BLOCK OWNERSHIP AND COMPANIES' R&D INTENSITY: THE MODERATING EFFECT OF CULTURE

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Abstract

This study seeks to examine the impact of Block Ownership structure on risk-taking as measured by R&D Intensity in OECD countries. The study uses a panel data of 200 companies from Anglo American and European countries between 2010 and 2014. The ordinary least squares regression is used to examine the relationships. Additionally, to alleviate the concern of potential endogeneity, we use fixed effect regression, two-stage least squares using instrumental variables. The results show that there is a negative and significant relationship between block ownership and risk-taking, with a greater significance among Continental European countries than among Anglo American countries. The rationale for this is that Continental European countries are more likely to have block owners who are also the co-founders and owners of their companies. Also, for the block owners in Anglo American companies, there is greater protection afforded minority shareholders because of the particular legal system in these countries. Future research could investigate risk-taking using other measures, performing interviews with firm's management, investors and owners. This study extends, as well as contributes to the extant CG literature by offering new evidence on the effect of Block ownership on risk-taking between two different traditions. The findings will help regulators and policymakers in the OECD countries in evaluating the adequacy of the current CG reforms to prevent management misconduct and scandals.

Keywords: R&D Intensity, Corporate Governance, Anglo-American Tradition, Continental European Tradition, OECD Countries, Block Ownership

1. INTRODUCTION

The subject of corporate governance (CG) has captured the attention of world organisations with the publication of the OECD's first Principles of CG in 1999 and the second Principles of CG five years later (OECD, 2004). The importance of CG became prominent with the recognition that management had to be held accountable for the functioning of their organisations, and this was evident from the many corporate scandals and failures that had taken place in the United States, the United Kingdom, and other European economies (Krenn, 2014).

The adoption of these principles and their adaptation to various countries, ownership styles, and economic situations has contributed to CG being considered a mark of success for organisations the world over (Krenn, 2014). But it must also be considered that there are various factors that affect how CG is carried out among countries, including the nature of the countries' economies, their legal systems, the governance systems established, the accounting systems used, and the protection afforded shareholders and other stakeholders (AlHares & Ntim, 2017).

However, in seeking to maximise performance, organisations must pay serious attention to R&D (Honore, Munari & van Pottelsberghe de la Potterie, 2015). R&D is an important catalyst for the development and introduction of new products and processes in organisations for the purpose of increasing the growth of productivity (Honore et al., 2015). Organisations see R&D as a means of survival, and so it is expected that shareholders are particularly interested in ensuring that the companies that they invest in are companies that would continue to grow. R&D is seen as the basis of growth in organisations over the long term (Lai & Chen, 2014).

But CG is thought to play an important part in how R&D is decided upon and several studies have been carried out to examine how CG influences R&D (Munari, Oriani & Sobrero, 2010; Driver & Coelho Guedes, 2012). However, several factors affecting CG in an organisation include the nature of a country's CG's governance characteristics (Pindado, de Queiroz & de la Torre, 2015), the protection of shareholders (Honore et al., 2015), the age of the organisations involved (Bianchini, Kraftt, Quatraro & Ravix, 2015), board of directors (Han, Bose, Hu, Qi & Tian, 2015), the amount of information being provided to shareholders (Cai, Liu & Qian, 2009), and the ownership structure of organisations (Choi, Zahra, Yoshikawa & Han, 2015; Tsao, Lin & Chen, 2015). It is expected that these are some of the factors that would also have an impact on R&D in the organisation.

It is also expected that the factors that influence CG would also influence R&D in organisations. Two important questions that would be addressed in this paper are: How does CG drive R&D and how does ownership structure moderate the assessment of R&D? The objective of this paper is to see how CG plays a role in the decisions to promote R&D in organisations, how the different types of ownership would either promote or discourage R&D and how management makes decisions regarding R&D.

This paper looks specifically at 10 countries, namely, the United States, Ireland, UK, Australia, Canada, France, Germany, Spain, Italy, and Japan, with the aim of examining corporations in each of these countries that use R&D and those without R&D. These countries are drawn from the Anglo-American or Shareholding CG model and from the Continental European or Stakeholding CG model.

More specifically, this paper sets out to study the relationship between block ownership and risk-taking as measured by R&D Intensity in OECD countries. The paper will begin with a discussion of the nature and structure of the Anglo-American and Continental European models, paying attention to the characteristics of these models. Information will be provided on how CG was reformed, its significance for the Anglo-American model and the Continental European model, and how this reform had an impact on how the new principles were applied to the two models. It will also look at the impact of reform on how ownership is seen in the case of both of these models. The different legal and accounting systems that are attached to these two models have varying effects on companies practicing in the Anglo-American and Continental European traditions, and these effects are shown to impact performance differently for companies in the different models and traditions. It is in this context that the paper will look at how block ownership in the two models have an impact on risk-taking, considering that risk-taking is measured by R&D Intensity.

2. CORPORATE GOVERNANCE AND R&D: A REVIEW (ANGLO-AMERICAN VS. CONTINENTAL EUROPEAN CG)

The Anglo-American model takes the shareholding perspective or the belief that the directors of companies have as their fiduciary the maximisation of shareholder value. Major shareholders are to be seen as a privileged group in a firm because they are the ones that take the greatest risks (Gamble & Kelly, 2001). The rationale underlying the shareholder model of CG is that if there is a failure in the organisation, creditors and the Internal Revenue has the first claim against the assets of the company.

One of the Continental European CG model characteristics is the emphasis on maximisation of stakeholder interest, which includes employees and other stakeholders, where investment is carried out on a long-term basis as opposed the short term (Aguilera & Jackson, 2010). As Schilling (2001) points out, in the German two-tiered board structure, the supervisory board functions in carrying out for appointments and "in case of an important reason the evocation of the members of the management board" (p. 148). The shareholders in the European system are for the most part passive, hold ineffective annual meetings, with most of the stocks owned by other companies giving rise to interlocking ownership (Schillng, 2001). There is little transparency in the selection process of supervisory boards (AlHares & Ntim, 2017).

With financial failures being rampant in the 1990s, and with specific measures undertaken in the form of Cadbury Committee in 1992 in UK and with the established as a result of this committee, OECD undertook development of the first Principles of CG, intended to set guidelines that OECD countries could follow to improve their governance (Kirkpatrick, 2009). The main focus of Cadbury Committee was protecting shareholder interests, with recommendations to establish internal committees that were aimed at undertaking to "link executive rewards more closely to performance" (Weir & Laing, 2000, p. 268).

Reform was also introduced in the Principles with respect to ownership. Whereas previous principles dealt primarily with shareholders, the new Principles took into concern the fact that there can be lack of effective ownership among OECD countries. The new Principles, therefore, put more attention to voting rights and that more attention should be given to the role of ownership and that the importance of board and remuneration for key executives have been seen as new areas where attention needed to be focused. Another area where reform was forthcoming was in the area of conflict of interests.

In terms of ownership, the new Principles recognised that there were different types of corporate ownership among the various countries and so recommended measures that would allow companies in these various countries to institute protections of organisations' wealth. The OECD (2004) called attention to voting rights, and to the role of ownership, the importance of the board of

directors, and the remuneration of directors (Kirkpatrick, 2004). This meant that more emphasis was placed on the different types of shareholders, investors, and other stakeholders, and the need for more disclosure so that there was greater knowledge about the workings of the organisations.

CG mechanisms were therefore recommended to ensure that these three main areas of reform were therefore implemented in organisations. But the OECD (2004) Principles also recognised that there could not be one set of rules to which all nations had to adhere. Therefore, the OECD (2004) pointed out that the Principles were to serve as 'reference point' that corporations were to use to bring their operations into compliance with good CG. The OECD (2004) therefore pointed out that it was not only the companies but the countries that had a responsibility to ensure that good CG was established. One of the issues that have become even more important has been that of risk management. As OECD (2012) explains, it must be recognised that risk is a necessary part of doing business, but there must be strong risk management provided in companies, for "effective risk management is not about eliminating risk-taking, which is indeed a fundamental driving force in business and entrepreneurship. At the same time, the need to strengthen risk management practices has been one of the main lessons from the financial crisis, for both financial and non-financial companies" (OECD, 2014, p. 13). Therefore, OECD (2014) has pointed out that risk is a necessary, but in a 2011 survey, OECD (2014) claims that 44 percent of those responding said their boards merely review and approve strategies that have been proposed by management.

Therefore, in this study, in order to examine how CG drives R&D and how ownership structure moderates the assessment of R&D, it would be necessary to see what CG mechanisms are in place to support R&D in the various companies, and to see how the ownership styles across countries and across companies make a difference in whether or not R&D is encouraged or discouraged.

The sample firms used in this paper are drawn from companies that are listed in the World's Biggest Public Companies listing, FORBES Global 2000 Leading Companies (Forbes, 2000). The sample is made up of 200 companies that were taken from 10 or 29.4% of the 34 OECD countries. The 200 companies have been selected both from the Anglo American tradition, which include companies from the five countries of Australia, Canada, Ireland, UK and US, and from the Continental European tradition, which includes companies from the 5 countries of France, Germany, Italy, Japan and Spain. These companies are drawn from 10 industries, namely, basic materials, consumer goods, consumer services, financials, healthcare, industrials, oil and gas, technology, telecommunications, and utilities. The period that was focused on was from 2010 to 2014, resulting in 1,000 firm-year observations. The study looked at how CG mechanisms impact risk-taking, in these firms in the various industries mentioned above.

According to La Porta, Lopez-de-Silvanes and Shleifer (2008), there are differences in the way that countries' legal systems work so that the type of investments that companies within countries can engage in would also differ. Therefore, the legal systems in the different countries could be seen as having an impact on the types of R&D that companies engage in. Therefore, country difference must also be taken into consideration in determining how CG would affect R&D (La Porta et al., 2008)

But there are also differences between firms even within the same countries as there are differences in how CG is carried out and this has an effect on the firm value and performance. Firm-level analyses reveal that other factors such as asymmetric information and high risk in decision making could lead to greater monitoring and this could affect performance. Therefore, this could have an impact on R&D. When there is greater CG, this puts greater emphasis on protecting the interests of the shareholders, so this could mean less opportunity for managers to look after their own interests. Therefore, it can be argued that on the one hand, where there is more CG, there is likely to be less innovation and less R&D (Bianchini et al., 2015). On the other hand, it is possible that a corporation may benefit more from R&D, but also using agency theory, management may see it in their own interest to focus on the short-term and to discourage R&D.

The Anglo-American accounting, which is the accounting system used in the US and the UK, is also used in countries, which were formerly colonies of the UK. These former colonies include Australia, Canada and Ireland (Radebaugh et al., 2006). The continental accounting system is used in Germany and Japan and differs from the Anglo-American system in that the continental system is, for the most part, conservative and, while the Anglo-American accounting system is less conservative and more transparent. A major difference underlying the accounting systems is the legal system on which they are built. The Anglo-American system is built on the common law system. In Germany, the legal system, based on Roman law, is one that is highly codified and prescriptive (Radebaugh et al., 2006). Japan, on the other hand, bases its accounting system on a tradition that puts a high priority on providing information to serve the needs of creditors and government taxation requirements (Radebaugh et al., 2006).

However, it is important to point out that the continental countries differ in major ways from those practising the Anglo-American system of accounting. The major differences are the influence of company law and taxation. In Germany, for example, the accounting system is based on a tradition that is concerned with and gives high priority to creditors and tax authorities (Radebaugh et al., 2006). In contrast, in the Anglo-American system, it is the investors and large corporations that receive preferential treatment, as opposed to the creditors and tax authorities in the continental accounting system. The accounting system in Germany is heavily under the influence of company law, with the German legal system codified and involved in prescribing solutions to accounting challenges (Radebaugh et al., 2006). In Japan, as in Germany, it is creditors and tax authorities that have priority treatment (Radebaugh et al., 2006). In contrast, the Anglo-American accounting system operates in countries with the common law tradition, where investors and corporations are a high priority and where the securities markets and their standards, FASB, ASB, and IFRS, influence in varying degrees the accounting practices.

According to Sapra, Subramanian and Subramanian (2014), when anti-takeover laws and regulations are passed at the country-level, they have an effect on CG that could either encourage or hinder innovation or R&D. These authors point out that while there are studies that show that laws and regulation include CG that correlates to economic growth, that there is also another strand of studies that show that innovation results in economic growth in the firm (Sapra et al., 2014). They further point to the development of a theory that holds that external mechanisms, such as anti-takeover laws, interact with the internal mechanisms of a company, such as management incentives, to affect innovation or R&D at the level of the firm (Sapra et al., 2015). In other words, this theory is based on the idea that R&D is encouraged when there are no anti-takeover laws, as managers are provided with an unhindered market for corporate control, but R&D is also encouraged when these antitakeover laws are so severe that they discourage other companies from wanting to takeover control (Sapra et al., 2014).

Therefore, according to Sapra et al. (2014), where there is low takeover pressure and where there is high takeover pressure on companies, managers may be encouraged and see it in their interest to foster R&D, because in either case, managers may not see the likelihood of losing benefits in the short term associated with control of the companies, and over the long term as providing encouragement for fostering R&D investment. It would follow that merely threat of external takeover cannot be seen as an independent factor that determines whether managers would decide to lower R&D since the relation between the degree of innovation and external takeover is U-shaped (Sapra et al., 2014).

But other factors must also be considered in association with other business combination laws, as influencing R&D, for as Sapra et al. (2014) contend, control share acquisition, fair price, business combination, as well as poison pill laws, are all important to young firms, or firms making their first offerings to the public, in determining R&D. Good governance is said to be associated with low levels of innovation. When there are high GC scores associated with low levels of innovation in companies, this would suggest that good managers are very likely maximising shareholders' interests and are protecting their value rather than creating new value through R&D. Therefore, it is suggested that companies that are newly listed firms are more likely to be characterised by an even stronger negative relationship between CG and innovation (Bianchini et al., 2015).

3. THEORETICAL FRAMEWORK

Agency theory is based on the arrangement in modern corporations, where there is a separation of the role of owner and manager (Abdullah & Valentine, 2009). It is assumed that there is a conflict between owners and managers, where managers seek their own self-interest at the expense of the interests of the owners (Abdullah & Valentine, 2009). With this underlying conflict in the relationship between owners and managers, CG plays an important role in striving to address agency problems.

According to Lai and Chen (2014), studies carried out to examine the performance of organisations using agency theory sometimes come out with different findings. Some studies see CG as contributing to outstanding performance of companies, but on the other hand, there are some studies which do not show similar performance (Lai & Chen, 2014). The discrepancy may be based on the different stakeholders whose interests are being highlighted (Lai & Chen, 2014). In other words, using agency theory, the owners and managers are seen as having different interests (Abdullah & Valentine, 2009), and therefore performance from the perspectives of different owners and managers would very likely be assessed differently. Decisions that managers make would, therefore, be influenced by their own interests, except where CG ensures that the interests of the shareholders are given particular attention, or where managers are given incentives to ensure that the interests of the shareholders are protected. It is for this reason that the organisations that have good CG systems in place are organisations that are considered to be the best organisations in which to invest (Honore et al., 2015). For example, according to Chen, Chen and Yang (2017), in a study of sample firms listed on the Taiwan Security Exchange and Taipei Exchange, they investigated the association between the discretion of managers on R&D investments and incentive schemes of CEO compensations. What they discovered was that the firms that were listed on the exchanges also determined both corporate R&D investments and CEO compensations, suggesting that firms were compensating their managers to invest in long-term R&D, something that would not have been seen as advantageous to managers, who likely saw their interests in short-term investments (Chen, Chen & Yang, 2017). Where block owners were also CEOs or owners of their companies, one may expect that they would invest in R&D, if they felt that the investment would promote their interests. However, according to Abdullah and Valentine (2009), managers and owners were seen as having different interests. This would suggest that block owners who were CEOs of their own companies could either be more likely or less likely to engage in innovation.

One study that looked into the influence of CEO power on innovation yielded contradictory results. As Sariol and Abebe (2017) point out, that although scholarly work has shown a link between powerful CEOs and their influence on the corporate strategies use, "neither the CG nor the organizational innovation literatures specifically outline whether and how powerful CEOs influence organizational innovation activities" (p. 38). The possible reason for this could be that there is no specific consistent finding on the link. On the one hand, literature has shown that managers tend to be more interested in short-term investments, if they entertain this, primarily because of the fact that managers are risk-averse (Abdullah & Valentine, 2009). On the other hand, depending on the nature of possible takeover pressure, managers may see it in their interest to invest in R&D (Sapra et al., 2014).

Pointing to the importance of CEOs in organizational innovation in playing a critical role in shaping strategic decisions and in maintaining "an active and aggressive role in strategy formulation", Sariol and Abebe (2017) point out that using behavioural agency theory, there is a difference between those CEOs that are hired outside the firm and that engage in more exploitative innovation.

CEOs from within the firm, who could be block owners or founders of the organization, may tend to engage in more exploratory innovation. In other words, it is possible that those CEOs from within the firm tend to be more conservative and to want to explore innovation that is less risky.

Using agency theory and resource dependence theory, Guldiken and Darendeli (2016) point to the inconclusive nature of studies of the role of monitoring on firms' R&D intensity. It has been established that managers and owners have different interests (Abdullah & Valentine, 2009). Guldiken and Darendeli (2017) point out that it depends on who is doing the monitoring of management. Their study looked at monitoring of management and noted that directors can help bring the interests of top managers and shareholders on the same page through giving advice on R&D investments. With top managers often seeing the reduction in R&D as increasing earnings, there is a tendency for top managers to stay away from risky investments (Guldiken & Darendeli, 2017). The findings of these researchers show a curvilinear relationship between R&D intensity and monitoring of management (Guldiken & Darendeli, 2017). Looking at top managers and CEOs in some companies as also being block owners, the issue of R&D investments could also appear inconsistent, for one the one hand monitoring could show managers as being risk-averse, but on the other hand and at certain levels, the reverse can be shown to be true.

Agency theory, as applied to CG and R&D, is discussed in terms of risk to corporate performance. As agency conflicts arise between owners and managers, it follows that each group would promote different interests. Decisions concerning R&D would be influenced differently by owners and management, and CG, which is tasked with promoting accountability and productivity, would influence how ownership moderates decisions about R&D.

One explanation about investment in R&D involving agency theory holds that manager-shareholder conflicts would arise (Honore et al., 2015). According to this position, shareholders are risk-neutral about their investment, because they could diversify their portfolios, and so over time, their investment in R&D would allow them to be successful. On the other hand, as this position holds, is that managers are risk-adverse, meaning that they cannot afford to bear the risk, since they are working with one company only. Managers, therefore, strive for short-term gain and try to manage their corporations as efficiently as possible. This would allow managers to be productive over the short run. Managers would therefore not be such major promoters of R&D investment since the results of R&D are usually realised in the long term. This being the case, good CG would aim to bring the interests of the managers and shareholders in alignment, so that they can positively promote investment in R&D (Honore et al., 2015). Liao and Lin (2017) point out that "R&D changes undertaken by firms with stronger shareholder rights appear to increase investor confidence that the R&D activities are indeed value creating" and so good governance is seen as instrumental in leading to good performance and growth. Companies from countries that protect shareholder interests, including minority shareholder interests, would, therefore, be seen as good companies to invest in.

Another perspective also using agency theory deals with the issue of information asymmetry between managers and shareholders with shareholders, especially minority shareholders, and short-term institutional investors, not having as much relevant information as managers concerning the long-term effects of R&D on the corporation's performance.

A firm's asymmetric information is the degree to which managers know more about the value of a firm than the shareholders. Corporations that have less CG tend to have more asymmetric information and would tend to be corporations where managers have more control, and where the interests of the managers would be more likely looked after than the interests of the shareholders (Cai et al., 2009).

But these shareholders would have equal information with managers with respect to costs of R&D and how these would affect the short-term earnings of the corporation (Honore et al., 2015). The result of this would be that shareholders would be more likely to put pressure on managers not to engage in R&D since shareholders would see such investment as having a negative impact on performance. Under these circumstances, as CG aims to align managers' decisions to the interests of shareholders, this could lead to a negative impact on R&D (Honore et al., 2015).

4. BLOCK OWNERSHIP AND R&D INTENSITY: LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

The objective is to see how the different types of ownership are implicated in risk-taking. The ownership type discussed is block ownership. Conflicts have often been induced in large publicly owned firms between the interests of stockholders and those of professional managers (Chen et al., 2009; Tran 2014), based on agency theory. These conflicts emerge as stockholders want to maximise the profit of the firm over the long term while also safeguarding their investments. On the other hand, managers want to ensure that they are managing the firm's business according to objectives so as to ensure job security and prestige of the firm, but they also want to increase their personal wealth. These two goals are usually at odds as agency theory explains, because of separation of ownership and control in these firms. It is the difference between the objectives of managers and those of stockholders that lead to conflicts about the strategic direction that the organisation should take (Hall & Leuz, 2006).

Therefore, decision making in strategic direction is usually the area where these conflicts occur, and the area of primary concern is that in terms of R&D (Hall & Leuz, 2006). Stockholders often find that taking a high-risk-high-return strategy is attractive, because of the potential for having a positive effect on firm performance, and allowing for reduced inherent risk through diversified investment portfolios (Lee & O'Neill, 2003). While this approach is an R&D approach that stockholders support, executives are likely to oppose this approach.

The rationale for executives not supporting this approach is that there are often high failure rates with innovative programs, the failure if the program would be credited to them, and these projects do

not yield short-term returns (Lee & O'Neill, 2003). Besides, it is likely that managers could work on long-term projects and not be still with the company to reap the rewards. Therefore, projects that yield short-term results are usually the ones that executives are more likely to support.

Distinguishing between individual block holders and institutional investors is important for individual block holders are not accountable to any particular group of clientele. However, it is often the case that individual large block holders are often directors or officers of the firm (Holderness, 2003). Although there are notable differences between individual block holders and institutional investors, empirical research often ignores the differences, despite potential ramifications (Mehran, 1995; Shleifer & Vishny, 1997). Block holders could also be enterprises when they acquire a minority share of another firm, but this is usually not an accidental occurrence. It is often a well-calculated strategy that precedes a takeover bid or that may anticipate the impending sale of a firm.

However, while these are general principles that affect block holders' influence over the performance of a firm, the particular country in which the firm is located is of great significance. A country's legal system is important in influencing the nature of ownership of a firm and the governance structure used (Mallin et al., 2010). As highlighted by Mallin et al. (2010), countries that have common law legal frameworks also provide greater protection for their minority shareholders than countries where civil law regimes exist.

Shareholders, therefore, take the legal system operating in a country to decide whether the firm they are contemplating investing in is a good choice. Shareholders are motivated to invest in countries where there is better protection of shareholders, for this result in much capital being invested in the country. Countries like Germany with legal systems based on civil law offer less protection for minority shareholders. This leads to large institutional investors or family ownership being the major investors in these firms (Bebchuk, 1999). However, in Germany, it is shown that family ownership is important, but there is some debate over the relationship between ownership and innovation in this country, and studies on the relationship between family ownership and innovation show inconsistent results (Decker & Gunther, 2017). It was further noted that family firms were more likely to invest in innovation than non-family-owned firms, but that their investment was less intensive than non-non-family or other institutional investors (Decker & Gunther, 2017). On the other hand, in situations where a company is family-owned, there is greater emphasis on putting more attention and priority on family agenda, and so innovation would depend to a great extent on whether the investment will lead to greater performance. When there is high percentages of shares in the hands of a family, there is a greater incentive on the part of the family to act "cautiously and deter innovation (Decker & Gunther, 2017, p. 200). Therefore, as these authors point out, "a high degree of family ownership negatively affects a company's innovative output" and so innovation is limited (Decker 7 Gunther, 2017, p. 200). The rationale behind this is that the higher the level of family ownership in a company in Germany, the less likely the company will be in investing in R&D, and therefore the lower R&D intensity. It will also mean that because of the fact that Germany uses a civil law system, minority shareholders are not protected. But in cases where family ownership forms the minority, it can be expected to have little protection, and on the basis of this the family would not be likely to invest heavily in this company (Decker & Gunther, 2017).

The rationale for this trend in countries like Germany is that it is the large investors that are provided adequate protection. Potential minority investors would see countries with legal systems based on the civil law as unattractive since their rights would not be given adequate protection. Therefore, as Honore, Munari and de La Potterie (2015) maintain, it is in the interest of shareholders to promote CG. The rationale here is that when managers are given incentives to engage in R&D, this is in the interest of shareholders, particularly minority investors who through information asymmetry may not know what management is doing (Honore et al., 2015). Agency theory dictates that R&D is a means whereby minority shareholders' interests are being protected.

Another study looking at R&D intensity and block ownership shows that even in emerging economies, intensive R&D can be seen if ownership structures and country characteristics protect the minority investors (Rapp & Udoieva, 2017). Basically, what these researchers discovered was that country-level CG was important because of the degree of protection offered to minority shareholders (Rapp & Udoieva, 2017). Distinguishing between block holder type, namely, institutional block holders and family block holders, Rapp and Udoieva shows that in the case of institutional investors, they tend to favour R&D investment "by active monitoring of management, providing "patient" funds and reducing the probability of CEOs being hastily being fired" (p. 2175). In the case of family block holders, these researchers found that investment intensity was lower among this group, and highly dependent on the level of protection offered by the country-level protection of the shareholder (Rapp & Udoieva, 2017).

The nature of accounting within countries also affects how R&D investment is perceived. According to James and McGuire (2016), R&D investment is seen as a positive, but it also has transaction hazards associated with it, as more R&D investment could reduce returns. Debt is seen as a negative in terms of R&D investment. As James and McGuire (2016) observe, "Debt compared to equity generally restricts flexibility to adapt earnings fluctuations and curbs monitoring to evaluate from investments" (p. 478). Therefore, in some settings, debt is seen as not suitable for R&D investments. However, bank loans or bonds as a source of R&D investment is seen in Japan as a positive feature, considering that there is a strong relational tie between banks and firms in Japan. Therefore, depending on the nature of the economy, investments based on bank loans can be seen as linked to increasing in firm performance in bank-based economies like Japan but linked to decreasing in firm performance in market-based economies. Therefore, R&D intensity would also be affected by the countries in which the R&D is taking place and in countries where protection of minority shareholders are protected.

With family firms becoming a major form of business organizations, understanding how this form of ownership affects decisions to invest in

innovations. One of the points made about the willingness of family firms to engage in innovation involve forms of innovation, with family firms looking at the advantages and disadvantages of the family control. For example, "Evidence indicates that in their pursuit of socio-economic wealth, family firms develop strong concerns about the potential loss of control," so that they may be hesitant to engage in collaborative relationships with other companies, where the company may have to give up some control (Urbinati, Franzo, De Massis & Frattini, 2017, p. 4). In introducing innovation as inter-organizational diffusion, if a family has firm social interactions and commitment to the firm, it is likely that they would readily adopt the innovation; besides, in intra-organizational diffusion, the traits of the family organization would also dictate whether the innovation is readily diffused (Urbinati et al. 2017). But where there is a disruptive innovation, it is very likely that family firms would more readily introduce this innovation, because it has a long-term orientation. As these authors point out, "Consequently, family firms may have a greater propensity to invest in potentially disruptive technologies that may take years or even decades to produce tangible returns" (Urbinati et al., 2017, p. 5). As mentioned earlier, family firms have been seen to represent large block owners.

It would seem that the propensity for block owners, family firms and founders of companies would depend on the nature of the innovation and the R&D intensity that they are prepared to undertake. It would also depend on how the particular group sees the investment as improving their interests and maintaining their control.

However, it is important to point out that ownership by block holders could have either beneficial or detrimental effect on the overall performance of the firm. In terms of the benefits, if block holders have large equity holdings, this would motivate and empower them to monitor the behaviour of management (Jensen, 1993). This would be advantageous to the long-term performance of the firm as these large block holders would ensure that management is not steering the company in a strategic direction that does not maximise the performance of the firm. This leads us to propose the following hypothesis:

H1: There is no statistically significant relationship between the block ownership and R&D intensity.

5. RESEARCH DESIGN

5.1. Data collection procedure

This study uses the OECD CG Principles (2004) to investigate the quality of CG practices in the companies used in the sample. CG data are obtained manually from annual reports. Annual reports are the main source of information for this study, and the assumption is made that the internal CG variables presented are reliable. The rationale for this is that the information provided by management to the shareholders must be accurate. Therefore, 200 annual reports for the companies provide the majority of data.

The annual reports were obtained from the Perfect Information Database and companies' website. When annual reports were not readily available, and when data was not available in the Perfect Information Database, the company was contacted directly through a phone call or email, or through the companies' website.

The R&D expenditure data obtained from the annual reports of the companies were listed in the sample. The data were obtained for the years between 2010 and 2014, and additional information obtained from databases, such as DataStream. These data would come primarily from the item "other cash payment related to operating activities" or similar identification in the notes to the financial statement in the annual reports.

The firm-level data include firm size, measured by the log of total assets, sales growth, audit committee number, CG committee number and leverage, as well as year dummies and country dummies.

The country-level data include stock market capitalisation, corruption index, inflation, GDP per capita, Hofstede's culture variable (masculinity and power distance), population and exchange rate. These include the country's legal system, whether common law or civil law. Countries with common law systems tend to have better protection for shareholders than countries with civil law systems. The accounting system used, whether based on international or local accounting standards, is also important, as different systems have different reporting requirements and notions of acceptable practice. The CG system used, whether Anglo-American or Continental-European, also has different requirements and different protections for shareholders. A country's GDP gives an indication of the prosperity and size of the economy and the level of investment in the economy. The level of corruption in the country, its inflation rate and the treatment of shareholders' rights are all factors that are significant to investors, affecting the amount of caution that an investor should exercise when investing in a particular economy. Population size, culture and cultural variables are important factors that shed light on an economy. This information is accessed from the World Bank website and other global sources of financial information on countries, as well as from the World Federation of Exchanges. Hofstede's cultural variables also help identify the manner in which companies in particular countries approach business dealings.

5.2. Sample

The sample used in the larger study consisted of 200 companies drawn from the Anglo American tradition, including companies from the five countries of Australia, Canada, Ireland, UK and US, and from the Continental European tradition, including companies from the 5 countries of France, Germany, Italy, Japan and Spain. Ten industries, basic materials, consumer goods, consumer services, financials, healthcare, industrials, oil and gas, technology, telecommunications, and utilities, were represented among these companies. The firms that were used in this study on R&D were drawn from the original sample and included only those companies that had R&D. The period that was focused on was from 2010 to 2014, resulting in 1,000 firm-year observations. There were a total of 122 companies that had R&D and 78 did not have R&D. Japan had the highest number of companies, 18, with R&D and the lowest, 2, without R&D. The companies in these lists would be compared to see what aspects of CG

they possess or do not possess, and factors that may influence R&D. Also, these countries would be compared in terms of country-level characteristics, to see what characteristics are most associated with R&D investment and those that are most associated with its absence. The sample firms that were used in this paper were companies listed in the World's Biggest Public Companies listing, FORBES Global 2000 Leading Companies (Forbes, 2000).

The reason for selecting these companies from both the Anglo-American and the Continental European traditions, from the particular industries mentioned above, and covering the period from 2010 to 2014 is that these are important factors in highlight whether the process chosen can be replicated with the same results at different periods. The time period is crucial because it covers a period of the financial crisis. The fact that companies are drawn from different traditions shows that these companies have different practices because of differences in laws, accounting and tax practices and country characteristics. The fact that different industries are used is also important because of the characteristics, importance, and performance of these industries in their respective economies.

A study of CG mechanisms also reveals how these mechanisms affect the financial characteristics of the firms. Therefore, the information that was used in this study examined how block ownership had implications for R&D intensity and how this affected financial performance of the firms involved.

An inclusion criterion of the companies taking part in the study was that they had experienced the global financial crisis, and data was available for a period after this event. An exclusion criterion was that any firms that had independent variables missing that were necessary for the analysis would be eliminated from the sample. Utility firms and firms from the financial industry were also excluded, as these industries have a different capital structure and are heavily regulated, which is likely to impact their governance structures differently than firms in other industries (Yermack, 1996; Weir et al., 2002; Cheng, 2008).

5.3. Variables measurement and regression model

Table 1 summarises all variables used in conducting the empirical study. The measurement of ownership structure is carried out on the basis of block ownership (BO), which is measured by the ratio of total number of ordinary shares held by block shareholders with at least 5%, to the total number of ordinary shares

The difference in ownership structure is seen as important to costs. For example, Anderson, Mansi and Reeb (2003) point out that costs are affected by ownership structure. The rationale for this is that when there is much manager-shareholder conflict, there is a greater need for surveillance, which increases costs (Anderson et al., 2003). In founding family ownership situations, agency costs are lower, as the interests of managers and owners become more aligned (Anderson et al., 2003). Anderson et al. (2003) find that there were fewer conflicts between those who owned the companies and those who were lenders to the company. This may be due to the fact that there was a significant investment of family resources in the companies (Anderson et al., 2003).

Lin and Shen (2015) note that ownership of family companies tends to have the opportunity to influence their credit ratings because they have the possibility of showing greater earnings. However, as these researchers point out, while a family firm may be able to manipulate earnings, if the family idiosyncratic risk is observed, this would lessen the company's credit rating (Lin & Shen, 2015).

Table 1. Variables definition and measurement

CG variable (Ownership Structure)	
BO	The ratio of total number of ordinary shares held by block shareholders with at least 5%, to the total number of
Risk-Taking	
R&D/Sa	Natural logarithm of the ratio of R&D expenditure to sales
Control Variables	
SG	The ratio of current year's sales minus previous year's sales, all divided by previous year's sales
FS	Natural logarithm of the book value of total assets
AC	Total number of Audit Committee
CGC	Total number of CG Committee
LVG	The ratio of total debt to total assets
CGY	The rise in the stock price divided by the original price of the security
SMC	The market value of the shares outstanding
CORR	The misuse of public power for private benefit
INF	The rate at which the general level of prices for goods and services is rising
GDPC	Gross domestic product (GDP) divided by number of people in the country
POP	People living in a country
POWD	The degree to which the less powerful members of a society accept and expect that power is distributed unequally
ANGL	A dummy variable for Anglo American countries (1), Continental countries (0)
CON	A dummy variable for each country: UK (DU UK). US (DU US)
Y	A dummy variable for each year of the ten years from 2010-2014, 2010 (DU 10) ... 2014 (DU14)

Control variables that were thought to be able to influence Risk-Taking were incorporated. For example, firm size was shown as a logarithm of the total assets in each year. The country information would be obtained from global sources, such as country statistics, and company information would be obtained from company websites as well as from annual reports. A valuation model and panel data from companies in the United States, Ireland, UK, Australia, Canada, France, Germany, Spain, Italy, and Japan will be used. This study set out to examine the how Block ownership influence Risk-Taking measured by R&D intensity and how country characteristics moderate the relationship between Risk-Taking and firm value.

Ordinary least squares (OLS) regression would be used to test our hypothesis. The dependent variable in these regressions is the Risk-Taking. Since it may be influenced by past performance, growth, ownership characteristics and CG characteristics, among others, all of these variables are included in the regression analysis to control for confounding factors (Han et al., 2015). A year and industry dummies would be used in all regressions in order to control for the year and the industry. Based on the above hypothesis, the following model is proposed and with the aim to be tested using the ordinary least square (OLS):

$$RT_{it} = \alpha_0 + \beta_1 BO_{it} + \sum_{i=1}^{n} \beta_i FCONTROLS_{it} + \sum_{i=1}^{n} \beta_i CCONTROLS_{it} + \varepsilon_{it} \quad (1)$$

6. EMPIRICAL FINDINGS

6.1. Descriptive analysis and bivariate correlations

The block ownership figure is derived by taking the total number of institutional shares that are held by institutional shareholders with at least 5 percent of the total number of ordinary shares. Panel A of Table 2 reports the descriptive analysis of data relating to the independent variable. For example, block ownership (BO) is between 5% and 100% with a mean of 43.5%. In other words, only a medium percentage of institutional shareholders qualify as block owners, indicating that block ownership plays part in institutional ownership. Panel B of Table 2 reports the R&D/Sales having a mean of 4.5% with a standard deviation of .9.6% and with a minimum of 0.0029% and a maximum of 109.44%. Panel C of Table 2 presents the control variables, which are considered to have an influence on risk-taking among block owners. These variables were therefore incorporated into the figures in order to give a more accurate account of their influence on risk-taking. For example, sales growth (SG) reveals the mean of 7.52% and standard deviation of 17.72%. The minimum value is -43.14% and the maximum is 238.65%. What this shows is that there is a wide difference in sales growth between companies.

Firm Size (FS), which is derived as the logarithm of the book value of total assets, has a mean value of 4.2724, ranging from 2.4641 to 5.8757. The number of audit committees (AC NO) is seen as having a range from 2 to 8. The number of CG committees (CGC NO) is between 1 and 9.

Table 2. Summary descriptive statistics of the independent and control variables

Variables	*Mean*	*Median*	*Std, Dev.*	*Min*	*Max*
Panel A: Independent (Corporate governance (CG)/ownership characteristics) variable					
BO (%)	.435	.4552	.245	.05044	1.0
Panel B:Dependent Variable (Risk-Taking)					
R&D/Sales	.045	.0235	.096	.000029	1.09446
Panel C: Control Variables					
SG	.0752	.0434	.1772	-.4314	2.3865
FS	4.2724	4.2116	.6170	2.4641	5.8757
AC NO	4.28	4.00	1.114	2	8
CGC NO	3.75	4.00	1.328	1	9
SMC	6.2165	6.2505	.5672	4.7808	7.4204
CORR IDX	1.848	1.869	.088	1.59	1.94
INFL	-1.611	-1.69	.606	-2.69	0.0
POP	82,042,575.4	62,051,376	83,685,858.43	4,560,155	318,857,056
LVG	.6043	.6151	.1762	.0257	1.2544
ANG	.5	.5	.5	0	1
GDPC	4.646	4.66	.086	4.462	4.83
POWD	1.63	1.59	.113	1.44	1.83

Notes: Variables are defined as follows: Block Ownership (BO), Sales Growth (SG), Firm Size (FS), Audit Committee No. (AC), Corporate Governance Committee No. (CGC NO), Stock Market Capitalisation (SMC), Corruption Index (CORR IDX), Inflation (INFL), Population (POP), Leverage (LVG), Anglo American (ANG), GDP per Capita (GDPC), Power Distance (POWER D)

The presence of audit committees and CG committees are important in limiting risk-taking since the committees are responsible for ensuring that good governance is achieved, with agency theory showing a natural conflict between owners and managers. Both committees are looking after the interests of all the shareholders, while the block owners would be interested in looking after their own short-term goals. Therefore, it is expected that both committees, as responsible for monitoring the work of the managers, would see to it that the block owners do not take advantage of the situation. Corruption Index (CORR IDX) ranges from 1.59 to 1.94 with a mean of 1.848. In terms of Power Distance (POWD), the mean value is 1.63 and the median value is 1.59, with the standard deviation being only .113. The minimum is .144 and the maximum value is 1.83. Thus, our findings suggest that our sample has been carefully chosen and thereby minimizing the possibility of being bias in selecting the sample.

Table 3 shows results of correlation matrices for these study variables in order to examine multicollinearities among variables. The coefficients of Pearson's and Spearman's are used as a robustness check, the direction and the magnitude of coefficients shows in correlation matrices are almost the same, indicating non-existence of non-normality problems. Additionally, the coefficient of both Pearson's and Spearman's shows that the level of correlation among variables used is relatively weak, indicating non-existence of serious multicollinearity problems. Moreover, the values of Variance Inflation Factor (VIF) reported in Table 4, less than 10, indicating that there are no serious multicollinearity problems (Field, 2009). The presence of heteroscedasticity was also tested using Breusch-Pagan test and the p-value is 0.166,

indicating that heteroscedasticity is not present in this model. It can also be noted from Table 3 that there is a negative association between Block ownership and control variables POP, LVG & POWD, and the positive association between Block ownership and control variables FS, AC NO, CGC, SMC, CORR IDX, INFL, ANG, GDPC and IND.

Table 3. Pearson's and Spearman's correlation matrices of the variables

Variable	*BO*	*SG*	*FS*	*AC NO*	*CGC NO*	*SMC*	*CORR IDX*	*INFL*	*POP*	*LVG*	*ANG*	*GDPC*	*POWD*	*CGY*	*MAS*
BO	1	.031	-.011	.020	.058**	.054*	.114***	-.010	.031	-.064**	.207***	.134***	-.108***	.024	.005
SG	-.015	1	-110***	-.102***	-.044	-.076**	.016	.033	-.026	-.090***	.035	.013	-.063*	-.011	-.030
FS	.061*	-.116***	1	.320***	.224***	.320***	.014	.014	-.031	.214***	-.148***	-.046	.211***	.052	.018
AC NO	.096***	-.101***	.303***	1	.156***	.336***	.319***	.063**	.182***	.116***	.058	.112***	-.020	-.036	.087***
CGC	.064**	-.043	.227***	.156***	1	.102***	.296***	-.132***	-.092***	.045	.352***	.323***	-.370***	-.037	-.081***
SMC	.232***	-.155***	.269***	.393***	.086***	1	.292***	.030	.611***	-.002	.097***	.113***	.239***	.029	.038
CORR IDX	.199***	.199***	-.060*	.211***	.311***	.248***	1	.141***	-.241***	-.169***	.495***	.614***	-.412***	.025	.019
INFL	.053*	.053*	-.015	.014	-.058*	.058*	.184***	1	.003	-.023	-.087***	-.057*	.104***	.115***	.237***
POP	-.050	-.107***	.239***	.182***	-.097***	.536***	-.305***	-.079**	1	.154***	-.416***	-.486***	.514***	.014	-.110***
LVG	-.081**	-.101***	.196***	.108***	.022	-.043	-.198***	-.036	.160***	1	-.150***	-.216***	.079**	.023	-.039
ANG	.264***	.056*	-.147***	.058*	.352***	.176***	.508***	.103***	-.433***	-.181***	1	.680***	-.728***	-.031	.047
GDPC	.228***	.055*	-.068**	.107***	.333***	.154***	.668***	-.041	-.495***	-.227***	.719***	1	-.581***	.001	.213***
POWD	-.128***	-.088***	.194***	-.026	-.350***	.178***	-.524***	.002	.501***	.063**	-.629***	-.512***	1	.029	-.349***
CGY	.036	.114***	.038	.115***	.037	.104***	.106***	-.014	-.014	-.133***	.132***	.165***	-.099***	1	.087***
MAS	.009	-.020	-.024	-.008	-.139***	-.014	-.014	.078**	-.089***	.028	-.070**	-.014	-.354***	.058*	1

*Notes: the upper right half of the table shows Pearson's parametric correlation coefficients, whereas the bottom left half of the table contains Spearman's non-parametric correlation coefficients. **, and * denote correlation is significant at the 1%, and 5% level, respectively (two-tailed tests). Variables are defined as follows: Block Ownership (BO), Sales Growth (SG), Firm Size (FS), Audit Committee No. (AC), Corporate Governance Committee No. (CGC NO), Stock Market Capitalisation (SMC), Corruption Index (CORR IDX), Inflation (INFL), Population (POP), Leverage (LVG), Anglo American (ANG), GDP per Capita (GDPC), Power Distance (POWER D)*

6.2. Regression analysis

Table 4 represents the findings of the OLS analysis of block ownership on risk-taking. It shows a statistically significant and negative relationship between block ownership and risk-taking measured by R&D/Sales, thereby providing empirical support for H1. This negative relationship suggests that an increase in block ownership will be accompanied by a decrease in risk-taking. This is also consistent with the findings of Holderness (2003), as block owners could have special benefits that are not available to other shareholders. This could happen as block owners could have special control over management, and they can use their position for firm takeover (Barclay and Holderness, 1989). Also, block owners could be directors of the firm (Holderness, 2003). Block owners have the potential to be beneficial to firms, as they are able to require more monitoring of the firm as they seek more information about their investments (Jensen, 1993). Besides, it could also be the case that national legal systems influence the kinds of ownership rights that firms within a country could hold (Mallin et al., 2010). Therefore, agency theory can be used to discuss the relationship between block ownership and risk-taking as measured by R&D/Sales.

Table 4. OLS regression results of block ownership on R&D intensity (dependent variable)

	All firm years	*2010*	*2011*	*2012*	*2013*	*2014*	*VIF*
Adjusted R^2	.073	.170	.189	.063	.188	.219	-
Standard Error	.7528	.706	.749	.779	.796	.749	-
Durbin-Watson	.520	2.056	2.242	2.196	2.205	1.83	-
F-Value	3.417***	1.335	1.558*	1.518	1.564*	1.757**	-
No. of Observations	611	121	124	124	125	117	-
Constant	-4.449***	-27.109***	-3.772***	-3.212***	.398	2.066**	-
Independent Variables							
Block Ownership	-3.659***	-1.693*	-3.772**	-2.146**	-1.707*	-.983	1.057
Control Variables							
Firm Size	1.280	-.153	.063	.536	.774	-.99	2.586
Sales Growth	1.153	.917	.479	.070	.580	.839	1.093
Audit Committee No.	-3.517***	-1.345	-2.065***	-2.198**	-2.504**	-.437	1.467
CG Committee No.	1.883*	1.289	.536	.536	.642	1.262	1.309
Leverage	-1.788*	-.545	-1.123	-.902	-1.016	-.642	1.403
Capital Gain Yield	.133	.355	.467	.380	-.533	.888	3.510
Stock Market Capitalisation	-.419	.038	.981	-.665	1.957*	2.102**	2.805
Corruption Index	.285	-.785	2.172**	2.641**	.783	-2.129**	1.297
Inflation	-1.820*	.878	-3.053***	-2.906***	-2.693***	-2.574**	1.254
GDP Per Capita	2.906***	2.449**	-.849	-1.938*	-.932	-1.255	1.311
Population	1.700*	1.681*	-.193	-.202	-1.248	-1.854*	1.541
Power Distance	1.289	-.362	2.882***	2.851***	-1.285	-2.118*	1.560
Masculinity	2.216**	-.946	3.009***	2.903***	-.498	-2.204**	6.021
Anglo American	-1.986**	-.388	2.890***	2.869***	-1.764*	1.872*	6.154
2010	1.331	-	-	-	-	-	0.322
2011	-.007	-	-	-	-	-	0.507
2012	.450	-	-	-	-	-	0.651
2014	-.246	-	-	-	-	-	0.025

*Notes: coefficients are in front of parenthesis. ***, ** and * denote p-value is significant at the 1%, 5% and 10% level, respectively. Also, the year 2013 is excluded from the regression analyses. It is used as the base year, respectively, for purposes of comparison.*

7. FURTHER ANALYSIS

To confirm the robustness of the obtained findings, additional analyses have been carried out. To test for the existence of any possible endogeneity, this study uses fixed effect regression model to address possible firm-level heterogeneity. Therefore, the model to be assessed is identified as:

$$RT_{it} = \alpha_0 + \beta_1 BO_{it} + \sum_{i=1}^{n} \beta_i FCONTROLS_{it} + \sum_{i=1}^{n} \beta_i CCONTROLS_{it} + \delta_{it} + \varepsilon_{it} \quad (2)$$

The results for model 1 are reported in Table 5 and the results are mostly similar to those in Table4. The findings are robust to endogeneity problems that may arise from omitted factors.

Table 5. OLS regression results of fixed effect of block ownership on R&D intensity (dependent variable)

	Fixed Effect	*2-Stage Least Squares*	*Lagged-Effect*
Adjusted R^2	.970	.162	.063
Standard Error	.136	.724	.770
Durbin-Watson	1.787	.595	.602
F-Value	126.463(.000)***	4.902(.000)***	2.83(.000)***
No. of Observations	504	504	490
Constant	-2.155(.032)**	-3.859(.000)***	-.002(.125)
Independent Variable			
Block Ownership	-.388(.698)	-3.205(.001)***	-.064(.852)
Control Variables			
Firm Size	2.284(.023)**	2.704(.007)***	1.438(.474)
Sales Growth	2.704(.007)***	2.034(.043)**	.942(.329)
Audit Committee No.	-1.299(.195)	-.886(.376)	-3.339(.008)***
Corporate Governance Committee No.	.673(.501)	2.761(.006)***	.704(.519)
Leverage	-2.741(.006)***	-1.454(.146)	-2.021(.015)**
Capital Gain Yield	.211(.833)	4.586(.000)***	.005(.821)
Stock Market Capitalisation	-1.232(.219)	-.285(.776)	-1.84(.061)*
Corruption Index	.072(.943)	1.424(.155)	1.041(.994)
Inflation	-.146(.884)	-1.839(.067)*	-3.635(.000)***
GDP Per Capita	.343(.732)	.182(.856)	.195(.351)
Population	1.785(.075)*	.825(.410)	.431(.315)
Power Distance	-	1.227(.220)	1.562(.171)
Masculinity	-	2.234(.026)**	.206(.971)
Anglo American	-	.825(.410)	.863(.638)
2010	-2.811(.005)***	-1.216(.224)	-
2011	-1.970(.050)**	-1.285(.199)	-2.086(.031)**
2012	-.964(.336)	-.928(.354)	-1.429(.980)
2014	-1.538(.125)	-.819(.413)	-.134(.657)

The two-stage least squares test is used with the OLS regression in order to correlate the errors that may occur in the dependent variables with the independent variable and to fitting panel data model. The results stay almost the same as the results provided previously in Table 4, suggesting that our results are fairly robust to possible endogeneity issues.

8. CONCLUSIONS

Although several of previous studies examined the association among block ownership on performance, studies examining how and why ownership mechanisms impact risk-taking are rare. Therefore, this paper investigates the relationship between block ownership and risk-taking that is measured by R&D intensity, as the natural logarithm of the ratio of R&D expenditure to sales (R&D/Sales). The findings indicate that there is a strong negative relationship between block ownership and risk-taking as measured by the intensity of R&D in the companies.

In addition, a comparison of the Anglo American countries and the European countries reveal that both sets of countries show a negative relationship between Block ownership and risk-taking, but that this relationship is shown to be much smaller in the Anglo American countries than in the Continental European countries. The rationale for this seems to be that in the Anglo American countries, the legal system in the Anglo American system has greater protection through greater CG and therefore allowing for less risk taking.

The findings reveal that block ownership in effect gives such owners control over management, and can, therefore, be seen as having a negative impact on risk-taking. Block ownership in the Anglo-American system, where the common law legal system is used, protects the rights of minority shareholders, so that large block holders are seen as having a less negative impact on risk-taking. In the Continental European system, which is based on civil law, large block holders have the power to influence management to take strategies that run counter to the wellbeing of the firm. Firms with more than 5% block ownership engage in higher risk-taking than other firms. In other words, block holders in the civil law tradition were found to have a tendency to promote more risk-taking. These findings are in keeping with previous research showing that block holders have the power to gain privileges and benefits that small shareholders do not (Barclay & Holderness, 1989), but that some companies repurchase these shares at a price above the market value to prevent proxy fights. Therefore, risk-taking is often negatively related to block holders, particularly in countries which are based on civil law (Bebchuk, 1999). These countries tend to have higher risk-taking than common law countries.

However, there are limitations to this study which should be taken into consideration. Despite the fact that efforts were made to make the sample as representative as possible, the sample was consisting of only 200 companies, which were chosen from 10 of the 34 OECD member countries. With the companies drawn from several industries, this meant that there were not many companies from the same industry (Haniffa & Cooke, 2002). Another limitation is that although several industries were used, two important sectors of the respective economies were excluded, namely, the utilities and financial sectors. The rationale for omitting these sectors is that they were deemed too highly regulated, with capital structures that were often unique to these industries (Haniffa & Cooke, 2002). It is noteworthy that during the same period there were several governance reviews and reports created and published, which could also have influenced the outcome of the study.

However, despite these limitations, several implications can be drawn from this study with respect to the use of the OECD Principles of Governance and its applications to the various countries. Decision and policy makers in both traditions are able to see the findings of this study and observe how they differ from other studies. Policymakers related to the use of corporate mechanisms are able to observe how well they fared in this study, and they could also learn from how other decision and policy makers operate in other countries. Knowing the advantages and disadvantages of certain corporate mechanisms could be instructional and could help countries improve their CG structures. Developing countries can observe what more developed countries are doing, and on this basis develop their CG structures to facilitate financial performance among their firms. Similarly, firm decision and policymakers from both traditions are able to observe what works well for them and for others. By imitating measures used by some firms, individual firms could improve their performance.

Another implication is that it is possible that some firms would adopt voluntary compliance regimes based on what they observe from other firms. In some studies by Aguilera and Cuervo-Cazurra (2009), some firms in countries that have adopted the U.K. voluntary compliance style demonstrated that they adopted the 'comply or explain' regime. Therefore, Aguilera and Cuervo-Cazurra (2009) point out that although there has been criticism that the voluntary nature of some corporate codes is limited in improving CG practices, in reality, firms voluntarily adopting these codes helps promote CG. One of the implications of this study is that some firms may be motivated to voluntarily adopt practices that they see as important for improving firm performance. These firms would very likely be motivated to undertake more thorough implementation of CG mechanisms.

Attracting new investors is one of the things that this study could encourage. This study has shown how improving CG will reduce risk, and how with reduced risk firms can improve their financial performance. An implication of this study is to show countries how they could use this scenario to promote more investment in their firms. This study could also provide a guideline showing countries how they could reduce risk, thereby encouraging more investors to locate in them. By showing that good governance could reduce the cost of capital, governments and firms could also appeal to investors.

There are implications for different governments. By looking at the findings, it is possible that some governments may think of updating their firms' CG mechanisms. More emphasis on CG mechanisms could help nations make an investment in their firms more attractive. For example, by improving the overall perception of firms' financial performance in their countries, governments could help encourage more investors to consider them. The implication here is that governments must keep updating their CG mechanisms.

Previous studies have looked at the level of compliance among firms. However, the contribution that this study makes is augmented by the fact that it fills this gap in the existing literature by offering, for the first time, direct evidence on the levels of compliance with CG among firms in different countries based on their traditions, cultures, legal systems and practices. Secondly, previous studies have made looked at firm performance, but this study has made a notable contribution by dealing with firm performance as measured by risk-taking measured by R&D intensity. Thirdly, this study would be of tremendous importance to organisational leaders as it can be recognised as making the notable contribution to the field.

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