm: Managerial behavior, agency cost and ownership structure. *Journal of Financial Economics*, 3 (4), 305-360.
- Jia, H. and Skaperdas, S. (2012) Technologies of Conflict IN: Garfinkel, M.R. and Skaperdas, S. (eds.) *The Oxford Handbook of the Economics of Peace and Conflict*. New York: Oxford University Press, Inc. , 449-472.

- Johanson, D. and Ostergren, K. (2010) The Movement Toward Independent Directors on Boards: A Comparative Analysis of Sweden and the UK. *Corporate Governance: An International Review*, 18 (6), 527-539.
- Jones, C., Hesterly, W.S. and Borgatti, S.P. (1997) A General Theory of Network Governance: Exchange Conditions and Social Mechanisms. *Academy of Management Review*, 22 (4), 911-945.
- Kiel, G.C. and Nicholson, G.J. (2005) Evaluating Boards and Directors. *Corporate Governance: An International Review*, 13 (5), 613-631.
- Kim, Y. and Cannella, J.a.A. (2008) Toward a Social Capital Theory of Director Selection. *Corporate Governance: An International Review*, 16 (4), 282-293.
- King, A. and Zeithaml, C. (2003) Measuring organizational knowledge: A conceptual and methodological framework. *Strategic Management Journal*, 24, 763-772.
- Kraaijenbrink, J., Spender, J.C. and Groen, A.J. (2010) The resource-based view: A review and assessment of its critiques. *Journal of Management*, 36, 349-372.
- Kwon, S.W. and Adler, P.S. (2014) Social Capital: Maturation of a Field of Research. *Academy of Management Review*, 39 (4), 412-422.
- Lattemann, C., Fetscherin, M., Alon, I., Li, S.M. and Schneider, A.M. (2009) CSR Communication Intensity in Chinese and Indian Multinational Companies. *Corporate Governance-an International Review*, 17 (4), 426-442.
- Lee, J. and Roh, J.J. (2012) Revisiting corporate reputation and firm performance link. *Benchmarking: An International Journal*, 19 (4/5), 649 - 664.
- Li, X., Wong, W., Lamoureux, E.L. and Wong, T.Y. (2012) Are Linear Regression Techniques Appropriate for Analysis When the Dependent (Outcome) Variable Is Not Normally Distributed? . *Invest Ophthalmol Vis Sci*, 53 (6), 3082-3083.
- Lo, S.F. and Sheu, H.J. (2007) Is corporate sustainability a value-increasing strategy for business? *Corporate Governance-an International Review*, 15 (2), 345-358.
- Luan, C.J. and Tang, M.J. (2007) Where is Independent Director Efficacy? . *Corporate Governance: An International Review*, 15 (4), 636-643.
- Makadok, R. and Barney, J.B. (2001) Strategic factor market intelligence: An application of information economics to strategy formulation and competitor intelligence. *Management Science*, 47, 1621-1638.
- Makni, R., Francoeur, C. and Bellavance, F. (2009) Causality Between Corporate Social Performance and Financial Performance: Evidence from Canadian Firms *Journal of Business Ethics*, 89 (3), 409-422
- Mallin, C.A. (2010) *Corporate governance*, 3rd ed. Oxford, UK: Oxford University Press.
- Mc Guire, J.B., A., S. and T., S. (1988) Corporate social responsibility and firm financial performance. *Academy of Management Journal*, 31 (4), 854-872.
- McWilliams, A. and Siegel, D. (2001) Corporate Social Responsibility: a Theory of the Firm Perspective. *Academy of Management Review*, 26 (1), 117-127.
- Menz, K.M. (2010) Corporate Social Responsibility: Is it Rewarded by Corporate Bond Market? A Critical Note. *Journal of Business Ethics*, 96 (117-134).
- Ntim, C.G. and Soobaroyen, T. (2013a) Black Economic Empowerment Disclosures by South African Listed Corporations: The Influence of Ownership and Board Characteristics. *Journal of Business Ethics*, 116, 121-138.
- Ntim, C.G. and Soobaroyen, T. (2013b) Corporate Governance and Performance in Socially Responsible Corporations: New Empirical Insights from a Neo-Institutional Framework. *Corporate Governance: An International Review*, 21 (5), 468-494.
- Owen, D. (2008) Chronicles of wasted wime? a personal reflection on the current state of, and future prospects for social and environmental accounting research. *Accounting, Auditing and Accountability Journal*, 21 (2), 240-267.

- Peng, M.W. (2004) Outside Directors and Firm Performance during Institutional Transitions. *Strategic Management Journal*, 25, 453-471.
- Petkova, A.P., Wadhwa, A., Yao, X. and Jain, S. (2014) Reputation and Decision Making under Ambiguity: a Study of US Venture Capital Firms' Investments in the Emerging Clean Energy Sector. *Academy of Management Journal*, 57 (2), 422-448.
- Pfeffer, J. and Salancik, G.R. (1978) *The External Control of Organizations: A Resource Dependence Perspective*. New York: Harper & Row.
- Powell, W.W. (1990) Neither market nor hierarchy: Network forms of organization. *Research in Organizational Behavior*, 12, 295-336.
- Priem, R.L. (2007) A consumer perspective on value creation. *Academy of Management Review*, 32 (1), 219-235.
- Prior, D., Surroca, J. and Tribo, J.A. (2008) Are socially responsible managers really ethical? Exploring the relationship between earnings management and corporate social responsibility. *Corporate Governance-an International Review*, 16 (3), 160-177.
- Raelin, J.D. and Bondy, K. (2013) Putting the Good Back in Good Corporate Governance: The Presence and Problems of Double-Layered Agency Theory. *Corporate Governance: An International Review*, 21 (5), 420-435.
- Rashid, A. (2014) Revisiting Agency Theory: Evidence of Board Independence and Agency Cost from Bangladesh. *Journal of Business Ethics*, DOI 10.1007/s10551-014-2211-y.
- Ravina, E. and Sapienza, P. (2010) What do independent directors know? Evidence from their trading. *Review of Financial Studies*, 23 (3), 962-1003.
- Rhoades, D.L., Rechner, P.L. and Sundaramurthy, C. (2000) Board Composition and Financial Performance: A Meta-Analysis of The Influence of Outside Directors. *Journal of Managerial Issues*, 12 (1), 76-91.
- Sauerwald, S., Lin, Z. and Peng, M.W. (2014) Board Social Capital and Excess CEO Returns. [On line] DOI: 10.1002/smj.2339.
- Schmidt, J. and Keil, T. (2013) What Makes a Resource Valuable? Identifying the Drivers of Firm-idiosyncratic Resource Value. *Academy of Management Review*, 38 (2), 206-228.
- Sirmon, D.G., Hitt, M.A. and Ireland, R.D. (2007) Managing firm resources in dynamic environments to create value: Looking inside the black box. *Academy of Management Review*, 32, 273-292.
- Spense, M. (1973) Job Market Signaling. *The Quarterly Journal of Economics*, 87 (3), 355-374.
- Stiglitz, J.E. (1975) The Theory of "Screening," Education, and the Distribution of Income *The American Economic Review*, 65 (3), 283-300.
- Tantalo, C. and Priem, R.L. (2014) Value Creation through Stakeholder Synergy. [On line] DOI: 10.1002/smj.2337.
- Vargo, S.L. and Lusch, R.F. (2004) Evolving to a new dominant logic for marketing. *Journal of Marketing*, 68, 1-17.
- Vargo, S.L. and Lusch, R.F. (2008) Service-dominant logic: Continuing the evolution. *Journal of the Academy of Marketing Science*, 36, 1-10.
- Wang, Z. and Sarkis, J. (2013) Investigating the relationship of sustainable supply chain management with corporate financial performance. *International Journal of Productivity and Performance Management Science*, 62 (8), 871 - 888.
- Westphal, J.D. and Khanna, P. (2003) Keeping directors in line: social distancing as a control mechanism in the corporate elite. *Administrative Science Quarterly*, 48 (3), 361-398.

- Williamson, O. (1998) Transaction cost economics: how it works; where it is headed. *De Economist*, 146 (1), 23-58.
- Wooldridge, J.M. (2002) *Econometric Analysis of Cross Section and Panel Data*. Cambridge, Massachusetts: The MIT Press.
- Wooldridge, J.M. (2013) *Introductory Econometrics: A Modern Approach*, Fifth edition ed. Mason, USA: South-Western Cengage learning.
- Zattoni, A. and Ees, H.V. (2012) How to Contribute to the Development of a Global Understanding of Corporate Governance? Reflections from Submitted and Published Articles in CGIR. *Corporate Governance: An International Review*, 20 (1), 106-118.