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Chapter 1

Firm Value

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Additional information is available at the end of the chapter

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Abstract

The chapter explains the meaning of firms from the perspective of economic researchers in the past to the views of current dates. Traditional model of a firm's value is linked firmly with shareholders' value. This traditional view is used in finance and in business for many years. To enhance a firms' value, we need to maximize shareholders' value. According to this view, any activities in firms can increase the value of firms if it increases the value of the Shareholders. However, traditional concept of shareholders' value as the explanation to firms' value is challenged by a group of researchers. This group believes that value of firms should not be based on just shareholders but should include all groups of stakeholders. After giving some ideas on the meaning of firm, the corporate sustainability value of firm in terms of economics and finance is explained.

Keywords: sustainability, performance, stakeholders, firms value

1. Overview of the chapter

In what follows, the author attempts to evaluate the concept of the theory of firm value as it has passed through its interpretive history. For example, the earlier stage of the concept maintained the interpretation that a firm is merely a legal device through which the private business transactions of individuals are maintained and operated. Such a concept has dominated business, finance, and economic understanding about a firm's theory for a long time. Furthermore, as we pass through time, many views emerge from business and finance academicians who compete to explain what should be the meaning of the term "firm." This chapter is designed to outline to readers the evolution of the terms *firm* and *firm value* through the lens of academic study in business and finance (or economics perhaps?) through prior literature surrounding the issues. The essential point of the chapter is simple: to provide an

answer to the fundamental question of "what is the meaning of the term 'firm' and what do we know about the value of a firm?" Along with the detailed explanation, the author points to the central theme in major theories and concepts so that the reader can follow the theories and concepts when they are applied to business. Also, some important empirical papers are discussed throughout the chapter.

The structure of this chapter is as follows. First, the author discusses the relevant concepts as they are presented to us and are used from the past up until current usage. What we have learnt after using this traditional theory for half a century is that the simple focus on single stakeholders creates some important problems that require attention with regard to the drawbacks of the theories in the past. In the second part, the author illustrates the major problems arising from these traditional viewpoints of *firm value theory* and how the modern system of corporate finance can help us to solve this problem. The third part introduces the reader to a theory that challenges long-time traditional use of shareholders' maximization theory (i.e., a theory whose main focus is only on a single group of stakeholders known as *shareholders,*); the more recent theory however focuses on a multifarious-group of stakeholders and is known as *stakeholders theory*. The author shows that stakeholders' theory has been transformed into many versions of the current conceptualization-of-firm theory, such as sustainability concepts, triple bottom lines, or the CSR theory.

2. The traditional conceptualization of a "firm"

In the early part of the nineteenth century, business units were owned by individuals or small groups of individuals. In this typical business unit, a firm was managed by an individual or assigned individuals who were appointed by an individual owner [9]. The problems of such private firms included the limitation in size and wealth of firm. This typical type of firm was owned and operated by a small group of people who had limited resources to expand and to manage the firm in the century in which business was becoming bigger and better [9]. More importantly, the continuity of typical single-owners or single-family firms was constrained by the geographical area where the owners or the groups of owners existed. This constraint curbed the size and wealth of a firm in that period.

The first paradigm shift in the conceptualization of a "firm" leads to the new architecture of "corporation," through which its structure is designed to collect the wealth of individuals under a unified management and control system. This feature of corporations is known as "the separation of ownership and control" [9, 21, 53] implying the mechanism wherein owners of a firm can be replaced without disturbing the control or management of a firm. The continuity of a firm is no longer contingent on the owner, or upon the geographical area of its founder. Moreover, this type of firm can obtain a huge amount of funds from its many and various shareholders, by collecting a small amount money from them. More importantly, a new empire or a huge conglomerate business has the possibility of being created through the activities of mergers and acquisitions, through which the activities require significantly large amount of money [8].

Back in the 1960s, many researchers whose works related to the theory of firm or firm value cited the classic paper of Ronald Coase when they wrote about firm theory. Coase [21] was the Nobel Prize laureate in politics and economics and held the view that firms can be composed of many "nexus of contracts" or "nexus of parties" and, when there is a conflict of "property rights," parties within the nexus can bargain or negotiate terms that are more beneficial among them. In the nexus, the "Pareto efficient" is obtained by bargaining among the nexus. Coase's theorem is therefore known as property right theory. The concept of a firm derived from Coase's explanation is the springboard for many subsequent business and finance theories, including the classic paper, *Theory of the firm: Managerial behavior, agency costs and ownership structure,* of Jensen and Meckling [53].

Property right theory was defined as "separation of ownership and control" by Jensen and Meckling [53] and signified the separation of ownership and control that underlines the main nexus of firms into two groups. One is the group who has the property rights as the "owners" of firms. The other one is the section of the management who has the right to operate or "control" firms. The relationship between the groups is called the principal-agent relationship. Nexuses have many types of this kind of relationship, that is, the owners (principal) and management (agent), the shareholders and bondholders, or the minority shareholders and owners-managers.

In the standard contractual concept, shareholders offer money as capital to a firm in return for residual claims on returns of capital after money is paid to other groups. The attribute of the residual claim of shareholders is used to distinguish them from others. With this standard concept, it is clear that the shareholders are the group who provide capital to contribute to the overall operation of the firm. Even other groups, such as bondholders or preferred stockholders, can also provide some forms of capital to the firm, but they have no right to directly or indirectly control a firm. The standard argument holds that shareholders, with only residual claims, would bargain for corporate control in return for their residual risk bearers on the claims. Equipped with the power of corporate control, shareholders can assign control to their agents who will work in the firm so as to maximize benefit for them in returns. Clearly, this side of the theory is known as "shareholders theory" [11]. Viewed from the eyes of this separation, modern forms of firms have a lot of advantages as explained earlier, such as continuity, ample resources to expand the boundaries of a firm, and the independence of a firm's site location and owners' locations. Firm theory enjoys these advantages and applies them to the expansion of a given firm to harvest an industrial revolution. The theory also encourages owners to think in more revolutionary ways about their firms.

However, Jensen and Meckling [53] did not just describe the meaning of the term "firm" according to their own view. The great beauty of their work is in showing how we can exploit the fruitful nature of the concept of the "separation of ownership and control" as a magnifier to examine the peripheral events around a firm. They manage to fit the concepts very well with the overall business environment. Furthermore, the concepts can be used as heuristic tools for owners, managers, or any stakeholders to understand the causes and effects in relation to the value of firms and to understand the appropriate solutions for problems related to the principal-agent relationship. Problems arising from this relationship are known as agency

problems (see [30, 53]). The problems propose that whenever we have this relationship in the environment (not just in business), we are surrounded by the agency problem. Smith and Zsidisin [73, 74] used the agency framework to understand the trade-off involved in the selection of various approaches of student evaluation. The agency problem further proposes that it is not beyond reasonable expectation that both parties in the relationship have their own interests and incentives in order to maximize their own interests and wealth. It is this conflict of interest which is the root of the agency problem.

Traditional views of firms and the view of Jensen and Meckling or Coase still focus on the shareholders as the prime nexus or the most important group in the firm since they have the highest bargaining power in the firms as described earlier. To maximize the value of a firm, agents or managers need to put all resources into maximizing the value of the principal for the shareholders. Theoretically and according to the expected conflict of interest that might occur, the misalignment from the maximization of the value of a firm is generally found and hence reduces a firm's value. Managers can allocate firm resources to benefit themselves in many ways such as to use a luxurious office or use expensive car(s) or other perks for their management position.

In the Enron case and in many other such cases, it was found that managers attempted to adjust financial statements for their own benefit. One important issue in accounting research is the extent to which managers alter reports to benefit themselves [7]. Empirical evidence shows that income-increasing earning management is more pervasive than income-decreasing earning management. Also, there is evidence that managers have incentives to increase income to hide any deterioration of performance [7]. Jensen and Meckling call the activities managers use to maximize their own wealth as "shirk" or "perquisite" or "perk," through which these behaviors can directly and indirectly reduce a firm's value. On the other side, (the point of view of the agent-principle relationship), any set of activities that reduce shirk or perk actually enhance the value of the firm. The demand for maximization of a firm's value or of shareholders' value calls for an effective set of activities that can be solved or can mitigate the agency problem.

2.1. Corporate governance

If the "shirk" or "perk" is not beyond the expectations or the principles of owners of the firm, they will formulate a set of mechanisms to control the deviation from shareholders' wealth maximization. These take the form of "auditing" activities and monitoring activities. The auditing method is the inspection of managers through the prism of financial management and has been used in business and accounting for a long time. However, the regular occurrence of fraudulent management in many firms demonstrates to us that the effectiveness of auditing activities alone cannot counter unethical business practices. Auditing is one set of activities designed by incumbent owners to monitor the behavior of managers. Issues of corruption, the rule of law, and legal enforcement demand a more effective set of monitoring activities, which have come to be known as corporate governance [68].

Corporate governance is defined as "a set of mechanisms through which outsider investors protect themselves against expropriation by the insiders." Governance implementation can

be achieved by external mechanism (the market for corporate control) and internal mechanism. The supreme objectives of corporate governance are set to ensure that shareholders as financiers get a return on their financial investment [71]. Corporate governance involves issues of practices to solve the complex issues among contract participants (social, employees, debt holders, and minority shareholders). However, the ultimate objective of corporate governance is still to focus on the wealth of the residual claimants who possess the highest bargaining power in the firm. Empirical research on the issues of corporate governance around the word have major research questions, especially with regard to their effectiveness over firm performance, which are directly linked to shareholders [5, 59, 66, 68].

Renders and Gaeremynck [66] used a sample from 14 European countries and showed that governance within a high-quality disclosure environment leads to a higher firm value. Saona and Martin [68] used a sample from Latin American firms and assessed whether within country changes in governance and changes in ownership concentration can predict a change in the value of firms. The results are in contrast to expectations, that is in immature financial markets, (as found in Latin America), firms take advantage of both the asymmetries of information and the multiple frictions in order to produce inflated valuations. These results correlate with and confirm the expropriation of minority shareholders.

Further, as the financial system develops, firm values drop. Research in this field attempts to associate various factors with monitoring ability and test them on the relationship with firm value. Mayer [59] discussed the interaction between competition, ownership structure governance, and performance. The author shows that corporate systems across countries are different and relate to ownership and the control of a firm (these variables are explained in the next section). Ownership concentration is higher in continental Europe and Japan than it is in the United Kingdom and the United States of America [59]. The next section provides an empirical test of some essential factors that are known to affect monitoring and hence affect firm value.

One set of the data regarding the governance system can be obtained from the effective board of directors. Board characteristics are directly a proxy for monitoring capability and are associated with firm value. Whole volumes of prior literature have discussed this topic ([14, 32, 33, 50, 45, 57]). Compositions of board [1, 33, 49] studied in literature, include board size, board independence, and CEO entrenchment. The size of board or the number of directors on the board affect monitoring activities and henceforth can capture the level of corporate governance in a firm. A larger board size, it is argued, can lead to communication problems and higher agency problems. Free-rider problems from inert committees in large-sized board rooms give rise to greater CEO power. Larger-board firms are expected to have lower monitoring costs [49]. Previous empirical studies have evidenced that board size is negatively correlated with a firm's performance [1, 29, 38, 81].

Board independence and a higher percentage of independent directors tend to capture the monitoring capability of the board. Hence, it can be a proxy for the level of governance and it is used widely in literature in the area of board structure [13, 15, 23, 27, 62, 70, 78].

The diversity of board of directors also affects the capability to monitor and hence is further associated with the overall firm value. Empirical evidence has shown that diversity can

improve a firm's performance [1, 47]. The gender of executives is believed to be another factor that has improved board monitoring Adams and Ferreira [1] by adding "multiple diversity facets to the oversight lens" [57].

3. Ownership structure and monitoring system

Ownership structure can be explained in many formats. In one form, it can be viewed as a concentrated and well-dispersed ownership structure. Concentrated ownership structure is the form of ownership in which large shareholders exist and are able to monitor a manager's activities in order to ensure the highest shareholder's value. Dispersed ownership structure, on the other hand, is the structure of ownership in which shareholders are not large enough to form an active monitoring group themselves. Concentrated ownership is found mostly in countries where stock markets are not yet developed. Another structural view is that the activities of the company are the criteria used to justify whether the structure is concentrated or dispersed [5, 17, 58, 60]. Ownership structure is also classified by its use of a particular legal system in La Porta et al. [56]. Countries where common law is used to enforce the governance structure (found in the US and the UK) lead to a more dispersed form of structure. On the other hand, countries where civil law (found in France, Germany, or in emerging markets) is used to protect investors may lead to a more concentrated ownership structure, since the poorer protection afforded by civil law is substituted by the internal control system derived from the larger shareholders. Berle and Means [9] proposed that ownership concentration should have a positive effect on value because it reconciles the interests of managers to shareholders. However, other researchers argue in opposite directions [25, 26].

Byun et al. [16] used data from the Korean stock market to explore the relationship between ownership structure and firm value. They found that controlling shareholders through more direct ownership moderates the relationship between intensive board monitoring and firm value. In the US, Ajinkaya et al. [3] showed that firms with higher ownership concentration and higher institutional shareholdings are associated with stronger monitoring mechanisms. Previous research also argues that for any board with an entrenched CEO, monitoring capability will decrease because entrenched managers have greater bargaining rights, through which they can use their right to deviate firm resources to benefit their group [44]. Previous literatures have measured the entrenchment power of CEOs, using the situation when the CEO is the same person as the chairman of the board [13, 44]. Also, a CEO of long tenure is more likely to become entrenched [19].

One form of controlling shareholders is known as the family firm. A firm is regarded as a family firm if the shares of the company belong to either a single or a few families. In contrast, a widely held firm is the case in which shares of the company are held by many widespread investors. Many researchers have investigated the role of family firms on the firm value. Whether family firms improve or destroy the overall value of a firm is an interesting topic for researchers. Under the agency problem, large shareholders can expropriate wealth from minority shareholders to their group. Or, they can divert resources of the firm in order to

facilitate a monitoring system that is tailored to their own requirements. The former hypothesis regarding firm value is destroyed, while the latter hypothesis proposes that firm value should improve [77]. Evidence shows that owner-manager conflict in nonfamily firms is more costly than a conflict between family and nonfamily shareholders in founder-CEO firms [77].

4. Corporate social responsibility

After a long debate over the effectiveness of corporate governance, with the ultimate objective focusing on the wealth of shareholders, literatures have turned to ask questions about other stakeholders such as customers, social groups, or environmental lobbyists. Social pressures are the main driving forces of the strategic management in terms of both not only shareholders but also social issues too. The strategic management of many modern businesses includes the corporate social responsibility (CSR) of their strategic policy. CSR is also one attribute of corporate governance. However, researchers are still not clear about the benefit of CSR to shareholders.

In the context of the agency problem, managers of firms are inclined to invest for their own interests (i.e., for reputation) even in the cases of negative NPV projects. If an agency problem is manifested in the good policies (CSR in this case), the relative problem should be reduced when an efficient corporate governance mechanism is enforced.

If CSR is one attribute of corporate governance in terms of a tool to eliminate the agency problem and hence improve overall firm performance, one should observe the positive relationship between corporate governance and sustainability. Boghesi et al., [12] using the Governance Index or *G-index* as a proxy for the level of corporate governance in a firm (see [39]) find no relationship between *the G-Index* and the level of CSR. However, one may find that the level of CSR is higher for low insider firms (firms in which managers own a lower percentage of shares) and low institutional holdings. These findings suggest that investing in the CSR may not be due to the interest of shareholders but from the personal interest of managers. The theoretical implication from the agency problem is that if the CSR or other ethical policies are created in the service of a manager's private benefit, then strong governance should reduce the CSR or other goodness policies ([2, 18, 41]; and [12]) In fact, the managerial ownership or the *high institutional percentage of shares* in a firm represents institutional pressure which, in the context of this chapter, may not have much involvement in explaining the firm's investment in CSR activities. Thus, one could conclude that investment in CSR originates from *the personal motivation of managers rather than from institutional force*. Furthermore, findings about ownership structure and corporate governance are not consistent among different researchers. Barnea and Rubin [6] found a negative relationship between insider ownership and CSR, while Harjoto and Jo [41] found a positive relationship between institutional ownership and CSR activities; however, Boghesi et al. [12] found the opposite relationship—firms with larger institutional ownership are negatively related to the CSR. From the perspective of these research findings, the CSR might not be the ideal solution for the alignment of the managers' interests with the shareholders' interests.

Numerous empirical tests on the issue of the determinant factors of institutional ownership and governance structures are evidenced in many literatures that have been carried out over the last two decades. We provide some examples of the articles in the following section. Johnson and Greening [54] and Jansson [48] empirically found that companies with more pension funds representatives on the board perform better overall with the CSR. Siegel [72] showed that high-skill labor firms are associated with a higher social sustainability performance. Turban and Greening [76] and Greening and Turban [40] evidence that high-quality workers are retained in high social sustainability performance firms. Unions in the firms are tested and hypothesized to affect corporate sustainability. Strong employees' unions are found to be positively correlated with high social sustainability performance [63].

Previous sections have shown some internal control mechanisms such as the ownership of shares, the number of analyst following, or the incentive compensation program. In this section, the role of *board characteristics* is discussed to show that it is also used as an internal control mechanism in a firm ([14, 32, 33, 50, 45, 57]). The composition of the board of directors is studied by many researchers with regard to its relationship with the decision to invest in social programs (or the CSR).

Compositions of the board being studied [1, 33, 49] in literature include board size, board independence and CEO entrenchment. The size of board or the number of directors on the board affect monitoring activities and henceforth can capture the level of corporate governance in a firm. A larger board size is generally argued to have communication problems and a higher agency problem. Free-rider problems from inert committees in large-sized boards give rise to greater power to the CEO. Larger board firms are expected to have lower monitoring costs [49]. Previous empirical studies have evidenced that board size is negatively related with a firms' performance [1, 29, 38, 81].

Agency theory is the product of suspicious views over the relationship between principal and agent. The implication of this theory is that it is natural for owners and managers to foster interests in their own wealth rather than the firm's wealth (or shareholders' wealth). The agency relationship is under criticism because of the conflicting goals of the principle and the agents [24]. While agency theory views that conflicts of interests are not beyond expectation, the *Stewardship theory* offers the opposite view. Stewardship theory posits that managers are not opportunist nor commit to their duty for their own interest. Without any individual interests, board members can focus on strategic planning and on monitoring roles for the firms' overall sake. These roles are more manifest when the board of directors imposes effective communication, collaboration, personal charisma, and networking. Moreover, the gender differences literature suggests that such qualifications are to be found more in women rather than men [20, 57]. Based on this theory, gender differences may play more vivid roles in producing managerial outcomes that differ from all-male boards only.

5. New challenges for firms

In the current environment, business structure has substantially changed and firms find themselves in different terrain from previous commercial paradigms. For example, there is

a more horizontal structure and firms are very close to their various stakeholders. The new structure is accelerated by the widespread fastening of social integration through information technology, as outlined brilliantly by Seidman [69].

This new circumstance changes the explanation on the theory of firms in many perspectives. Characteristics of these changes can be observed in two important concepts about the theory of firms. First, the value of firms no more concerns only the explicit relationship of various stakeholders such as shareholders and debt holders, but it incorporates the relationships which are the implicit ones to be included in the valuation function process.[1] Second, *not only a single group of stakeholders* (shareholders) will receive their value at the maximum level from the firms' operation, *but many groups of stakeholders have their claims on part of the firm's overall value* [52]. Until the introduction of agency problems, finance theories explained many financial issues away by relying on the clear separation between participants. Effects from the decisions of any one group do not have any (or small) effect on decision of others. The separation of ownership and control assumes that inside equity owners or managers maximize the value of the firm without any constraints on or without any concerns about other outside nonmanagerial shareholders' objectives. Furthermore, firm theory has previously had nothing to do with other stakeholders' desires. Stakeholders (customers, suppliers, community, etc.) were related to firms via the sole objective of profit maximization. In shareholders' maximization circumstance, only the cash flow to shareholders is taken into the valuation model by assuming that wealth of shareholders is created from sufficient returns without *acknowledging or mentioning various returns to other stakeholders' contributions.*

This traditional approach to firm theory is challenged by researchers in many fields. Management theorists have now asserted that stakeholder theory has become the prominent theory instead of shareholder theory. The concepts of decision management beyond shareholders' value are welcome, such as the Customer Social Responsibility (CSR), the triple bottom lines, the Economics Social Governance, or the Corporate Governance. Marketing theory has introduced the new paradigm of *Maketing-3.0*. Finance researchers have also incorporated these changes into the existing theories such as *the firm's value determination, the capital structure theory, and the theory of firms.*

5.1. From shareholders to stakeholders

Shareholders' theory and stakeholders' theory are two opposing theories that view property rights differently. Traditional shareholders' theory views shareholders as the only owners of the assets since they invest their money (capital) into the firm and they should therefore get the residual income to offset the risk from an operation. Traditional structure, therefore, assigns the right to shareholders who select the board to be their representatives. The board then selects the managerial team to operate a firm. Another perspective or stakeholders' theory views that all stakeholders have their own rights with regard to their assets in a firm. Workers invest their human capital, customers and suppliers also contribute to a firm and should have their own claims on the part of the total income. Consumer co-operatives and

[1] Implicit relationship or implicit contracts are found in the relationships between nonmonetary stakeholders (social environment or community surrounding the organization, or environmental organizations).

worker-cooperatives (or unions) are examples of organizations where consumers or workers explicitly get the shared income from an operation. Confliction in the two theories comes from the main disputed questions which turn out to be: Who should be the parties that have such "rights" on the asset or property and: Who has the authority to allocate the shared income? Jensen and Meckling [53], Ross [67], Quinn and Jones [64], Jensen [51] all argued in favor of shareholders maximization theory based upon the ideal that shareholders are essentially the principals who invest their explicit capital and delegate their managerial rights to managers or agents to operate the firm using the single objective to maximize the wealth of shareholders. By contrast, Freeman [34], Donaldson and Preston [28], Kay [55], Blair and Stout [10], and Freeman et al., [37] are researchers in favor of the stakeholders' theory. Kay [55] argued that assets of the firms are in many forms and not just monetary capital provided by shareholders. Employees provide the skills, customers and suppliers' the willingness to purchase and sell; additionally, a better understanding from societal groups around the firm is also an important asset that in terms of its returns, should be maximized. Kay explains that managers are the trustees of these assets.

Stakeholder theory is called an incomplete theory by Jensen. Jensen argues that stakeholder theory is incomplete because it does not offer a maximization of value for stakeholders. He also points out the flaw in the theory is that it does not provide a single-objective, so that the management cannot have a long-term goal under the stakeholder concept. However, he accepts that a stakeholders-oriented policy is needed to couple with the objective function and is labeled the "enlighten value maximization" policy. According to Boatright [11], stakeholder theory is not inconsistent with the nexus-of-contract view of firms, in which shareholders are held to be the only group that should be allowed to maximize their value. Boatright [11] reconciled the theory of stakeholders and nexus-of-contract views and argues that stakeholder theory has the following perceptions: (1) all stakeholders have a right to participate in corporate decisions that affect them, (2) managers have a fiduciary duty to serve the interest of all stakeholder groups, and (3) the objective of the firm ought to be the promotion of all interests and not just those of shareholders alone. These three criteria are served as the essential concepts to understand how value and stakeholders are related. It is not uncommon for all stakeholders to participate in corporate decisions in this corporate governance structure. But, it is possible for some groups (employees or creditors) in some countries to have no such right [48].

6. Sustainability of a firm

According to the traditional concept, a firm is composed of contracts among interrelated groups within. The nexus-contract meaning of firms [4, 21, 32, 33, 53] views the value of firms as the value of explicit contracts among monetary stakeholders, such as shareholders and debt holders. Such meaning of the term "firm" is challenged by the increasing importance of non-monetary and *implicit* stakeholders. From this perspective, values of firms can be increased because of the increasing value of implicit contracts [22, 75] and intangible assets [11, 51, 82]. Further, since each constituency can bargain with a firm over the effective means for protecting its interests, value of firms can be increased (or decreased), when each constituencies'

individual interest is satisfied [11]. Stakeholders' theory and nexus-of-contract firms are aligned to each other because all stakeholders participate as contractors in the formation of a firm. In this view, the intrinsic value of each groups' interest is the added value to a firm. As explained earlier by the author, the main normative clause from the nexus-of-contract theory is the agency theory, which posits that agency cost or agency problem is naturally occurring in the separation of ownership and controls [53]. Under the agency base theory, the value of a firm can be increased when agency costs are minimized. Agency theory focuses on explicit contractual relationships. Hill and Jones [46] and Boatright [11] proposed a new conceptual theory of agency-cost among stakeholder groups, which is called stakeholder-agency theory. Their model contends that stakes of constituencies or the various sizes of stakes are derived from the implicit contracts of the specific assets invested by stakeholders. By definition, specific assets means assets that cannot be redeployed to an alternative use without a loss of value [11, 46, 79, 80]. In this model, the relationship between manager and each stakeholder depends on such specific assets [11] and the power of difference between managers and stakeholders [46].

Promotions in the job, a continuing production of handling quality products, or services to customers are examples of implicit contracts that can affect a firms' value. As outlined by Williamson [79, 80]), Hill and Jones [46] and Boatright [11], human capital is an example of an intangible asset *and is called on as a specific asset only if the human assets in the particular firm pose a unique skill to work within only that kind of business*. Talented staffs with specific skill are usually found in the computer business or airlines business.

7. Stakeholders and sustainability

Corporate sustainability is a broad dialectical concept that combines economic growth with environmental protection and social equity. Originally, the term was used by the World Commission for Environment and Development or WCED in 1987, which defined sustainable development as *development that met the needs of present generations without compromising the ability of future generations to meet their needs.* The concept of sustainable development was originally created to enhance the implementation of macro-economic policy against the direction of country-development, which most countries often set in tandem with policies geared toward monetary growth (such as GDP). The concept has subsequently been used by businesses, who then labeled the term as "corporate sustainability" to differentiate from the macro-concept. Despite the lack of clarity as regards a working definition, there are still common concepts used to explain this term. The common concept usually documented is from the Global Reporting Initiative (GRI), which is the nonprofit organization that works toward a sustainable global economy. From the viewpoint suggested by the GRI, corporate sustainability comprises *three pillars*: the economic performance, the environmental aspect, and the sociological performance.

The three pillars concept is very much well known in connection with the name of the *triple bottom lines* delineated by Elkington [31]. Corporate sustainability is almost identical to the triple bottom lines and many businesses use and interpret it as if they are utilizing the exact

self-same meaning. However, there are some different points that should be noted. The first point is the interpretation over the term "economic performance." Triple bottom lines interpreted "economic" as accounting for the profit of firms, whereas the corporate sustainability concept describes economic performance more broadly than just accounting for the profit of firms in this limiting fashion. The second point of difference is the perception of *value.* While the triple bottom lines separate the value from the environmental and the social by implying that management has to indulge extra activities to enhance economic profit [43], the corporate sustainability theory states that value can be created when resource-suppliers (or stakeholders) are maximized [43, 61].

The resource-based concept of corporate sustainability fits very well with the overall framework of stakeholders' theory [28, 34–36, 42], which has the main focus of sharing the value created in firms between all stakeholders—not just shareholders. As a consequence of this assumption, we use the terms "corporate sustainability" and "stakeholders" theory interchangeably in this chapter. Practically, it is very difficult to separate the sustainability strategy from a policy that is focused on the triple bottom lines theory.

8. Why sustainability?

Almost all corporations in the contemporary period voice their concerns regarding stakeholder groups beyond the realm of financial stakeholders (shareholders and creditors). Customers, employees, and suppliers are all targets of concerns since they are groups who interact and have a direct influence upon a firm's operation and profitability. More extrinsic stakeholders such as social groups, community groups, or environmental activists are indirectly affected by a firm's operations—but they are also targeted. As indicated in stakeholders' theory, a business's operation in the current business climate cannot be sustained if their stakeholders are not satisfied.

Corporate sustainability is not just a new concept in management theory—but the concept has been proposed and discussed by economist for a few decades now. The questions as to why it is needed for current business strategies can be evidenced by many concrete demonstrations and by the work of many academicians. In general, corporate sustainability or stakeholder theory has become the prominent theory because the conventional theory, which emphasizes on a single group of stakeholders or stockholders, is not sufficient to explain the vagaries of the current business climate. Business in this current environment of high and effective internet communication has lowered its wall against outside influences. Their policies or practices are exposed to stakeholders who are more collective in voicing their demand against unjustified policies or unfair policies. There are many business cases which aptly demonstrate how businesses are in a situation of turmoil when stakeholders' welfare requirements are not satisfied. For example, the case of *Nike* in the middle of the 1990s where a transnational was blamed for the use of child labor in Pakistan; in addition, "KFC" has been the target of criticism for its use of trans-fat in its operations. In 2009, *W.R. Grace and Company* the Maryland-based chemical conglomerate had a case filed against if for exposing workers and residents to asbestos contamination in Libby, Troy, and Montana. The case has been the subject of a film entitled "A Civil Action." These cases are all good examples of businesses that

got into trouble when their practices adversely affected various stakeholders, both extrinsic and intrinsic. In fact, their practices and standards did not meet the required ethical standards of a wide range of stakeholders.

Zingales [82] described the changing characteristics of modern firms by claiming that:

> *"The nature of the firms is changing. Large conglomerates have been broken up, and their units have been spun off as stand-alone companies. Vertically integrated manufacturers have relinquished direct control of their suppliers and moved toward looser forms of collaboration. Human capital is emerging as the most crucial asset."*

9. Conclusion

The developmental learning of firm theory through its history is akin to what Isaac Newton (1675) alluded to when he claimed *If I have seen further it is by standing on the shoulders of Giants*. If we imagine the *theory of firm value* as a ride on a long journey, we can see a lot of changes along the way. Along the journey, the view from one side of the road is clearly different from that on the other side of the road. It moves from one belief in the theory of shareholders to the other side, or the emphasis upon stakeholders. Firm theory has to address these vacillations in financial knowledge. Zingales turns the spotlight onto the future of finance, when he writes that the new theory of finance should understand the relative effects of mergers, acquisitions, spin-offs, and diversification under the aegis of these new theoretical changes. In these new and changing circumstances, the concept of corporate governance must be addressed in order for it to develop a new system to cope with these new market environments [65, 82].

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Chapter 2

Stock Price Determinants: Empirical Evidence from Muscat Securities Market, Oman

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Additional information is available at the end of the chapter

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Abstract

Stock price is one of the main indicators for measuring firm performance and also the only factor determining shareholders' wealth. Stock price changes are based on information related to the firm and the market as a whole. This paper is focused on the determinants of the share price of the twenty-six non-financial companies listed in Muscat Securities Market, Oman. In this study, closing annual stock price from 2011 to 2016 is the dependent variable and the firm-specific variables like firm size (logarithm of total assets), dividends payout, earning per share (EPS), debt ratio, price-earnings(PE) ratio, first lag of dependent variable(stock price) are the independent variables in the panel data regression using random effect model. There are two categories of research hypothesis: the first one is based on semi-strong form of Efficient Market Hypothesis (EMH) and second one is based on Arbitrage Pricing theory (APT). To test the second set of hypothesis, oil price, growth rate in GDP and consumer price index are considered as independent variables as they effect performance of business and so do the stock prices. EPS, debt ratio and first lag of stock prices are significant determinants of stock prices. Dividend payout, firm size and PE ratio are insignificant variables.

Keywords: dividend, stock price, Muscat, random effect, oil price

1. Introduction

In today's world, the performance of business and corporates of a country plays a very important role in its position as a world leader. The per capita income, employment rate and other economic variables depend a lot upon the performance of business houses in that country. The stock price of a company fluctuates according to the performance of the business and the economy as a whole. The timing and the decision about buying and selling of stock depend upon the

stock price level. When an investor decides to invest in a stock he always looks for strong and growing companies, the value of the firm is reflected in the stock prices of that firm, and that is how an investor without any finance knowledge selects the stock-by-stock price movements.

One of the key sources of financing for the listed firms is the stock issue, and for successful stock issue, firms need to have a strong track record in the stock market. There are various stakeholders to the business, like shareholders, creditors, customers, employees, and government. The rising stock price is an indicator of good management and satisfaction for all the stakeholders. There are company-specific and market-related determinants of stock prices; in literature, many theories are available that explain the movement in the stock prices.

One of the most significant theories is the Efficient Market Hypothesis (EMH), which is based on the assumption that rational investors in the market react to the available information like company fundamentals and other important declaration about the company to decide on the stock buying or selling. If they feel that the information is positive, then they retain the shares if already bought or buy the one which was not purchased earlier and vice versa. The action of buying and selling stocks by the investors is responsible for changes in stock price. There are three forms of EMH—weak, semi-strong and strong form—and they vary regarding available information for public and investors. Another theory 'Random walk' states that stock prices are random and cannot be predicted by any means. This theory has been empirically tested many times and proved by the researchers. A random walk is consistent with EMH, as the flow of information is random which helps investors in reassessing the stock price.

The third theory 'Behavioral Finance Theory' is very different from the random walk and the EMH theories. This theory states that investors do not behave rationally rather they invest by psychological and behavioral factors; for example, they will invest in the stock if the stock price is increasing even if there are no significant changes in the company fundamentals.

Gordon [1] revealed that dividend payment and growth rate of the company have an impact on the intrinsic value of shares. The model was based on the assumption of constant growth in dividends which was one of the weaknesses of the model, but still, it is the highly used model to calculate the intrinsic value of the stock. This model claims that expected dividend and growth rate of the company are positive determinants of stock prices.

A considerable amount of research has been done to find out internal determinants of share price changes of companies, some of the common factors found are dividend yield, total assets, earning per share, capital structure and book value per share. Apart from internal variables, macroeconomic variables also have an impact on share prices that have been discussed by Roll and Ross [2] in his arbitrage pricing theory (APT), a framework for pricing securities for investors. According to Ross, common macroeconomic factors affecting share prices were unexpected changes in inflation, GDP and changes in the yield curve. APT model is flexible as investors can select other factors also depending on the market like for oil exporting and importing countries oil price can be an important factor affecting security prices. Mukherjee and Naka [3] supported the APT theory by confirming the impact of economic variables on the stock returns; they argued that changes in economic variables affect dividend payments and discount rates and thus have an impact on share prices as well.

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In the present study, the attempt has been made to study the impact of select internal determinants and macroeconomic determinants of the share price of listed 26 nonfinancial companies in the Muscat Securities Market. A lot of work has been done on this topic, but most of the studies are based on establishing a relationship between dividend policy and stock prices. To the best of researcher's knowledge, this study is the pioneer study on the Oman capital market, based on stock price determinants of the companies from Muscat securities market. In the previous studies from GCC countries [4–6] and studies from other countries, authors have not studied any specific sector for share price determinants. Another contribution of this study is that it is exclusively based on nonfinancial companies. The nature of balance sheet in financial companies varies from nonfinancial companies in terms of leverage, current assets and fixed assets composition. Therefore, to study the impact of company-specific determinants on share prices a separate sample of financial and nonfinancial companies would yield better results rather than studying the mix of all types of companies.

The whole chapter is organized into five sections including introduction. Section 2 describes the literature review. Section 3 discusses the methodology and data. Section 4 presents the empirical results and its discussion thereof. Section 5 presents conclusion with policy implications.

2. Review of literature

Collins [7] was the pioneering work on determinants of share prices based on the US market, the findings of the chapter recognized book value of equity, dividend, net profit and operating cash flows as the significant factors affecting share prices.

Nirmala et al. [8] used fully modified least square regression model on panel data of 37 Indian companies from 2000 to 2009. The study identified price earnings ratio, leverage and dividend per share as the major determinants of share prices. In the Indian context, this study was also conducted by Tandon and Malhotra [9]; they tried to identify determinants of stock prices for 100 companies listed in National Stock Exchange (NSE) using linear regression model from 2007 to 2012. The results indicated that firms' book value, earning per share and price-earnings ratio have a significant positive association with firm's stock price, while dividend yield has a significant inverse association with the market price of the firm's stock.

Malhotra and Prakash [10] studied the determinants of stock prices of Indian companies during 1990–1999 with the help of correlation and regression analysis. Book value per share, dividend per share, market to book ratio and PE ratio emerged as the significant determinants of the share prices.

Oseni [11] studied the impact of earnings per share (EPS), oil price, dividend per share (DPS), GDP, foreign exchange rate and interest rates on share prices of 130 companies from the Nigerian stock exchange. The study revealed a strong positive correlation between stock prices and EPS, oil price, dividend per share and GDP.

Gjerde and Saettem [12] studied the relationship between stock returns and macroeconomic variables like inflation, real economic activity and oil prices in Norway. The empirical study revealed that inflation is not a significant variable for changes in stock prices. However, there was a positive relationship between oil price and stock price.

Irfan et al. [13] attempted to explain the impact of six company variables dividend yield, dividend payout ratio, leverage, size of the firm, earnings volatility and asset growth rate on stock prices of Pakistani companies during the period 1981–2000. A regression model was

Study	Methodology	Results of the study (+/− significant or insignificant)	Place
Bhattarai [15]	Multiple Regression Model	dividend payout ratio (insignificant), dividend yield (−), earnings per share (+), price earnings ratio (+), logarithm of total assets (insignificant)	Banking sector of Nepal
Şebnem and Vuran [16]	Dynamic Panel Data Analysis	closing price of the stock at time t-1 (+), book-to-market equity (+), leverage ratio (−), firm size (+), dividend paid (−), oil price (−)	Istanbul Stock Exchange
Gregoriou et al. [17]	Panel least squares regression model	earnings per share (insignificant), net cash from operating activities per share (+), book value per share (+), long-term debt to total assets (+), dividends per share (+)	Mobile companies from Europe, Asia, the Middle East and America
Ibrahim Obeidat [6]	Multiple Regression Model	Earnings per share (+), dividends per share (+), book value per share (+)	Abu Dhabi Securities Market
Mohammad Khan Ghauri [18]	Fixed effect regression model	Equity (−), dividend yield (insignificant), return on assets (insignificant), asset growth (insignificant)	Banking sector of Pakistan
Raithatha and Bapat [19]	Fixed effect regression model	Beta (+), market capitalization (+), current ratio (insignificant), earnings per share (+), D/E ratio (insignificant), return on capital employed (insignificant)	Indian Stock Market
Srinivasan [20]	Random effects model	Dividend per share (−), price earnings ratio (+), EPS (+), size-sales (insignificant), book value per share (insignificant)	Indian Manufacturing Companies
Adrangi et al. [21]	Johansen and Juselius co-integration model	Inflation rate (−), economic activity (GDP) (+)	Brazil stock market
Papapetrou [22]	Multivariate vector-auto regression (VAR) approach	Oil prices (−), real economic activity and employment	Greece stock market
Fama and Schwert [23]	Regression Model	Expected inflation (−) and unexpected inflation (−)	New York Stock Exchange

Table 1. Summary of other identified studies.

used to establish the relationship; the study concluded that none of the fundamental factors considered were significant for the changes in the share prices.

Al-Deehani [4] studied the impact of EPS, DPS, previous year dividend, return on equity (ROE), price to book value and cash flow per share on the share prices of companies listed in the Kuwait stock exchange. The study concluded that variables DPS, previous year dividends per share, ROE, price to book value and cash flow per share are all highly correlated with the share price.

Al-Tamimi et al. [5] investigated the key determinants of stock prices of 17 companies listed in UAE stock market during 1990–2005. The regression result indicated EPS as a strong determinant having positive impact on share prices; consumer price index was found to be statistically significant with a negative coefficient. Money supply and GDP were found to have a positive coefficient, but they were statistically insignificant.

Allen and Rachim [14] tested the effect of dividend policy on the stock price volatility with the control variables like leverage, growth, earnings volatility and firm size. The data on 173 companies listed in the Australian stock market from 1972 to 1985 were analyzed with the help of cross-sectional regression analysis. The results showed the significant positive relation between stock price volatility and leverage, size and earnings volatility. It was also concluded that dividend policy is not influencing stock price volatility. Apart from the studies mentioned above, few more important studies from different markets are identified and mentioned in **Table 1**.

In the existing literature, there is a mixed opinion on the determinants of stock prices and their positive or negative impact. Very few studies are based on GCC countries and none of them from Muscat securities market, Oman. This study thus fills the gap by researching the impact of select firm-specific and economic variables on the stock prices of the nonfinancial sample companies listed in Muscat securities market, Oman.

3. Data and variables

By available literature and data, the author has identified dividend payout ratio, debt ratio, earnings per share (EPS), logarithm of total assets (a proxy for company size) and price earnings ratio as the regressors of the stock price in this study. This study is based on 26 nonfinancial companies listed in Muscat securities market during 2011–2016. The sample companies selected for the study are based on the availability and fullness of the data. The selected companies are Al Saffa Foods, Salalah Mills, Oman Cement, Raysut Cement, Galfar Engineering and contracting, Anwar Ceramic Tiles, Jazeera Steel Products, National Aluminum Products, Gulf International Chemicals, Oman Chlorine, Oman Cables Industry, Voltamp Energy, Omantel telecommunications, Port Services Corporation, Almaha petroleum products, National Gas, Oman oil marketing, Shell Oman Marketing, ACWA Power Barka, SMN Power Holding, Sohar Power, United Power, Al Jazeira Services, Oman Investment and Finance, Renaissance Services and Ooredoo.

Roll and Ross [2] in his arbitrage pricing theory (APT) has proved the relevance of macroeconomic variables in stock pricing. Based on the literature, economic variables like growth rate in GDP, consumer price index and crude oil prices have also been considered as the external

variables affecting stock prices. Fama and Schwert [23] the well-known study was also based on the relationship between stock prices and inflation. Oman being the net exporter and mainly depending on oil and gas export is facing the heat of low oil prices. Economy of Oman like other GCC countries is driven by oil and gas, so consideration of oil price as an independent variable makes sense.

Dividend payout ratio is the ratio of the amount of dividend paid per unit of total earnings, also represents the percentage of earnings distributed in the form of dividends to shareholders. The payout ratio is considered to be one of the important variables affecting stock price as current stock value is the discounted value of future cash flows from that stock. The second variable 'debt ratio' is defined as the ratio of total debt to total assets, expressed as a decimal or percentage. It can be interpreted as the proportion of a company's assets that are financed by debt. It is a measure of financial risk on the assets of a company, and higher financial risk will affect the returns and consequently price of a stock. The third variable considered in the study is EPS, which measures the income generated on one share. It is a ratio of net income to the number of shares outstanding. In most of the studies, EPS has emerged as a significant variable having a positive impact on share prices. In literature, many studies have tried to measure the impact of the size of the company on the stock prices. Some of them have used the logarithm of sales as the proxy for company size and in some cases logarithm of total assets. Both sales and total assets are an indicator of business size. Many investors take their investment decision by company size as bigger companies are more stable regarding profit and are also less prone to the business cycle. Price-earnings ratio commonly known as PE ratio is one of the prime indicators used in the stock selection by the investors. PE ratio is the ratio of the market price of a stock to its EPS. It is a measure of investor's confidence on stock and is a reflection of investor's anticipation of higher growth in the future. Gordon growth model confirms the role of the growth rate of the company on the intrinsic value of the stock.

3.1. Hypothesis

The following hypothesis statements were formulated on the basis of available literature and theory which provides the scope and depth to the study.

Hypotheses H_{01} to H_{06} are framed to test the reflection of publicly available information on the stock prices based on semi-strong form of EMH.

H_{01}: There is no significant effect of size of the company on its share price.

H_{02}: There is no significant effect of dividend payout ratio on share price.

H_{03}: There is no significant effect of EPS on share price.

H_{04}: There is no significant effect of leverage on share price.

H_{05}: There is no significant effect of price-earnings ratio on share price.

H_{06}: There is no significant effect of first lag of share price on current share price.

The following hypothesis are framed to confirm the impact of economic variables on the stock returns based on arbitrage pricing theory (APT),

H_{07}: There is no significant effect of crude oil price on share price.

H_{08}: There is no significant effect of inflation on share price.

H_{09}: There is no significant effect of growth in GDP on share price.

3.2. Panel data analysis

Panel data analysis has been used to analyze the impact of firm-specific and macroeconomic determinants on the share price of the nonfinancial listed companies in Oman. Panel data always has advantages over time-series and cross-sectional data. Panel data analysis weakens the interaction between the variables that result in more reliable parameters, Hsiao [24]. Employment of this technique is considered more efficient as it reduces the co-linearity of the predictor variables and also it offers gain regarding the degree of freedom. The research study uses both the panel data methods, that is, fixed effect method and the random effect method. The better method is then selected applying the Hausman test. Both the models fixed effects and the random effects have been represented by the following Eqs. (1) and (2), respectively:

$$CP_{jt} = \beta_{0j} + \beta_1 CP_{jt-1} + \beta_2 Dividend_{jt} + \beta_3 EPS_{jt} + \beta_4 Leverage_{jt} + \beta_5 GDP_{jt} + \beta_6 Inflation_{jt} + \beta_7 Size_{jt} + \beta_8 Oil_{jt} + \beta_9 PE_{jt} + \mu_{jt} \quad (1)$$

$$CP_{jt} = \beta_0 + \beta_1 CP_{jt-1} + \beta_2 Dividend_{jt} + \beta_3 EPS_{jt} + \beta_4 Leverage_{jt} + \beta_5 GDP_{jt} + \beta_6 Inflation_{jt} + \beta_7 Size_{jt} + \beta_8 Oil_{jt} + \beta_9 PE_{jt} + \mu_{jt} \quad (2)$$

where, CP_{jt} = annual closing price of firm's stock in year t; β_0 = common y-intercept; β_1–β_9 are the coefficients of concerned explanatory variables; ε_{jt} = stochastic error term for firm j at time t; β_{0j} = firm j's y-intercept; μ_{jt} = error term for firm j at time t.

Based on the literature on share price determinants, the following company-specific variables dividend payout ratio, leverage, earning per share, size of the company, price earnings ratio and three economy based variables growth rate in GDP, inflation rate and crude oil prices were selected as the predictor variables in the regression analysis. Apart from these variables, first lag of yearly closing price of shares was also considered as a predictor variable.

4. Data analysis

This section presents the results of panel data analysis which are reported in **Table 2**. Both the fixed effect and random effect model was used to measure the impact of the selected independent variables on the stock prices of sample companies. Then the Hausman specification test was used to select a better model between fixed effects and random effects model. The null hypothesis in Hausman test is that the preferred model is random effects and the alternate hypothesis is that the preferred model is fixed effects.

Variables	Fixed effects model		Random effects model	
	Coefficient	Probability value	Coefficient	Probability value
Constant	−7.520228	0.0146	−2.388403	0.0112
Lag dependent	0.046939	0.0306	0.049934	0.0116
Dividend	−0.085040	0.8511	−0.158990	0.4880
Leverage	−0.348200	0.6613	0.694747	0.0286
EPS	12.28314	0.0000	12.16380	0.0000
GDP	0.004827	0.7650	0.004485	0.7791
Inflation	−0.053186	0.2667	−0.080517	0.0778
Size	0.558998	0.0409	0.082158	0.1875
Oil price	0.349209	0.0432	0.316537	0.0620
PE ratio	−0.000300	0.8755	−0.000619	0.7284

Table 2. Determinants of share price according to fixed and random effect model.

According to the results of fixed effects model earnings per share, a log of total assets (a proxy for company size) and crude oil prices are found to be significant determinants of the changes in stock prices. All the three variables have a positive relationship with share prices. The macroeconomic variables growth rate in GDP and consumer price index are found to be insignificant in explaining the changes in share prices.

Results of the Hausman test are reported in **Table 3**, and according to that, null hypothesis is accepted. Therefore, random effects model is supposed to be a better model for analyzing this panel data. Value of R square is also quite high with 93.23% of variations in stock price explained by the regression model. In Random effects model, among the company-specific variables used in this study, lag of share prices, earnings per share and leverage are the statistically significant variables. The two variables earnings per share and first lag of share prices are even significant at 1% level of significance. The lag of the share prices has positive coefficient which means the previous hike in share prices are responsible for the increase in share price of the next year. Investors invest by stock price movement; this result supports the behavioral theory of finance. Earnings per share (EPS) is one of the most dominant determinants of share prices with the highest positive regression coefficient of 12.16 and significant at 1%. Debt to the total asset (leverage) is also significant and is positively related to sharing prices of the sample companies. The dividend has proved to be an insignificant determinant of the share prices, and this supports the irrelevance of dividend policy on the firm value. The logarithm of total assets (size of the company) and PE ratio are also not significant determinants at 5%.

From the three external variables, inflation rate and crude oil price are significant at 10% level of significance. The result of inflation rate is consistent with the previous studies and has a negative impact on share prices [21, 23]. Oman being an exporter of crude oil, the oil prices are significant determinants and have a positive impact on them. The growth rate in GDP is not seen as important and significant variables for share prices in Oman.

Test Summary	Chi-Square Statistic	Probability
Cross-section random	0.000000	1.0000

Table 3. Result of Hausman Test.

4.1. Testing of research hypotheses

Results of random effect model indicate the rejection of the null hypothesis $H_{03,}$ H_{04} and H_{06} at 5% level of significance. Other null hypothesis like $H_{01,}$ H_{02} and H_{05} are not rejected at 5%. Hypothesis H_{01} to H_{06} were framed to test the existence of semi-strong form of EMH in capital market of Oman, which is partially met. Similarly, two null hypotheses (H_{07} and H_{08}) are rejected at 10% level of significance and supports APT theory for stock prices.

5. Conclusion

The study aimed at investigating the effect of dividend payout, EPS, a log of total assets, debt ratio, PE ratio and previous year stock price on the current stock price of 26 listed nonfinancial companies in Oman. Three economic variables—growth rate in GDP, crude oil prices and consumer price index—are also considered as an independent variable in this study.

The empirical analysis is based on random effect model regression analysis with the stock price as the dependent variable. Based on the data analysis, the study finds that EPS has a significant positive effect on the price of common stock. Relatively, the value of the coefficient (12.16) for EPS is the highest among all the independent variables. In the majority of the existing studies, EPS had shown the same relationship with stock price [5, 6, 15, 19, 20]. EPS is a direct measure of shareholders earning on one share, and stocks with high EPS are commonly selected by equity analysts. Debt ratio (leverage) is also a significant variable having a positive relationship with stock price. Conceptually higher debt capital is an indication of financial risk, and hence an investor avoids these stocks. The reason for a positive relation between leverage and stock price could be a low percentage of debt capital in sample companies, as up to a certain level debt capital is favorable for stockholders which has been explained by the concept of 'trading on equity.'

First lag of stock price is also significant and has a positive effect on current stock price consistent with Şebnem and Vuran [16]. This finding supports 'Behavioral Finance Theory' which explains the inconsistent behavior of investors toward theories and concepts. Dividend payout is insignificant determinant for stock prices, and results are consistent with the previous studies [9, 15, 18]. However, intrinsic value of a stock depends on future dividends; this may be because of anomalies or investors giving weightage to capital gains. The firm size is not significant; this result shows that investors are not giving any preference to bigger and established firms.

The macroeconomic changes also influence stock prices; inflation is negatively related to stock prices which support the well-known study of Fama and Schwert [23]. He justified the negative relationship by arguing that 'an increase in inflation causes uncertainty and reduces future economic activity and thus future earnings of the firm which results in a reduction of stock price.'

The current study confirms that stock prices are affected by certain firm-specific variables and also by select economic variables. The results of the study might help investors and equity analysts in better decision-making. The study has achieved its objectives and recommends future research in the context of Oman with financial companies or with another set of variables that might have a significant effect on stock prices.

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Chapter 3

Effect of Free Float Ratio on the Behavior of Shares Valuation in Companies Listed in Latin American Capital Market

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Additional information is available at the end of the chapter

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Abstract

Free float is generally defined as the number of outstanding shares minus the number of shares that are restricted from trading. This restriction comes from the fact that these shares belong strategic investors who do not usually negotiate their holdings. The ownership structure of the capital of each company can condition share's prices and trading volume. The objective of this chapter is to identify if there is a relationship between floating capital ratio and volumes operated, volatility of prices and performance of the shares. The data analyzed correspond to Latin American companies listed in Argentina, Brazil, Chile, Peru and Colombia at the end of 2016. The applied statistical methodology is a simple linear regression. As a result of the study, it is observed that, in Peru and Colombia, greater floating capital affects the equity' retorn in the market. The contribution of this research is the analysis of the free float impact on the explained variables in stock markets of Latin American countries. This study presents two limitations; the use of data from a cross-sectional sample and the number of companies that formed the sample.

Keywords: free float, annual returns, traded volume, volatility, linear regression

1. Introduction

For several years, explanations have been sought to describe the behavior of stock prices in markets as well as the reasons for their valuation changes. Consequently, the analysis of financial and market information is relevant [1]. Financial information presented by companies allows the elaboration of different ratios that are useful for academicals porpoises and for investors. This analysis can be done to compare variations in valuation over several years

for the same company, to compare companies from the same country within a sector or to compare a sector in different countries. Regional analysis is interesting because it allows us to detect different behaviors within the companies that operate in similar environments.

Using financial information from different items of companies' assets, liabilities and earnings allows us to analyze profitability ratios, returns persistence, debt ratios and companies solvency [2, 3]. The return ratio on equity is usually considered by investors and analysts, since it measures profitability of the resources contributed by the owners. There is a perception that the higher the return on equity, the better will be the performance of share prices. However, this hypothesis is not proven by previous empirical research since high values of ratios do not always lead to higher returns on shares [4].

For the purpose of measuring the size of a company, we use the concept of stock market capitalization, defined as the market value of an enterprise. This provides an interesting fact because it is the capital of the company multiplied by the price of it equities in the stock market, and therefore, it is a way of quantifying the size of the capital market. The total market capitalization is the sum of all companies' capitalizations that quoted at a certain date.

It is important to measure market capitalization in absolute terms and in relative terms related to the gross product of each country in order to observe its behavior and draw conclusions [1]. Now that capital is owned by different shareholders, with different characteristics. Nevertheless, there is no doubt that the ownership structure of traded shares in markets can have its effects [5].

Hardouvelis and Karalas (2016) [6] mentioned the importance of the presence of institutional investors in markets and the impact of this on prices. They remarked that the percentage owned by institutional shareholders increased dramatically from about 45% average in the mid-90s to about 80% in recent years. Then, different authors [7] asserted that the intervention of governments affects the liquidity in markets because of different measures adopted that are related to the countries economical evolution.

In the case that the shareholders are state agencies, decisions are taken differently from institutional investors in general because they do not act freely in the market. They have to complete with certain standards in each country.

In Argentina, it is observed in companies listed that in addition to the concentration observed in the capital by majority shareholders, there exists the Sustainability Guarantee Fund (FGS) created in 2009 after the National Senate approved the reform of the Argentine Pension System, which implied the disappearance of private retirement and the Retirement and Pension Funds Administrators (AFJP). In 2016, Law No. 27260 in a National Program of Historical Reparation affects the resources of the Sustainability Guarantee Fund of the Argentine Social Security System for Retirees and Pensioners. Therefore, this fund can generate an offer of shares in the market but not with periodicity, affecting market liquidity. For this reason, it is possible to consider the adjusted floating capital by subtracting the holding portion of the FGS.

Other studies quantify the performance of the company as of its accounting profitability, in relation to the property concentration [5], but in this chapter, the analysis is oriented to the magnitude of the floating capital. The aim is to demonstrate the effect of floating capital on the

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share's prices in markets, volatility and finally traded volume. The approach adopted follows the methodology of Çalişkan and Kerestecioğlu.

The study is carried out in companies whose shares are part of the most representative indexes of Latin American markets—from Argentina, Brazil, Chile, Peru and Colombia. The reason why shares of these indices are studied is because they are the ones that have greater stock market presence. According to what is mentioned on O'shee et al. in Latin America, two important aspects characterize the ownership and control structures. In the first place, companies show a high degree of ownership concentration and second, many firms are indirectly controlled by industrial and financial conglomerates that operate in Latin America.

The model proposed analyze data corresponding to 181 companies of the selected Latin Americans indices and applies three simple linear regressions, where the explanatory variable is always the magnitude of the free float ratio, and response variables are the share price variation, the share price volatility and the traded volume. Before applying the model, a descriptive analysis of the variables used in each selected country is carried out to contextualize the results obtained. The results show that there are diverse conclusions for each country and for the different regressions implemented. It will be possible to repeat the same analysis next year and verify the conclusions observed.

This chapter has been organized in five parts. In the first part, we introduce the topic that will be investigated, in the second part, we mention the literary revision of works on different capital markets, the third part describes the methodology followed at work, the fourth part shows the results obtained and finally the fifth one presents the conclusions.

2. Literature review

Çalişkan y Kerestecioğlu defined free float as the number of outstanding shares minus shares that are restricted from trading. The free float ratio is the quantity of shares available for public trading. Shares that are restricted from trading are called stable shareholdings, and include shares held by a parent company for control of a subsidiary, shares held by the government, and cross-shareholdings among companies. It has been said that the relationship between ownership structure and corporate performance has been a popular subject for researchers recently. Ownership structure studies mostly focus on firm performance, which is typically defined by accounting profit, or other metrics based on financial statements.

On the other hand, free float ratio studies examine the market performance of stocks. Free float ratio gives information about the ownership structure of a company. A low free float ratio indicates a concentrated ownership structure as well as a small and shallow market for stocks of that company. Free float ratio can affect stock prices in two ways. First, if the free float ratio is low, investors will tend to avoid that stock. Secondly, lower free float ratio means that there is less amount of shares in the market, which might cause low liquidity in the market for that stock. Investors dislike illiquidity. The authors examined the effect of free float ratio on market performance of stocks in Turkey. They attempt to answer the following questions; first, how much do free float ratios affect stock prices of selected firms? Second, do free float ratios affect

daily trading volume? Third, do free float ratios affect price volatility? For that research, 194 firms were selected from Istanbul Stock Exchange Market for the period from 25.02.2011 to 09.03.2012. The statistical method applied was linear regression. Results showed that there is no evidence of relationship between price return and free float ratio. In other words, investors did not pay more or less for stocks depending on whether free float ratio was considered to be high or low. On the other hand, there seems to be a positive relationship between free float ratio and price volatility. Finally, free float ratio is directly related to trading volumes. In other words, higher free float ratio results in higher liquidity in the market.

Bostancı and Kılıç examined the free float ratios effects on market performance of stocks in Turkey. Their research includes 199 listed firms on Istanbul Stock Exchange Market for the year 2007. The relationship between free float ratio and the dependent variables average daily closing price, price volatility and average daily trading activity is measured by regression models. Findings suggest that the market rewards higher floating ratio, that is, average daily closing price and trading activity is significantly higher for stocks with higher free float ratio. They also notice that price volatility, which is associated with the risk of a stock, increases with free float ratio. Finally, the effect of free float ratio on these variables is measured by controlling size of firms through a multivariable regression model. According to regression results, effects of floating ratio do not increase or decrease as the firm size increases or decreases. As a conclusion, these results are compatible with the previous studies and prove that free float ratio does matter for investors. Higher floating ratio implies higher market value for stocks, higher liquidity in the market and lower financial costs for corporations. They support suggesting initiatives to corporations and policy makers to increase floating ratios that will result on the decrease of financial costs and ensure capital market development. Although the regression results of the study are robust, the regressions depend on 1 year data, which contain all the sectors and eliminate the free float variations within a stock.

Chan et al. asserted that the intervention of the Hong Kong government offers a clear case for examining how market liquidity is affected by a substantial decline in free float. For many companies listed in Asian and emerging markets, government, controlling companies affiliated companies, and majority owners control a large percentage of the shares. As a result, the amount of shares outstanding considered available for trading could be relatively small. When investigating the liquidity of these markets, it is possible to determine the amount of free-floating shares available. The author also indicates that the amount of free-floating shares is often difficult to define, as it is not easy to determine the identity of ultimate beneficial owners. Sometimes, the trail becomes tangled and it is not possible to accurately monitor ownership across thousands of securities.

The same topic is addressed by other authors [8, 9] saying that in August 1998, after an intervention in the stock market by the Hong Kong government, there was a dramatic decrease in the amount of the shares in the market and this caused a decline on the free floats. The intervention of the Hong Kong government in the stock market offers a natural experiment to examining how the market liquidity was adversely affected by a substantial decline in free float in the market. The trading volume of the stocks listed in the Hang Seng Index (HSI) decreased substantially in 1999, while trading volumes of the group of control stocks did not decline. Also, stocks listed on the HSI experienced price increases. This showed that the government

intervention affected the liquidity of the Hang Seng Index (HIS) stocks. On the other hand, they did not find a relationship between free float ratio and price variations of the stocks.

O'shee et al. focused their studies on showing the level of ownership concentration in Latin American companies and explained the impact of this characteristic in the performance of the enterprises. For this, they analyzed 271 companies listed in five South American emerging markets with the methodology of panel analysis. They observed that in global markets, near 46% of a company's stock is concentrated in the hands of the three main shareholders and, for companies that operate in South American markets that percentage rises up to 70%. In the chapter, they concluded that, on an average, a stock portfolio conformed by companies with the greatest concentration of holdings generates higher yields than the yields produced by portfolio conformed by companies with less concentration of shareholdings. This indicates that stock investors require a higher yield, due to the greater risk they face as minority shareholders in companies with an elevated concentration of holdings. The investigation carried out for emerging countries, seem to show more homogeneous results; likewise, the positive interdependence between the concentration of ownership and the returns of the companies appears to be clearer.

Hardouvelis and Karalas studied the relation of expected stock returns with fund style concentration in stock ownership over the period 1997–2015. Their sample consists of common stocks trading on the NYSE, AMEX and NASDAQ between the first quarter of 1997 and the fourth quarter of 2015. The econometric results confirm the positive association and are robust to the inclusion of known risk-factors as determinants of expected stock returns, the returns of the investment styles themselves, plus a set of style-related control variables like liquidity, size, or volatility characteristics of stocks.

Ginglinger and Hamon [10] investigated how ownership concentration and the separation of ownership and control affect secondary-market liquidity in France. They found that firms with a large insider block holder exhibit significantly lower liquidity. However, different methods of enhancing control affect liquidity in different ways. Pyramidal structures impair market liquidity. Double voting right shares, a French specific method to control enhancement rewarding long-term shareholders and restraining insiders from trading their shares, lead to increased liquidity, especially for small firms. Their results suggest that by using double voting rights to enhance their control, a more transparent decoupling mechanism, rather than pyramidal methods, a more doubtfully decoupling mechanism, block holders offer higher secondary-market liquidity to outside investors.

3. Data and methodology

The objective of this chapter is to show if there is a relationship between floating capital ratios and volumes operated in stock markets, volatility of prices and performance of shares. For this, data compiled include Latin American companies at the end 2016. The total number of enterprises studied is 181 and they belong to Argentina, Brazil, Chile, Peru and Colombia. Data were obtained from Thomson Reuters Eikon platform. (For detail, see Appendices).

Information corresponds to companies that are included in the main indices of the countries under study, as shown in **Table 1**. and the data compiled concerns to the evolution of prices, their volatility and the volume traded during financial year 2016.

The applied statistical methodology is a simple linear regression, in which the magnitude of the floating capital ratio is used as the explanatory variable of the model. The explained variables are the Neperian logarithm of the annual percentage return (LREA), the annual volatility (DESV) and the annual average traded volume of shares, expressed in millions of the local currency of each country (VOLAM).

Volatility is a measure of the risk of price movements for a security calculated from the standard deviation of the day-to-day logarithmic historical price changes. The 260-day price volatility equals the annualized standard deviation of the relative price change for the 260 most recent daily trading closing prices, expressed as a percentage.

The volume was calculated based on the annual accumulated volume, divided by the number of working days of the year. The applied model is:

$$LREA_{ik} = \beta_0 + \beta_1 FREF_{ik} + \varepsilon_i \quad (1)$$

$$DESV_{ik} = \beta_0 + \beta_1 FREF_{ik} + \varepsilon_i \quad (2)$$

$$VOLAM_{ik} = \beta_0 + \beta_1 FREF_{ik} + \varepsilon_i \quad (3)$$

The variables are:

$FREF_{ik}$ is free float as a percentage of shares outstanding of the company i-th and of the country k-th.

$LREA_{ik}$ is the Neperian logarithm of the annual return in percentage of the company i-th and the country k-th.

$DESV_{ik}$ is the volatility of the i-th company and the k-th country.

$VOLAM_{ik}$ is the annual traded volume in millions of pesos of the i-th company in the country k-th.

COUNTRY	INDEX	Number of companies
Argentina	MERVAL	26
Brazil	BOVESPA	57
Chile	IPSA	39
Peru	I GENERAL	34
Colombia	COLCAP	25

Table 1. Size of sample.

The explanatory variable in the developed regressions is floating capital ratio (FREF). Floating capital can be used as a representative measure of market size, understood as the value of all shares outstanding for trading. The explained variable in the first regression (Eq.(1)) of the proposed model is "annual percentage returns" which is defined as the annual variation of prices of each share that compound the selected indices of each country. It is constructed as the Neperian logarithm of annual returns for each company that conforms the sample in each country. The annual returns are obtained as the quotient of the homogeneous prices at the end of 2016, "Price A_{it}", of the i-th company and those that correspond to the homogeneous price of the same company at the annual close of the previous year (2015), "Price $_{A\ i(t-1)}$". In order to obtain the percentages of variation, this result is multiplied by 100.

$$\mathrm{LREA}_{ik} = \ln\left(\frac{PriceA_{it}}{PriceA_{i(t-1)}}\right) * 100 \tag{4}$$

The next variable is annual typical deviation of the variation in prices (Eq. (2)) of shares from each country, which is used as a response variable. ($DESV_{ik}$).

A measure of the risk of price variation for a security is calculated from the standard deviation of day-to-day logarithmic historical price changes. The 260-day price volatility equals the annualized standard deviation of the relative price change for the 260 most recent daily trading closing price, expressed as a percentage.

Regarding the standard deviation, it must be borne in mind that it is a measure of risk in absolute terms. The higher the standard deviation, the greater variability of the assets price and therefore the greater its risk. It is a very useful statistical measure as long as the distribution of probability of the asset's performance is normal.

The third proposal uses the variable average daily traded volume of each i-th company ($VOLAM_{ik}$), (Eq. (3)) and is considered in millions of the currency of each country. Its calculation is performed as the accumulated annual volume divided by the days susceptible of negotiation between both dates.

4. Result

4.1. Descriptive analysis of the explained and explanatory variables

The importance of data is potential and it only becomes information when it is associated within a suitable context. Data must be analyzed and transformed; only in this way it produces knowledge and support decision-making.

To begin the analysis of the data the descriptive statistics, although it is very simple, it does become important in many studies. Results allow us to compare experimental evidences with theories and hypotheses, validating empirical arguments from mathematical models designed and adjusted by experts in the corresponding topic. For this reason, descriptive statistics of the variables used in the model proposed in this chapter are carried out.

O'shee et al. mentioned in his article that Latin American companies that are publicly traded are characterized as being highly concentrated. In them, they clearly identified that majority shareholders can be of great strength for the firm due to their active position within it and because they represent a financial source for company in times of crisis.

The first variable to describe is floating capital, which is studied by different authors obtaining interesting results.

In Argentina, the ownership structure changed dramatically in the nineties, when almost all state enterprises were privatized; but even so, high levels of concentration were maintained. This can be seen in the fact that the 20 largest companies show majority shareholders that hold around the 65% of the capital. In Brazil, on average, main shareholder own 41% of the firm, while the most important five hold 61%. In Chile and Peru, it is shown that the first three major shareholders own about three quarters of all shares. Colombia shows the lowest level of concentration and numbers are similar to those held by companies in Europe and Asia [5].

Table 2 gives the descriptive statistics for Free Float ratio divided into quartiles. It is possible to observe 60.22% (15.47 + 44.75%) of the companies included in the sample have less than 50% of their free float listed in the market.

In the selected temporal space and in this sample, it is possible to affirm that Brazil is the country where stocks that make up the BOVESPA index have the highest percentage of free float on the market. Since 61.40% (17.54 + 43.86%) of its companies have free float higher than 50% and there is no company with less than 25% of their capital as free float.

The opposite situation is what we found in Chile. In its capital market the 87.18% (20.51 + 66.67%) of the stocks in the 39 companies that make up the IPSA Index are property of the major shareholders.

In Argentina, these numbers change substantially and are more similar to Chile if the holdings of the FGS are incorporated as part of the majority shareholders holdings. **Table 3** shows how the FREF is modified if the FGS holding is considered. It is called FREF adjusted (FREF AJUS) to that difference. In Colombia, 68% of the companies that are part of the index have major-

COUNTRY	Sample	Companies with FREF <25%		Companies with FREF >25% ^FREF <50%		Companies with FREF >50% ^FREF <75%		Companies with FREF >75%	
Argentina	26	5	19.23%	12	46.15%	4	15.38%	5	19.24%
Brazil	57	0	0.00%	22	38.60%	10	17.54%	25	43.86%
Chile	39	8	20.51%	26	66.67%	3	7.69%	2	5.13%
Peru	34	9	26.47%	10	29.41%	3	8.82%	12	35.30%
Colombia	25	6	24.00%	11	44.00%	1	4.00%	7	28.00%
TOTAL	181	28	15.47%	81	44.75%	21	11.60%	51	28.18%

Table 2. Descriptive analysis of FREF in different countries.

Companies	FREF	FGS	FREF AJUS
Banco Macro SA	61.59	30.97	30.62
San Miguel SA	46.86	26.96	19.90
Edenor SA	51.00	26.81	24.19
Consultatio SA	31.07	26.62	4.45
Distribuidora Gas Cuyana SA	30.00	26.62	3.38
Siderar SA	39.06	26.03	13.03
Telecom SA	96.14	24.99	71.15
Pampa Energía SA	84.31	23.23	61.08
Trans. Gas Sur SA	49.00	23.11	25.89
Mirgor SA	51.74	21.54	30.20
Grupo Financiero Galicia SA	88.40	21.28	67.12
Transener SA	47.35	19.57	27.78

Table 3. Details of free float adjusted in different companies in Argentina.

ity shareholding participation in more than 50%. This is similar to the average mentioned in another article written by different authors [5].

Investors obtain returns for their investments in shares by two ways: dividens and price appreciation. In most Latin American markets, the payment of dividends is irregular and it is not of significance, therefore price differential is what is important for investors. **Table 4** shows the descriptive statistics for the Neperian logarithm of the annual return (LREA Eq. (4)) in percentage of the companies in different countries. These exposed values are not comparable, since this return is in the countries own currencies but it allows us to observe some extreme values, average and individual deviation of each country individually.

It is observed that in all the indexes analyzed, there were stocks whose prices in 2016 fell compared to the previous year. In the case of Argentina, only 2 shares out of 26 maintained that negative behavior, even including 8 companies whose yields were higher than 100%. The average value of the variable LREA is 52.71 and the standard deviation is 39.33. The country with the smallest range of variation of the variable shown in **Table 4** is Colombia. Only one company has a slight negative variation in its price and only one has yields over 100%.

Observing the volatility in **Table 5**, which is a measure of the risk of price movements for a value calculated from the standard deviation of the historical changes in daily logarithmic prices, it can be seen that the highest volatility is found in Peru and Brazil. The variable DESV reached values of 97.53 and 64.75 respectively. The minimum value is also obtained by Brazil in a magnitude of 8.43.

Once the descriptive analysis of the relevant variables has been carried out, an analysis of the results of the regression is accomplished.

COUNTRY	Sample	Mean	Std. Dev	Min	Max
Argentina	26	52.71	39.33	−18.68	129.43
Brazil	57	36.44	37.32	−62.95	137.62
Chile	39	13.63	23.7	−33.15	99.43
Perú	34	51.92	37.15	−8.01	137.63
Colombia	25	17.81	17.01	−0.22	75.32

Table 4. Descriptive analysis of LREA in different countries.

4.2. Results of the regressions

The results of this work, based on an empirical study, seek to assess the relationship between the magnitude of the floating capital ratio and the selected market indicators such as the traded volume, annual returns and the standard deviation of price variation. According to Çalişkan and Kerestecioğlu, a high floating capital ratio is positive for investors in case they need to exercise their rights after buying shares. The results of the regression model proposed in the equation (Eq. (1)) are calculated and shown in **Table 6**.

FREF coefficient (β1) (Eq.(1)) is negative and statistically insignificant for Argentina, so it can be concluded that for the analyzed data there is no relationship between price variation and floating capital ratio. For Brazil and Chile, there is direct relationship but no significance.

For the case of Colombia and Peru this relationship, according to the results obtained, is direct and statistically significant. Therefore, it is concluded that the results obtained are not of equal sense and importance in all the countries analyzed.

Price volatility (DESV) regression is performed for the floating capital ratio. Results are shown in **Table 7**.

FREF coefficients(β1) (Eq.(2)) are negative and statistically insignificant for Argentina and Chile, so it can be concluded that for the analyzed data, there is no relationship between price volatility and floating capital ratio. For Brazil and Colombia, there is direct relationship but no significance.

COUNTRY	Sample	Mean	Std. Dev	Min	Max
Argentina	26	36.71	6.15	28.93	48.44
Brazil	57	34.16	11.35	8.43	64.75
Chile	39	23.74	7.72	14.68	47.45
Peru	34	34.35	20.16	12.90	97.53
Colombia	25	18.22	5.5	10.62	35.03

Table 5. Descriptive analysis of DESV in different countries.

Country	LREA	Coef.	Std.Err.	t	P > |t|	[95% Conf.Interval]	
Argentina	FREF	−0.2787	0.3127	−0.89	0.382	−0.9242	0.36671
	_cons	66.68	17.48	3.81	0.001	30.60	102.77
Brazil	FREF	0.1425	0.1959	0.73	0.47	−0.2501	0.5353
	_cons	26.91	14.00	1.92	0.06	−1.15	54.98
Chile	FREF	0.2622	0.2181	1.2	0.237	−0.1798	0.704
	_cons	4.00	8.85	0.45	0.654	−13.93	21.95
Perú	FREF	0.399	0.175	2.28	0.029	0.04313	0.7565
	_cons	30.86	11.00	2.80	0.008	8.45	53.28
Colombia	FREF	0.2767	0.0939	2.95	0.007	0.08245	0.471144
	_cons	4.62	5.37	0.86	0.398	−6.49	15.73

Table 6. Estimated coefficients, standard errors and significance of variables. Variable response LREA.

In the case of Peru, this relationship, according to the results obtained, is direct and statistically significant. Therefore, it is shown again that the results obtained are not of equal sense and important in all the countries studied.

The coefficient of FREF (β1)(Eq. (2)) for Peru is 0.2939 and significant at 5% level as P > |t| is 0.041. This suggests that FREF is significantly positive correlated with price volatility. Higher free float ratio means higher risk for the stock. Peru was the only Latin American country analyzed which shows a coefficient of significance.

Finally, the results of the regression proposed in Eq. (3) that seeks to prove whether there is a relationship between the volume traded and the floating capital ratio are shown in **Table 8**.

Country	DESV	Coef.	Std.Err.	t	P > |t|	[95% Conf.Interval]	
Argentina	FREF	−0.0486	0.0487	−1	0.329	−0.1492	0.05198
	_cons	39.14	2.73	14.37		33.52	44.77
Brazil	FREF	0.0132346	0.0598	0.22	0.826	−0.1067	0.1332
	_cons	33.28	4.28	7.78		24.70	41.86
Chile	FREF	−0.00305	0.0724	−0.04	0.967	−0.1498	0.1437
	_cons	23.85	2.94	8.11		17.89	29.81
Peru	FREF	0.2939	0.0959	2.13	0.041	0.0084	0.399
	_cons	23.61	6.03	3.92		11.33	35.89
Colombia	FREF	0.00757	0.0355	0.21	0.833	−0.066	0.081199
	_cons	17.85	2.03	8.78		13.65	22.07

Table 7. Estimated coefficients, standard errors and significance of the variables. Variable response DESV.

Country	VOLAM	Coef.	Std.Err.	t	P > |t|	[95% Conf.Interval]	
Argentina	FREF	0.0944	0.069	1.37	0.185	−0.0482	0.237
	_cons	3.3073	3.863	0.86	0.4	−4.66	11.28
Brazil	FREF	0.377	0.5232	0.72	0.473	−0.6708	1.4263
	_cons	61.06	37.40	1.63	0.108	−13.89	136.01
Chile	FREF	2.0296	12.76	0.16	0.875	−23.8373	27.89
	_cons	1278.75	518.03	2.47	0.018	229.11	2328.38
Perú	FREF	6.39	7.167	0.89	0.379	−8.2	20.9898
	_cons	576.87	450.35	1.28	0.209	−340.47	1494.21
Colombia	FREF	36.7117	29.7348	1.23	0.229	−24.799	98.223
	_cons	2490.83	1699.5	1.73	0.097	−574.85	6456.51

Table 8. Estimated coefficients, standard errors and significance of variables. Variable response VOLAM.

The coefficients (Eq. (3)) that result from the regression for all countries are not statistically significant. Unlike what Caliskan and Keresteciogluu (2013) say, we find that for the countries under study and for this temporary space, it is not possible to demonstrate that there is a relationship between both variables.

5. Conclusion

Floating capital ratio can affect the price of shares in two ways: first, a small quantity of shares can make a stock unattractive to investors, and second, a low floating capital in the market represents less amount of shares available to negotiate, which can cause inadequate liquidity [7]. These statements make it possible to conclude that a low floating capital ratio has the effect of reducing the value of shares due to insufficient demand from investors [11].

Different authors studied the effect of stock property concentration on stock return (7), others address the adverse change in market liquidity of stocks as a result of the decrease in free float (6), or the effect of the free float ratio (FFR) on stock return, risk, and trading activity (8).

This study documented the effects of floating capital ratio on price returns, price volatility and traded volume in Latin American capital markets. Data from 181 firms listed at the end of 2016 was used. These enterprises are part of the most representative indices of each market based on traded volume or market capitalization. Results obtained applying linear regressions methods show different situations in each country.

It is observed, for this temporary space and according to the sample requested, that in the case of Argentina, free float ratio is not statistically significant in the variation share prices. Volatility or the negotiated volume presents an inverse relationship with floating capital.

In the studies made for the countries of Peru and Colombia, we found that greater floating capital affects profitability in a positive way but only in Peru, it is possible to say that a greater floating capital affects volatility in stock prices. For the case of Chile and Brazil, it is not possible to obtain conclusions since results were not significant.

As a conclusion, these findings are compatible with the previous studies and prove that free float ratio does matter for the investors. Higher floating ratio implies higher market value for stocks for the cases of Peru and Colombia. Therefore, these results provide empirical evidence for the growing practice of weighting stocks according to free float ratio for the construction of indexes. They also support designing incentive measures to present to corporations and policy makers for enlarging floating ratios that will decrease cost of capital and ensure capital market development. Although the regression results of this study were robust and clear, it depends on 1-year data, which eliminates the free float variations within a stock. Therefore, examining effects of free float ratio for different sectors or for firms whose floating ratios change substantially within a time horizon may bring interesting results for further studies [11].

The study shows that there is no relationship between floating capital ratio and the traded volume for this temporary space and for the companies selected. It will be possible to repeat the same analysis next year and check whether these conclusions can be different or continue ratifying the current results.

Nevertheless, this study presents two limitations: the first is the use of data from a cross-sectional sample, that is, it takes data corresponding to a set of companies for a moment in time, and the other limitation is that the selected companies are only those that make up the indexes, due to the availability of public information.

Future lines of research can be oriented to confirm if the results obtained in the present study (2016 period of analysis) are maintained over the years and to integrate the findings of effects of stock concentration of property (government holdings and majority shareholders)on stock return (7) with the effects of the floating capital ratio in stock markets.

Appendices

No.	Companies	FREF	DESV	VOLAM	LREA
1	Agrometal SA	45.20	48.00	1.66	129.44
2	Petrolera Pampa SA	36.90	33.12	1.45	110.63
3	Autopistas del Sol SA	100.00	39.10	0.86	105.61
4	Petróleo Brasilero SA	49.58	39.94	41.18	101.46
5	Holcim SA	20.39	36.54	3.79	101.27
6	San Miguel SA	46.86	40.44	3.26	89.03
7	Central Costanera SA	24.32	48.17	2.39	80.22
8	Central Puerto SA	20.98	33.35	2.58	70.39
9	Distribuidora Gas Cuyana	30.00	48.45	0.97	65.12
10	Pampa Energía	84.31	33.19	19.94	64.00
11	Trans. Gas Norte	20.01	43.14	0.61	63.23
12	Transener SA	47.35	43.18	4.40	59.87
13	Trans. Gas Sur	49.00	36.05	2.34	56.05

No.	Companies	FREF	DESV	VOLAM	LREA
14	Tenaris SA	39.45	28.94	9.62	56.04
15	Edenor SA	51.00	33.52	5.12	50.84
16	Mirgor SA	51.74	46.99	7.56	44.76
17	Cresud SA	69.19	30.86	11.78	33.00
18	Telecom SA	96.14	32.30	4.68	28.26
19	Banco Macro SA	61.59	34.65	10.58	26.37
20	Y.P.F. SA	48.99	33.66	19.38	17.11
21	Consultatio SA	31.07	31.18	3.69	15.73
22	Grupo Financiero Galicia SA	88.40	31.23	19.96	15.16
23	Siderar SA	39.06	32.79	9.00	14.89
24	Banco Francés SA	24.05	29.71	8.27	4.56
25	Aluar Aluminio SA	27.42	31.55	5.29	−13.74
26	Comercial del Plata	100.00	34.43	8.63	−18.68

N 1. Information of companies of the MERVAL-ARGENTINA. *Source*: Thomson Reuters Eikon.

No.	Companies	FREF	DESV	VOLAM	LREA
1	AMBEV ON/d	28.07	18.82	235.53	−4.89
2	BRASIL ON/d	37.54	41.14	202.68	68.99
3	BRADESCO ON/d	26.05	28.14	39.69	49.15
4	BRADESCO PN/d	97.76	28.38	295.73	55.22
5	BBSEGURIDADE O/d	33.69	26.95	125.92	21.15
6	BRADESPAR PN/d	98.55	47.59	25.80	109.83
7	BRF FOODS ON/d	95.31	29.14	113.18	−11.06
8	BRASKEM PNA/d	54.93	33.50	39.14	32.08
9	BR MALLS PAR O/d	95.55	33.33	61.78	33.62
10	BMF BOVESPA ON/d	97.56	26.12	173.57	44.64
11	CCR RODOVIAS O/d	48.78	34.04	70.43	28.66
12	CIELO ON/d	41.20	29.58	161.20	1.31
13	CEMIG PN/d	92.57	47.51	51.03	34.89
14	CPFL ENERGIA O/d	66.11	8.43	37.14	54.28
15	COPEL PNB/d	78.74	39.36	18.38	16.18
16	COSAN ON/d	37.71	31.31	33.85	48.44
17	SID NACIONAL O/d	44.30	53.53	65.68	99.79
18	CYRELA REALT O/d	64.38	37.91	24.99	34.05

No.	Companies	FREF	DESV	VOLAM	LREA
19	ECORODOVIAS ON/d	35.75	38.86	23.71	51.07
20	ENGIE BRASIL/d	31.29	19.14	31.99	9.42
21	ELETROBRAS ON/d	31.67	64.75	30.69	137.63
22	ELETROBRAS PNB/d	92.78	53.89	30.49	90.82
23	EMBRAER ON/d	94.59	28.90	49.50	−62.96
24	ENERGIAS BR ON/d	48.73	24.15	28.92	21.02
25	EQUATORIAL ON/d	100.00	21.24	51.94	48.45
26	ESTACIO PART O/d	85.56	46.02	34.04	24.55
27	FIBRIA ON/d	41.46	38.56	66.09	−46.93
28	GERDAU PN/d	80.12	43.31	106.64	84.73
29	GERDAU MET PN/d	98.30	53.56	69.32	106.18
30	HYPERMARCAS ON/d	59.15	21.69	70.54	20.28
31	ITAUSA PN/d	82.95	24.34	163.42	36.01
32	ITAUUNIBANCO P/d	100.00	26.12	413.68	40.52
33	JBS ON/d	34.21	63.82	94.75	−3.42
34	KLABIN UNT/d	100.00	28.91	49.31	−25.21
35	KROTON ON/d	93.54	36.46	123.05	36.22
36	LOJAS AMERIC P/d	64.99	35.56	37.49	5.63
37	LOJAS RENNER O/d	84.98	29.34	71.43	32.46
38	MARFRIG ON/d	42.63	35.65	15.75	4.01
39	MRV ON/d	64.46	29.14	30.25	26.13
40	MULTIPLAN ON/d	69.33	26.80	37.64	45.48
41	NATURA ON/d	40.04	38.52	33.76	−0.32
42	P.ACUCAR-CBD P/d	93.82	33.47	46.56	26.87
43	PETROBRAS ON/d	49.58	35.49	149.59	68.14
44	PETROBRAS/d	76.06	39.92	586.91	79.72
45	QUALICORP ON/d	100.00	34.98	33.75	41.50
46	RAIADROGASIL O/d	67.38	24.07	63.75	55.51
47	RUMO/d	90.69	43.83	43.57	−1.62
48	LOCALIZA ON/d	71.94	32.22	34.90	34.93
49	SANTANDER BR U/d	100.00	35.14	25.78	66.88
50	SABESP ON/d	49.74	33.87	49.88	42.86
51	TRANS ALIANCA /d	100.00	23.43	22.76	34.80
52	TIM PART ON/d	33.40	23.65	21.35	15.86
53	ULTRAPAR ON/d	70.07	21.01	87.84	14.74

No.	Companies	FREF	DESV	VOLAM	LREA
54	USIMINAS PNA/d	79.38	55.02	70.18	98.96
55	VALE ON/d	39.64	41.91	126.03	68.43
56	TELEF BRASIL P/d	37.09	18.80	84.72	25.28
57	WEG ON/d	35.65	27.10	32.05	6.14

N 2. Information of companies of the BOVESPA- BRAZIL. *Source*: Thomson Reuters Eikon.

No.	Companies	FREF	DESV	VOLAM	LREA
1	AGUAS ANDINAS /d	32.60	24.46	1875.71	−5.16
2	EMB ANDINA B/d	39.44	24.05	642.72	16.35
3	ANTAR CHILE/d	3.94	17.53	164.13	1.50
4	AESGENER/d	30.42	28.01	1043.89	−27.06
5	BANMEDICA/d	31.58	21.65	179.14	22.92
6	BCI/d	34.95	18.20	1686.37	25.67
7	CAP/d	36.70	47.46	1563.67	99.43
8	CMPC/d	39.36	22.08	1935.19	−11.52
9	CERVECERIAS UN/d	16.41	17.40	1822.74	−12.03
10	CENCOSUD/d	39.74	17.24	5408.48	28.12
11	BANCO DE CHILE/d	20.78	15.87	2171.01	10.67
12	SM BANCO CHILE/d	100.00	14.69	437.37	15.04
13	VINA CONCHA TO/d	31.88	16.96	741.81	0.68
14	COLBUN/d	35.31	20.23	1286.89	−25.31
15	EMPRESAS COPEC/d	25.24	21.82	2049.63	4.95
16	ENGIE ENERGIA /d	44.49	18.19	837.73	7.14
17	EMBONOR B/d	62.27	20.89	276.32	27.81
18	ENEL AMERICAS/d	43.90	19.09	3289.75	2.88
19	ENEL GENERACIO/d	34.65	20.15	2537.08	−33.15
20	ENTEL/d	35.89	19.93	1551.88	11.35
21	FALABELLA/d	33.19	17.36	6052.37	16.21
22	FORUS/d	26.52	25.64	353.92	25.35
23	IAM SA/d	24.33	26.74	422.19	−3.38
24	INV LA CONSTRU/d	24.99	27.41	358.04	13.97
25	ITAU CORPBANCA/d	22.07	18.18	1847.03	−4.05
26	LATAM AIRLINES/d	47.24	26.17	2830.31	42.08
27	MASISA/d	30.04	39.45	138.35	61.44

No.	Companies	FREF	DESV	VOLAM	LREA
28	ORO BLANCO/d	20.23	44.67	293.03	12.92
29	PARQ ARAUCO/d	55.80	19.09	1145.36	29.15
30	QUINENCO/d	14.82	23.45	217.47	23.11
31	RIPLEY CORP/d	28.79	22.70	561.83	30.36
32	SMSAAM/d	39.89	22.23	209.26	14.04
33	SALFACORP/d	76.21	38.17	146.27	25.65
34	GRUPO SECURITY/d	37.53	21.00	221.15	17.42
35	SIGDO KOPPERS/d	34.82	22.82	165.11	0.00
36	SONDA/d	47.88	20.89	1190.40	−6.19
37	SOQUIMICH B/d	69.93	30.30	2667.48	35.55
38	SANTANDER CHIL/d	29.82	18.84	2065.53	14.44
39	VAPORES/d	27.98	35.02	390.35	23.39

N 3. Information of companies of the IPSA-CHILE. *Source*: Thomson Reuters Eikon.

No	Companies	FREF	DESV	VOLAM	LREA
1	ALICORP/d	75.66	16.88	6561.95	24.71
2	ANDINO INVEST/d	26.12	40.47	24.85	53.41
3	AUSTRAL GROUP/d	10.65	46.15	16.18	18.92
4	BCO CONTINENTA/d	7.76	20.10	2211.62	56.07
5	CEM PACASMAYO/d	49.99	18.76	4011.91	30.50
6	BUENAVENTURA/d	49.36	36.13	282.66	67.59
7	ATACOCHA/d	100.00	50.25	151.22	137.63
8	CREDICORP/d	65.20	20.04	1035.22	49.67
9	ENGEPE/d	16.40	26.82	623.63	13.91
10	ENEL DIST PERU/d	100.00	23.29	351.87	23.19
11	CASA GRANDE/d	37.57	26.96	124.55	71.69
12	FERREYROS/d	100.00	22.88	1720.30	29.01
13	GRANA Y MONTER/d	77.08	82.84	2513.65	89.05
14	INRETAIL PERU/d	27.31	14.06	865.85	32.52
15	INTERGROUP/d	42.95	17.69	2564.01	38.68
16	INV CENTENARIO/d	62.90	23.92	10.99	−8.00
17	LUZ DEL SUR/d	16.07	16.49	495.57	40.53
18	MINSUR/d	100.00	28.88	717.87	87.55
19	PANORO/d	82.84	57.10	13.36	76.64

No	Companies	FREF	DESV	VOLAM	LREA
20	RELAPASA/d	17.62	37.21	243.67	70.61
21	SIDER/d	9.97	36.91	78.47	109.86
22	CERRO VERDE/d	5.86	29.48	84.56	32.16
23	MINERA EL BROC/d	35.27	31.55	38.58	33.35
24	TREVALI MINING/d	98.99	51.46	44.58	87.31
25	BACKUS JOHNSTO/d	11.10	19.94	94.79	26.11
26	UNACEM/d	32.33	24.79	924.05	46.95
27	ACEROS AREQUIP/d	100.00	34.65	490.94	65.54
28	SOUTHERN COPPE/d	10.56	24.19	99.80	24.69
29	VOLCAN MINERA/d	100.00	36.03	2856.84	135.67
30	BOLSA DE VALOR/d	74.47	12.91	8.57	5.11
31	CANDENTE/d	95.77	97.53	5.06	35.67
32	ENGIE ENER PER/d	38.23	15.01	1776.72	14.15
33	PERUV METALS/d	87.10	77.51	12.57	126.69
34	VOLCAN MINERA/d	25.75	49.13	2.72	18.23

N 4. Information of companies of the I GENERAL-PERU. *Source*: Thomson Reuters Eikon.

No	Companies	FREF	DESV	VOLAM	LREA
1	ECOPETROL/d	10.97	22.50	15747.98	21.77
2	EEB/d	18.99	11.96	947.38	5.10
3	GRUPOAVAL/d	2.25	19.11	291.99	7.93
4	PFAVAL/d	47.19	14.68	4687.84	10.86
5	BCOLOMBIA/d	34.94	19.97	7916.54	18.41
6	PFBCOLOM/d	97.55	19.69	19438.60	22.98
7	ISA/d	36.49	15.20	3435.78	30.18
8	BOGOTA/d	10.46	20.16	743.53	1.17
9	GRUPOSURA/d	46.38	14.33	8267.88	6.77
10	PFGRUPSURA/d	89.93	14.63	5078.49	6.13
11	GRUPOARGOS/d	74.54	16.44	4273.79	17.41
12	PFGRUPOARG/d	92.98	15.17	3074.15	17.16
13	CEMARGOS/d	35.45	16.58	6257.46	19.90
14	PFCEMARGOS/d	92.02	14.26	2854.31	15.54
15	NUTRESA/d	41.06	10.62	3821.21	9.60
16	PROMIGAS/d	11.53	28.08	41.74	3.92

No	Companies	FREF	DESV	VOLAM	LREA
17	EXITO/d	35.39	12.76	9485.99	9.87
18	CORFICOLCF/d	36.26	24.75	3747.63	−0.22
19	CLH/d	25.12	18.70	3531.05	9.27
20	PFDAVVNDA/d	92.40	15.97	7224.65	31.93
21	CELSIA/d	42.99	13.66	1293.18	36.29
22	ETB/d	10.57	18.28	551.91	14.50
23	CNEC/d	80.07	24.66	1183.16	50.88
24	CONCONCRET/d	26.21	18.30	322.47	2.74
25	PFAVH/d	100.00	35.04	3052.93	75.33

N 5. Information of companies of the COLCAP- COLOMBIA. Source: Thomson Reuters Eikon.

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Chapter 4

Ask of National Pension Service for Higher Dividend and Firm Value: Evidence from Korea

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Additional information is available at the end of the chapter

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Abstract

In this chapter, we examine the effect of ask of Korea's National Pension Service for higher dividend on the firm value. There is a conflicting view on the dividend pressure of the National Pension Service. First, the dividend pressure of the National Pension Service contributes not only to reducing the agency problem, which is a disadvantage for Korean companies' ownership management, but also to reducing the Korea discount, which is a low dividend. The other hand, it is the so-called pension socialism that National Pension Service engages in the dividend policy which is the essence of corporate management with a high stake. This study is conducted on Korean listed companies from 2011 to 2016 and has constructed a test sample using propensity score matching. The results show that the dividend pressure of National Pension Service doesn't have a significant effect on the firm value. This study is expected to provide useful information for pension funds to exercise voting rights. Also, this study is expected to provide further evidence of a study that verifies the relationship between dividend and firm value by examining the effect of external pressures on dividend policy on firm value.

Keywords: National Pension Service, dividend policy, firm value, pension funds, voting rights

1. Introduction

The purpose of this study is to analyze the effect of the demand for higher dividends of Korea's National Pension Service (NPS) on firm value. The NPS is one of the top three pension funds in the world, together with Japan's public pension fund and Norwegian sovereign fund. At the same time, it is one of the fastest growing pension funds in the world. The NPS is expected to grow to $ 1.21 trillion by 2025, from $ 0.54 trillion in the first quarter of 2017. According to the

investment portfolio of the NPS, the portion of bonds invested in the first quarter of 2017 is 53.3% and the share of equity investments is 35.1%. Domestic equity investment accounted for 19.6% of total assets, and it reaches about 6.83% of the total amount. As of the second quarter of 2017, the NPS is the largest or the second largest shareholder of Korea's major conglomerates, including Samsung Electronics, Naver, and Hyundai Motor, and has more than 5% stake in more than 20% of the top 10 listed companies.

As the funding of the NPS grows, the returns of the pension funds become more important. This is because the yield of the national pension is linked to the welfare level of the people and the old age. As the low interest rate policy and the low growth trend have prolonged since the financial crisis, the NPS has been steadily demanding to increase the dividend to major domestic corporations in order to improve the pension management profit rate. Moreover, as the Enforcement Decree of the Capital Market Law was revised at the end of 2014 in Korea, NPS could demand dividends from invested companies even if the purpose of holding them is not management participation. This means that the government has provided legal grounds for the NPS to ask domestic companies to increase their dividends. In addition, the government has also encouraged companies to increase their dividends by introducing corporate taxation system for reserves for a limited period starting from 2014 in order to increase household incomes and stimulate investment of companies.

Although the dividend payout ratio and dividend ratio still do not reach the global level, cash dividends of Korean companies have increased sharply since 2014. The increase in dividend size is attributed to the increased demand from shareholders for dividends, including the NPS, and the government's policy to increase dividends. According to a recent survey of wealth management experts, more than half of the respondents said they should raise their dividend pressure levels above current levels. In addition, among some companies, dividends are considered to be effective in improving corporate image and investment, and companies are expected to participate in additional dividends.

In the meantime, Korean companies have been criticized by shareholders for their low-dividend payout ratio. In 2017, the global dividend yield is 2.48%, 2.46% in advanced economies, and 2.6% in emerging economies. However, in Korea, the average dividend yield of 522 companies, which made cash dividends in December 2016, is only 1.8%. According to market researcher Thomson Reuters, Korean listed companies' dividend levels in the first half of 2016 were 16th among 17 major countries. It has been pointed out that the dubious propensity of Korean companies to pay dividends in the global market hinders investment sentiment in the Korean market, resulting in "Korea discount." Under this circumstance, dividend pressure of the NPS contributes to resolving Korea discounts and realizes the high value of shareholder return through active voting rights and shareholder rights exercises.

Moreover, the top 30 of Korean companies recorded the highest surplus in 2017. In the case of firms with high free cash flow, it is known that active cash distribution is favorable for shareholders because it can suppress managerial pursuit of private interests and enhance the monitoring function of capital markets [1, 2]. In this situation, the increase of the dividend of Korean companies can contribute to reducing the agency cost and strengthening the distribution function of profit. In addition, in the prolonged low-interest-rate framework, firms'

dividend increases can transform investors who have made short-term investments into long-term investors, which can increase the investment assets of companies and create jobs through investment.

On the other hand, there are opinions that it is not appropriate for the NPS to exercise dividend pressure with the voting rights as a weapon when management risks are high due to its opaque management environment. Determination of the dividend rate is one of the core management decisions of the enterprise. If the NPS directly demands the high dividend, companies will be severely constrained by financial strategy. At present, the investment tendency of Korean companies is considerably high compared with developed countries, and facility investment has also slowed down during the financial crisis but has steadily increased since 2002. Therefore, the increase of corporate dividend by NPS can reduce the entrepreneurial motivation of companies and lead to decrease of firm value.

In addition, the industrial structure of Korea is highly composed of industries with low dividend payout such as IT, automobile, and industrial goods, while the ratio of industries with high dividend payout such as finance, utility, and consumer goods is relatively low. Since the industrial structure is very sensitive to the global economy compared to developed countries with high dividend payout ratio, simple comparison of dividend payout ratio between countries may not be appropriate. Also, if free cash flow is cash dividend payable, other companies except the top 10 Chaebol group's companies cannot afford dividends. Therefore, it is unreasonable for the pension fund to make long-term investment decisions to pursue short-term high returns by high dividends.

While the expectation and concern about the dividend pressure of the NPS coexist, we examine whether the dividend increase of Korean companies due to ask of NPS has an effect on the firm value. Specifically, firm value is measured by Tobin's Q, and the dividend pressure of the NPS is measured through the intersection of the NPS's more than 5% stake and the dividend level.

Most of the results show that NPS's dividend pressure does not have a significant effect on firm value. However, it is confirmed that there is a significant positive relation between dividend level and firm value. In other words, Korean listed companies may consider increasing dividends as one of the ways to increase corporate value. In addition, firms with large shareholdings of NPS tend to have high corporate value. This implies that the expansion of the investment of the NPS to domestic enterprises improves the corporate value and the improved corporate value results in the better performance of the NPS, the largest shareholder, that is, a virtuous cycle structure is established. On the other hand, NPS dividend pressure has a negative effect on firm value in some analyzes after controlling endogeneity and heterogeneity, however, this is not the result of consistency in all analyses, so it is appropriate to generalize it through further studies in the future.

The contribution of this study is as follows. First, I examine the relationship between corporate dividend policy and firm value. The previous study focused on verifying the relationship between firm value and dividend policy determined by the firm itself. On the other hand, this study examines the relationship between corporate value and dividend policy based on the demand of NPS rather than voluntary decisions by companies. I have noted the special

situation in Korea that pension funds can actively participate in the corporate dividend policy of their own country. The two-way causality between the dividend policy and the corporate value, which is a limitation of the existing research, is solved by the external pressure of the demand for the NPS.

Second, this study measures the main verification variables as the dividend level of a firm with a large share of the national pension. I tried to derive a more accurate empirical result by correcting the possible self-selection bias using propensity score matching (PSM). Also, I present the result of calibrating endogenous and heteroscedasticity using fixed-effect panel analysis and 2-stage least squares regression analysis (2SLS) for matched samples using PSM to mitigate self-selection bias.

Finally, the results of this study confirm that Korean companies have a positive relationship between dividend level and firm value. In addition, the fact that the NPS has a large share of corporate ownership has a positive effect on corporate value. Most of my results show that the dividend pressure of the national pension is not related to the enterprise value. However, when using 2SLS to control endogeneity, it is confirmed that the dividend pressure of the national pension has a negative effect on corporate value. The results of this study are expected to provide useful information for business executives related to corporate dividend policy or for voting right of NPS.

2. Preliminary research and hypothesis setting

2.1. The relationship between dividend and firm value

The study of the relationship between dividend and firm value has been a major research topic in finance and accounting for a long time. In this section, we introduce the major hypotheses that explain the relationship between dividend and firm value, such as free cash flow hypothesis, dividend clientele hypothesis, and dividend catering hypothesis.

First, the free cash flow hypothesis argues that dividend has the effect of decreasing free cash flow and alleviating the agency problem, thereby increasing firm value. In other words, the surplus cash flow hypothesis predicts the positive relationship between dividend and firm value. Ref. [3] shows that there is a positive relationship between dividend and firm value, and this relationship is stronger in countries where investor protection is weak. Ref. [4] finds that there is a positive relationship between dividend and firm value. They interpreted the scale of dividend as having the ability to predict future profit in the context of the signal effect hypothesis of dividend.

Second, dividend clientele hypothesis does not predict the monotonic direction of the relationship between dividend and firm value. In this hypothesis, investor groups have diverse preferences and decide dividend policy to satisfy this preference. Ref. [5] argued that investors with high marginal tax rates tended to construct portfolios based on stocks with low dividend yields. Refs. [6, 7] found that the effect of dividend size change disclosure on share price is greater for firms with higher dividend yields, suggesting the existence of a group of preferred investors.

According to the dividend catering hypothesis proposed by Ref. [8], the relationship between dividend and firm value is time varying that is not stable. Company's dividend policy depends on how the market value of a company that paid dividends is evaluated compared to a company that does not pay. They first define the dividend premium as the difference in average market value between the companies that pay dividends and those that do not, and then find that many companies pay dividends in the year with a positive dividend premium, and that many firms omit dividends in negative years. Thus, according to this hypothesis, dividend and firm value are in a time-varying relationship with positive or negative relations depending on the year.

2.2. Hypothesis setting

Ref. [9] compares the accounting characteristics of firms with large shareholdings of NPS to those that do not. Companies with a large share of the NPS are found to have higher profits and growth potentials and lower PERs than those that do not. In the case of stability, the ratio of debt to equity is reduced after the NPS has acquired a large amount of stake, suggesting that the NPS requires improvement of the financial structure of the enterprise. Companies with a large share of the NPS have lower payout ratio than those that do not, which supports the government's claim that it should strengthen the voting power of the NPS in relation to dividends.

Dividend payout ratio of corporate Korea is the lowest level in the major economies, and low payout ratio results in a "Korea discount" to undermine investor sentiment in South Korea companies in the global market. Moreover, recently, listed companies of major Chaebol groups in Korea have the highest level of reserve in history. In the case of firms with high free cash flow, it is known that active cash distribution is favorable for shareholders because it can suppress managerial pursuit of private interests and enhance the monitoring function of capital markets [1, 2]. In this context, the dividend pressure of the national pension can contribute to reducing the Korea discount, reducing the agency cost and strengthening the distribution function of profit. In addition, in the prolonged low-interest-rate framework, firms' dividends increase their investment assets by converting investors who have made short-term investments into long-term investors and the effect of job creation by expanding investment can be expected. In other words, aggressive voting rights for the expansion of the NPS can be expected to result in the elimination of the Korea discount, the reduction of agency costs, and the creation of jobs through investment expansion.

On the other hand, it is not right for the NPS to participate in the dividend policy, which is one of the key decision-makings of companies. If the NPS directly demands a high dividend, companies will be severely constrained by capital management plans. The dividend pressure of the NPS may help to improve short-term profitability, but it does not know how it will affect corporate value in the long run. Focusing on short-term profits is not consistent with NPS's intentions, namely, its responsibility to the old age and future of the people. Currently, the investment level of Korean companies is considerably higher than that of developed countries, and the proportion of consumer discretionary and industrial materials such as IT and automobiles, which have a low dividend payout ratio, is high among all industries. Therefore, an

increase in dividends due to the external pressure of NPS may reduce the investment motivation of companies, leading to a decrease in investment, which may adversely affect the firm value. While the opposite effect of NPS dividend pressure is expected, we will examine how the dividend pressure of NPS affects the firm.

3. Research design

3.1. Definition of variables

In this study, Tobin's Q is used as a measure of firm value. Tobin's Q is the market value of assets divided by the replacement cost. The higher the value, the higher the firm value because the market value of the enterprise is evaluated higher than the replacement cost in the market. The market value of assets is measured as the sum of the market value of equity and the book value of debt, and the replacement cost is calculated as the book value of the asset.

Dividend pressure of NPS is measured by the following method. First, because NPS does not directly disclose a list of low dividend companies, it uses the level of cash dividend and whether or not NPS owns more than 5% stake because it sees a baseline stake, typically 5%, that can control management and influence the company. In addition, in Korea, it is obligatory to report related contents when holding more than 5% of the shares of a listed corporation, so information on the proportion of NPS's investment can be obtained. We consider the dummy variable (NPF) which distinguishes the cases where NPS has more than 5% stake. The dividend level is measured by cash dividend to total asset ratio (DIVTA), cash dividend to net income ratio (DIVOUT), and cash dividend to paid-in capital ratio (DIVRATE). In addition, if a company with a high NPS stake increases its cash dividend level in the following period, it is highly likely that NPS has given dividend pressure to the company. Therefore, we also consider the change variable of the dividend levels (Δ DIVTA, Δ DIVOUT, Δ DIVRATE). In this chapter, we use the intersection term between the dividend level variables (DIVTA, DIVOUT, DIVRATE, Δ DIVTA, Δ DIVOUT, Δ DIVRATE, and the dummy variable (NPS)) to measure the probability of NPS dividend pressure.

3.2. Research model

In this study, the dividend pressure of NPS is measured using whether NPS invests in equity of 5% or more. Therefore, the nature of a company that NPS has invested in a large amount can affect the outcome. We use propensity score matching (PSM) to control self-selection bias. PSM has the advantage of reducing the impact of certain variables and providing more accurate statistics when analyzing groups [10]. Ref. [9] found some accounting variables that significantly differed between firms with large shareholdings in NPS and those without. These variables are profitability (ROA), debt ratio (LEV), price-earnings ratio (PER), net income growth rate (NIR), dividend payout ratio (DIVOUT), and market. Therefore, in this study, PSM is performed using these variables. The concrete model is as follows.

First logistics model for propensity score matching:

$$NPF_{i,t} = \beta_0 + \beta_1 LEV_{i,t} + \beta_2 ROA_{i,t} + \beta_3 NIR_{i,t} + \beta_4 Market_{i,t} + \beta_5 PER_{i,t} + \beta_6 DIVOUT_{i,t} + \epsilon_{i,t} \quad (1)$$

NPF is an indicator variable equal to 1 if NPS owns more than 5% of the company's stake and 0 otherwise. LEV is debt ratio and ROA is net income divided by average total assets. NIR is growth rate of net income. Market is an indicator variable equal to 1 if the company is listed on the KOSPI and 0 otherwise. PER is price-earnings ratio and DIVOUT is cash dividend divided by net income.

In order to analyze the effect of NPS's dividend pressure on firm value, we analyze the following equation, Eq. (2), using the sample matched in Eq. (1).

Second OLS regression model for main analysis:

$$Q_{i,t} = \beta_0 + \beta_1 DIV_{i,t} + \beta_2 DIV_{i,t} * NPF_{i,t-1} + \beta_3 NPF_{i,t-1} + \sum \beta_{ii} Controls_{i,t-1} \quad (2)$$

Q is Tobin's Q, which measures firm value. DIV is the dividend level of the company, measured by DIVTA, DIVOUT, DIVRATE, ΔDIVTA, ΔDIVOUT, and ΔDIVRATE. The main interest variable of this study is the cross-section of Eq. (2), which is the variable indicating the dividend pressure of NPS. If β_2 has a statistically significant positive (+) value, then NPS's dividend pressure will increase the firm value. On the other hand, if β_2 has a statistically significant negative (−) value, the dividend pressure of NPS would decrease the firm value.

We use variables that are known to affect investment in previous studies as control variables [11, 12]. Since the firm size and profitability affect investment, SIZE, which takes natural logarithm of total assets, and ROA, which shows profitability, are used as control variables. In the case of firms with high debt ratios, investment activity decreases due to the high bankruptcy risk [13]. We use LEV, which represents the debt ratio and Z, which measures the bankruptcy risk by Altman's Z-score. We use CFO, which divides cash flow from operating activities into total assets, and TANG, which divides the tangible assets into total assets, LOSS, which means net loss. We use MB, which is the market-to-book value ratio of equity, OPCYLCE, which takes natural logarithm of operating cycle, and volatility (STD_CFO, STD_SALES) as control variables.

3.3. Sample selection

The sample in this study is all companies listed on the Korean Stock Exchange from 2011 to 2016 which meet the following criteria.

1. non-financial companies.
2. excluding companies with negative net assets.
3. companies with more than 5% shares of NPS and controlled groups matched using PSM.
4. companies that can obtain relevant financial information from data guide.

Of the original 11,350 firm-year observations from 2011 to 2016, we lose 616 for financial companies and 182 for companies with negative net assets. 1039 observations are companies that have more than 5% shares of NPS and the control group matched using PSM has 2978 observations. In order to exclude the effect of extreme values, 1% of the upper and lower values are winsorized. The final company-year observations, including all financial information required for the analysis, are identified as 2194.

4. Empirical results

4.1. Descriptive statistics and correlation analysis

Panel A of **Table 1** shows the yearly distribution and ownership percentage of companies with NPS shares of more than 5%. In 2000, NPS had more than 5% shares of only one company but it has increased gradually since then and has increased sharply since the 2008 financial crisis. In 2016, NPS owns more than 5% stake in 231 Korean companies with an average stake of 8.46%, with a maximum stake of 13. 5%. Panel B provides yearly statements on NPS's objections to the shareholders' meeting at the shareholders' meeting for reasons of lower dividend. NPS's voting rights were manually extracted from the NPS fund management website since 2005. The number of cases in which NPS exercised its voting rights on the grounds of a lower dividend was only 1 or 2 before 2010 but soared to 16 in 2011, again dropping to 26 in 2014. This seems to be due to the revision of the Enforcement Decree of the Capital Markets Act at the end of 2014 and the legal basis for NPS to invest in the company.

Table 2 presents descriptive statistics for the variables used in this study. Panel A is for a test sample that matches 1: 2 PSM to companies with NPS's over 5% stake (treated group) and to those whose does not (control group). We use this sample to verify the effect of NPS dividend pressure on firm value. The mean value of Q is 1.37 and the median is 1.01. The top 1% of Q is 6.57, indicating that some of the firms in the test sample have a very high Q value. Since the treated group and the control group are matched 1: 2, the NPF has a value of 1 from the 75th percentile. In observations that account for about 2% of the test sample, NPS's have exercised a negative voting right at the shareholders' meeting for reasons of low dividend. Panel B provides descriptive statistics of the variables used in the logistic regression analysis for PSM. Panel A is descriptive statistics of the test sample constructed through PSM, but Panel B is for the entire sample. Korea's listed companies have an average debt ratio of 44% from 2011 to 2016, ROA of 1%, and net profit growth of negative values. The average PER is 14.8x and the average dividend payout ratio is 12. 5%. **Table 3** shows the result of Pearson correlation analysis. Q has a positive correlation with NPF. The correlation between Q and the variables representing the dividend level is inconsistent. However, the correlation does not take into account other factors that affect the relationship between the two variables. It is more appropriate to draw conclusions through the regression analysis described below.

Panel A of the table is descriptive statistics of variables used in main analysis and Panel B is descriptive statistics of variables used in logistic regression analysis for PSM. Q is Tobin's

Panel A: Annual distribution of companies with NPS of more than 5% shares

Year	n	Ownership owned by NPS			
		Mean	Min	Median	Max
2000	1	6.47	6.47	6.47	6.47
2001	4	6.78	5.37	6.56	8.63
2002	4	7.01	5.37	6.89	8.89
2003	12	6.46	5.04	6.23	8.75
2004	18	7.56	5.18	6.89	12.21
2005	19	8.16	5.73	8.20	11.28
2006	29	7.53	5.02	6.35	15.67
2007	30	7.65	5.06	6.60	15.81
2008	53	7.61	5.01	6.71	15.73
2009	65	6.67	5.01	6.40	12.20
2010	97	6.65	5.00	6.30	9.66
2011	117	7.55	5.00	7.50	11.02
2012	159	7.66	5.02	7.89	11.08
2013	195	8.01	5.03	7.71	13.41
2014	210	8.35	5.00	8. 10	14.82
2015	225	8.65	5.00	8.06	14.20
2016	231	8.46	5.00	8.04	13.50

Panel B: Number of companies for which NPS exercised a negative voting right at the shareholders' meeting due to a lower dividend

Year	2006	2008	2010	2011	2012	2013	2014	2015	2016	2017
Obs	2	1	1	18	1	7	26	16	21	18

Table 1. Distribution of NPS shares (5% or more) and voting exercise (reason for less dividend).

which means firm, and NPF is a dummy variable indicating whether the NPS owns more than 5% stake. DIVOUT is the cash dividend rate relative to the net income, DIVTA is the cash dividend rate relative to total assets, and DIVRATE is the cash dividend rate relative to the paid-in capital. SIZE is the natural log of total assets, LEV is the debt ratio, ROA is the returns on assets, CFO is the ratio of operating cash flow to total assets, and σ (CF) and σ (SALES) is volatility. Z is the risk of bankruptcy of Altman's Z-score, OPCYCLE is the natural log of the operating cycle, MB is the market-to-the-book value ratio of equity, TANG is the ratio of tangible assets to total assets, and LOSS is 1 if the company has net loss otherwise 0. In Panel B, NIR is the growth rate of net income, PER is the ratio of stock price to EPS, and the rest is the same as Panel A definition.

The definitions of the variables are the same as those in **Table 2**.

Type	n	mean	std	a1	a25	a50	a75	a99
Panel A: descriptive statistics for main analysis								
Q	3105	1.37	1.37	0.39	0.81	1.03	1.44	6.57
NPF	3117	0.33	0.47	0.00	0.00	0.00	1.00	1.00
Divout	3117	20.52	26.64	−29.98	2.82	14.19	27.59	125.05
Δ Divout	3117	3.37	34.41	−143.57	−2.36	0.00	6.06	134.10
Divta	3117	0.92	1.15	0.00	0.17	0.58	1.22	6.91
Δ Divta	3090	0.01	0.64	−2.15	−0.10	0.00	0.09	2.69
Divrate	3117	0.26	0.34	0.00	0.04	0.15	0.32	1.50
Δ Divrate	3117	0.02	0.12	−0.40	0.00	0.00	0.04	0.50
D_LOW	3117	0.01	0.11	0.00	0.00	0.00	0.00	1.00
SIZE	3117	26.94	1.63	23.91	25.78	26.72	27.82	31.34
LEV	3117	0.44	0.19	0.07	0.28	0.44	0.59	0.88
ROA	3117	0.05	0.06	−0.11	0.02	0.04	0.07	0.30
CFO	3117	0.07	0.09	−0.15	0.03	0.06	0.11	0.37
σ(CFO)	2947	0.06	0.06	0.01	0.03	0.05	0.08	0.30
σ(SALES)	2947	0.22	0.26	0.01	0.08	0. 14	0.26	1.50
Z	3021	3.53	2.98	0.27	1.89	2.75	4.17	17.53
OPCYCLE	2681	4.56	0.60	2.58	4.24	4.63	4.93	5.83
MB	3022	1.44	3.14	0.06	0.57	0.92	1.51	9.07
TANG	3026	0.33	0.18	0.01	0.20	0.33	0.45	0.80
LOSS	3026	0.08	0.28	0.00	0.00	0.00	0.00	1.00
Panel B: descriptive statistics of logistic model for PSM								
LEV	10,552	0.44	0.21	0.05	0.27	0.44	0.60	0.92
ROA	10,482	0.01	0.12	−0.48	−0.01	0.03	0.06	0.26
NIR	10,480	−0.39	4.67	−26.93	−0.84	−0.17	0.38	16.78
PER	10,223	14.80	106.96	−240.76	−2.79	8.42	19.17	442.48
DIVOUT	10,550	12.50	23.63	−31.82	0.00	0.00	18.46	125.05

Table 2. Descriptive statistics.

4.2. Results of PSM and OLS regression

Table 4 shows the results of Eq. (1), a logistic regression for PSM. The dependent variable of the logistic regression model is whether NPS owns more than 5% stake. We used LEV (debt ratio), ROA (return on assets), NIR (growth rate of net income), market (KOSPI or KOSDAQ), PER, and DIVOUT (dividend payout) and yearly dummy as independent variables. The results show that debt ratio, ROA, market, and dividend payout are related to whether NPS owns a large amount of stakes. However, net income growth and PER are not related to NPS

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Q	1.00									
(2) NPF	0.06	1.00								
(3) DIVOUT	−0.06	−0.01	1.00							
(4) ΔDIVOUT	−0.02	−0.03	0.59	1.00						
(5) DIVTA	0.29	0.05	0.39	0.07	1.00					
(6) ΔDIVTA	0. 13	−0.02	0.06	0. 12	0.27	1.00				
(7) DIVRATE	0.21	0.24	0.22	0.03	0.61	0. 13	1.00			
(8) ΔDIVRATE	0.22	0.08	0.07	0.09	0.34	0.67	0.44	1.00		
(9) SIZE	−0. 10	0.46	−0.01	0.00	−0. 11	−0.04	0.24	0.06	1.00	
(10) LEV	−0.04	0.01	−0.15	0.01	−0.37	0.02	−0.25	−0.03	0.33	1.00
	(11)	**(12)**	**(13)**	**(14)**	**(15)**	**(16)**	**(17)**	**(18)**	**(19)**	**(20)**
(11) Q	1.00									
(12) ROA	0.15	1.00								
(13) CFO	0.15	0.47	1.00							
(14) σ(CFO)	0.24	0.08	0.02	1.00						
(15) σ(SALES)	0. 11	0.02	−0.02	0.48	1.00					
(16) Z	0.43	0.42	0.29	0.15	0.02	1.00				
(17) OPCYCLE	−0. 11	−0. 14	−0.22	−0.05	−0. 13	−0. 11	1.00			
(18) MB	0.24	−0. 14	−0.01	0.05	0.01	0.05	−0.02	1.00		
(19) TANG	−0. 12	−0. 10	0.07	−0.18	−0.16	−0.25	0.01	−0.02	1.00	
(20) LOSS	−0.02	−0.59	−0.26	0.02	0.03	−0.21	0.07	0. 10	0.04	1.00

Table 3. Pearson correlation.

holdings more than 5% stake. Panel B shows the results of the PSM, with 1039 observations of firm-year observations that have more than 5% stake in NPS, with 1:2 matching and 2078 controls.

Table 5 shows the results of OLS regression analysis of Eq. (2) that analyzed the effect of NPS's dividend pressure on firm value. The dividend pressure of NPS is measured by the intersection term ($DIV_{i,t}$*$NPF_{i,t-1}$) between the level of cash dividend and whether the NPS invested more than 5%. Columns (1)–(6) show different definitions of cash dividend level, respectively. First, the relationship between cash dividend level (DIV) and firm value has a statistically significant positive value in columns (3), (4), (5), and (6). This suggests that Korean firms tend to have higher firm value as cash dividends are paid more. In addition, in the columns (1), (2), (3), (4), and (5), it is confirmed that the NPF has a statistically significant positive value with the enterprise value. This indicates that a firm with more than 5% stake in NPS has a higher enterprise value. However, the $DIV_{i,t}$*$NPF_{i,t-1}$ variable, which indicates the dividend pressure of the NPS, is not significantly related to firm value. To summarize, the dividend pressure of the NPS does not directly affect firm value. However, it has been shown that the holding of

Panel A: The results of logistic regression for PSM:
$NPF_{i,t} = \beta_0 + \beta_1 LEV_{i,t} + \beta_2 ROA_{i,t} + \beta_3 NIR_{i,t} + \beta_4 Market_{i,t} + \beta_5 PER_{i,t} + \beta_6 DIVOUT_{i,t}$

Parameter	Estimate	Wald Chi^2	P-value
Intercept	−0.30	2.45	0. 12
LEV	0.53***	7.44	0.01
ROA	7.31***	185.81	<.0001
NIR	0.01	0.50	0.48
Market	−2.22***	626.78	<.0001
PER	−0.00	1.54	0.21
DIVOUT	0.01***	17.08	<.0001
Year dummy	Included		
Panel B: The result of PSM			
Difference statistic	Propensity Score		
Method	Optimal Variable Ratio Matching		
Min Control/Treated Ratio	1		
Max Control/Treated Ratio	3		
Matched Sets	1039		
Matched Obs. (Treated)	1039		
Matched Obs. (Control)	2078		

*, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. The definitions of the variables are the same as those in **Table 2**.

Table 4. Results for logistic regression for PSM.

large stakes by the NPS positively affects corporate value. There is also a significant relation between dividend levels and firm value. This suggests that if listed companies in Korea are able to pay dividends, raising dividend levels can be a way to increase corporate value.

In robustness analysis, 2SLS and fixed-effect panel analysis are applied to control endogeneity and heterogeneity problems. **Tables 6** and **7** are estimated by fixed-effect panel analysis on unbalanced panel data and control industrial effects. In order to control endogeneity, 2SLS estimates the endogenous variables using the instrument variables in the first step. The main test variable of this study is $DIV_{i,t}{*}NPF_{i,t-1}$ which is composed of the intersection of two variables, and the endogenous variable is $DIV_{i,t}$. According to the previous study [14], the endogeneity of the cross term ($DIV_{i,t}{*}NPF_{i,t-1}$) is not simply corrected by the intersection term of $DIV_{i,t}$ estimated in the first step and $NPF_{i,t-1}$. In the first step, not only $DIV_{i,t}$ but also $DIV_{i,t}{*}NPF_{i,t-1}$ are estimated together and the estimated variables of the two variables ($DIV_{i,t}$, $DIV_{i,t}{*}NPF_{i,t-1}$) are input in the second step. In this study, I use the dividend level of previous year ($DIV_{i,t-1}$) as an appropriate instrument variable for the current dividend level ($DIV_{i,t}$). This is because the dividend level of the previous year is not a direct causal

Var.	(1) DIVOUT	(2) ΔDIVOUT	(3) DIVTA	(4) ΔDIVTA	(5) DIVRATE	(6) ΔDIVRATE
Intercept	1.66***	1.65***	1.12***	1.57***	2.66***	1.96***
	(2.43)	2.41	1.80	2.33	3.87	2.92
$DIV_{i,t}$	0.00	0.00	0.26***	0.27***	0.71***	1.99***
	(−1.74)	−0.41	9.72	7.00	7.08	8.77
$DIV_{i,t}$*$NPF_{i,t-1}$	0.00	0.00	−0.06	0.14	−0.16	−0.39
	(−0.04)	−0.25	−1.42	1.63	−1.24	−1.09
$NPF_{i,t-1}$	0.14**	0.14***	0.19***	0.15***	0.18***	0. 14
	(2.06)	2.53	2.66	2.61	2.47	2.41
$SIZE_{i,t-1}$	−0.08***	−0.09***	−0.08***	−0.08***	−0.13***	−0.10***
	(−4.76)	13.90	−4.55	−4.72	−7.19	−5.46
$LEV_{i,t-1}$	2.16***	2.19***	2.38***	2.23***	2.40***	2.20***
	(13.62)	13.90	15.28	14.37	15.26	14.25
$ROA_{i,t-1}$	1.13***	1.27***	0.48	1.47***	0.78	1.22***
	(2.42)	2.67	1.03	3.16	1.67	2.66
$CFO_{i,t-1}$	0.18***	0.82***	0.06**	0.79***	0.62**	0.62**
	(2.63)	2.66	1.97	2.62	2.05	2.04
$\sigma(CF)_{i,t-1}$	3.35***	3.37***	3.45***	3.31***	3.25***	3.21***
	(7.60)	7.65	7.99	7.61	7.47	7.42
$\sigma(SALES)_{i,t-1}$	−0.04	−0.04	−0.02	−0.06	0.01	−0.03
	(−1.25)	−0.37	−0.17	−0.57	0. 14	−0.35
$Z_{i,t-1}$	0.21***	0.21***	0.19***	0.22***	0.20***	0.21***
	(20.91)	20.91	18.72	21.61	19.56	20.98
$OPCYCLE_{i,t-1}$	−0.09*	−0.09*	−0.06	−0.08	−0.07	−0.07
	(−1.81)	−1.84	−1.17	−1.58	−1.40	−1.52
$MB_{i,t-1}$	0.01***	0.01***	0.01***	0.01***	0.01***	0.01***
	(4.24)	4.25	4.18	4.41	4.15	4.24
$TANG_{i,t-1}$	0.06	0.06	0.06	0.07	0.06	0.08
	(0.42)	0.37	0.41	0.48	0.36	0.53
$LOSS_{i,t-1}$	0. 13	0.18**	0.15**	0. 14	0.15	0.12
	(1.62)	2. 13	1.97	1.81	1.92	1.58
Adj.R^2	0.32	0.32	0.35	0.34	0.34	0.35
Year/industry dummy	Included	Included	Included	Included	Included	Included
Obs.	2615	2615	2615	2615	2615	2615

The upper part of each cell represents the estimation coefficient and the lower part represents the t value. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. The definitions of the variables are the same as those in **Table 2**.

Table 5. The effect of dividend pressure of NPS on firm value: main analysis.

Variable	(1)	(2)	(3)	(4)	(5)	(6)
	1st step		2nd step	1st step		2nd step
	$DIVTA_{i,t}$	$DIVTA_{i,t}*NPF_{i,t-1}$	$Q_{i,t}$	$\Delta DIVTA_{i,t}$	$\Delta DIVTA_{i,t}*NPF_{i,t-1}$	$Q_{i,t}$
$\widehat{DIV}_{i,t}$			−0.08			0.05
			(−1.03)			(1.58)
$DIV_{i,t}\widehat{*NPF}_{i,t-1}$			−0.06**			0.06
			(−2.55)			(0.83)
$NPF_{i,t-1}$	0.07	0.23***	0.07**	0.08	0.03	0.01
	(1.41)	(7.74)	(2.54)	(1.48)	(1.25)	(0.34)
$SIZE_{i,t-1}$	−0.21***	−0.20***	−0.13***	−0.44***	−0.17***	−0.07*
	(−2.85)	(−4.48)	(−3.75)	(−4.65)	(−3.70)	(−1.86)
$LEV_{i,t-1}$	−0.91***	−0.30**	−0.44***	−1.12***	−0.40***	−0.29***
	(−3.56)	(−2.00)	(−3.52)	(−3.49)	(−2.60)	(−2.69)
$ROA_{i,t-1}$	0.24	−0.01	0.13	−1.24***	−0.37*	0.17
	(0.73)	(−0.03)	(0.87)	(−2.99)	(−1.85)	(1. 12)
$CFO_{i,t-1}$	−0.20	−0.15	0.04	−0.96***	−0.24*	0. 14
	(−1.00)	(−1.27)	(0.48)	(−3.80)	(−1.94)	(1.51)
$\sigma(CF)_{i,t-1}$	−0.56	−0.41*	0.01	−0.65	−0.43*	0. 12
	(−1.36)	(−1.66)	(0.06)	(−1.25)	(−1.70)	(0.70)
$\sigma(SALES)_{i,t-1}$	−0.07	0.02	−0.06	0.02	0.04	−0.06
	(−0.73)	(0.31)	(−1.56)	(0.21)	(0.78)	(−1.48)
$Z_{i,t-1}$	0.01	−0.01	−0.01	−0.01	−0.01	−0.01*
	(0.62)	(−0.87)	(−1.58)	(−0.70)	(−1.26)	(−1.68)
$OPCYCLE_{i,t-1}$	−0.17***	−0.10**	−0.04	0.07	−0.09**	−0.02
	(−2.60)	(−2.44)	(−1.04)	(0.89)	(−2.31)	(−0.59)
$MB_{i,t-1}$	0.00	0.00	0.00	0.00	0.00	0.00
	(1.39)	(0.91)	(0.58)	(1.20)	(1.04)	(0.18)
$TANG_{i,t-1}$	−0.90***	−0.19	−1.09***	−0.54	−0. 12	−0.97***
	(−3.30)	(−1.17)	(−7.95)	(−1.56)	(−0.73)	(−8.59)
$LOSS_{i,t-1}$	−0.03	0.02	0.04	−0.02	−0.00	0.04
	(−0.47)	(0.71)	(1.64)	(−0.30)	(−0.03)	(1.60)
$DIV_{i,t-1}$	0.16***	−0.08***		−0.27***	0.01	
	(6. 11)	(−5.56)		(−11.06)	(0.56)	
$DIV_{i,t-1}*NPF_{i,t-1}$	−0.05	0.83		−0.10*	−0.33***	
	(−1.64)	(47.37)		(−1.72)	(−12.35)	
Adj.R)	0.09	0.76	0.10	0.18	0.15	0.1

Variable	(1)	(2)	(3)	(4)	(5)	(6)
	1st step		2nd step	1st step		2nd step
	$DIVTA_{i,t}$	$DIVTA_{i,t}*NPF_{i,t-1}$	$Q_{i,t}$	$\Delta DIVTA_{i,t}$	$\Delta DIVTA_{i,t}*NPF_{i,t-1}$	$Q_{i,t}$
# of obs	2631	2631	2194	2631	2631	2194
# of groups	1215	1215	1027	1215	1215	1027
F-statistics	9.36***	313.46***	9.28***	22.67***	18.21***	9.22***

The upper part of each cell represents the estimation coefficient and the lower part represents the t value. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. The definitions of the variables are the same as those in **Table 2**.

Table 6. Robustness test using 2SLS and panel analysis (1).

Variable	(1) DIVOUT	(2) ΔDIVOUT	(3) DIVRATE	(4) ΔDIVRATE
$\widehat{DIV}_{i,t}$	−0.00	−0.00	−0.23	0.19
	(−1.20)	(−0.69)	(−1.11)	(0.84)
$DIV_{i,t}\widehat{*NPF}_{i,t-1}$	−0.02*	0.00	0.00	−0.06
	(−1.79)	(0.35)	(0.04)	(−0.08)
$NPF_{i,t-1}$	0.36*	0.01	0.02	0.01
	(1.86)	(0.70)	(0.75)	(0.32)
$SIZE_{i,t-1}$	0.03	−0.10***	−0.08*	−0.11***
	(0.37)	(−3.11)	(−1.86)	(−2.81)
$LEV_{i,t-1}$	−0.69***	−0.37***	−0.40***	−0.36***
	(−3.05)	(−3.54)	(−3.68)	(−3.32)
$ROA_{i,t-1}$	0.24	0.12	0.08	0. 11
	(1.37)	(0.75)	(0.55)	(0.76)
$CFO_{i,t-1}$	−0.06	0.06	0.08	0.07
	(−0.49)	(0.63)	(0.88)	(0.80)
$\sigma(CF)_{i,t-1}$	-0. 10	0.06	0.04	0.08
	(−0.50)	(0.35)	(0.20)	(0.49)
$\sigma(SALES)_{i,t-1}$	−0.02	−0.05	−0.05	−0.05
	(−0.51)	(−1.23)	(−1.38)	(−1.30)
$Z_{i,t-1}$	−0.01**	−0.01*	−0.01*	−0.01
	(−2.39)	(−1.77)	(−1.67)	(−1.51)
$OPCYCLE_{i,t-1}$	−0.07	−0.01	−0.02	−0.01
	(−1.56)	(−0.34)	(−0.76)	(−0.31)
$MB_{i,t-1}$	0.00	0.00	0.00	0.00
	(0.30)	(0.25)	(0.35)	(0.26)

Variable	(1) DIVOUT	(2) ΔDIVOUT	(3) DIVRATE	(4) ΔDIVRATE
$TANG_{i,t-1}$	−1.06***	−0.99***	−1.03***	−0.97***
	(−8.75)	(−8.76)	(−8.64)	(−7.36)
$LOSS_{i,t-1}$	0.12**	0.05*	0.04	0.03
	(2.18)	(1.68)	(1.58)	(1.41)
Adj.R^2	0.10	0. 10	0.10	0.10
# of obs	2194	2194	2194	2194
# of groups	1027	1027	1027	1027
F-statistics	8.98***	8.76***	8.83***	8.81***

The upper part of each cell represents the estimation coefficient and the lower part represents the t value. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. The definitions of the variables are the same as those in **Table 2**.

Table 7. Robustness test using 2SLS and panel analysis (2).

relationship with the current corporate value but is a variable that determines the present dividend level [15, 16].

First, columns (1)–(3) and columns (4)–(6) in **Table 6** are the result of using DIVTA and nDIVTA as DIV variables, respectively. Column (1) and (2) are to estimate DIVTA and DIVTA * NPF as the first steps for 2SLS, and (3) columns show the main analysis results using the variables estimated in columns (1) and (2). Similarly, columns (4) and (5) are to estimate mns (analysis results using the variables estimated in columns (6) is about main analysis. The results of the first stage, column (1) and (2), show that the dividend level of the previous period has a significant positive relationship with the dividend level of the current period at 1% level. In the second step, in contrast to the results in **Table 5**, the level of dividends does not affect the firm value. On the other hand, the dividend pressure of NPS has a negative effect on the corporate value. The results of column (6) using the variables of dividends does not affect the firm value. On the other hand, the dividend pressure of NPS has a negative effect on the corporate

Table 7 shows the results of the same analysis as **Table 6** using the remaining DIV variables. Columns (1)–(4) are the second stages of 2SLS, and definition of DIV variable is different. Only in column (1), where dividend levels are measured by DIVOUT, the dividend pressure of the NPS has been found to have a negative impact on corporate value at the 10% level. However, in the case of the remaining variables, NPS's dividend pressure and corporate value are not related. Dividend level of the current period can be determined endogenously, but it is difficult to find a precedent study that mentions the problem of endogeneity on the change of the dividend level. In the case of changes in the level of dividends, I do not use 2SLS and applied only fixed-effect panel analysis. Although it is not shown in the table, the dividend pressure of the NPS is not related to firm value. In conclusion, in a few analyses, the dividend pressure of the NPS is found to be negative for firm value. However, in order to generalize this, the evidence of empirical analysis is lacking. In this study, I conclude that the dividend pressure of the NPS is irrelevant to firm value.

5. Conclusion

This study investigated the effect of NPS dividend pressure on firm value. For the purpose of this study, we analyzed the Korean listed companies from 2011 to 2016. The dividend pressure of NPS was measured by using the intersection of the cash dividend level and whether or not NPS had a large amount of share. The level of cash dividend was measured by cash dividend rate relative to total assets, net income, and capital. The change variables of these variables were also considered. We constructed the test sample using PSM to reduce the self-selection bias.

The results show that the dividend pressure of NPS had no significant effect on firm value. However, there was a significant relation between dividend level and firm value. In addition, firms with large shareholdings of the NPS tended to have high corporate value. As a result, listed companies in Korea could consider increasing dividends as one of the ways to increase corporate value. This study is expected to provide useful information for future decision-making regarding voting rights related to dividends. It will also help guide the dividend policy of companies that are receiving investment from NPS. In recent years, as Korean corporations have increased their reserves, this research is expected to provide useful information to investors and managers who are interested in possible agency problems. This chapter analyzes the impact of cash dividend on corporate value using the external shock of NPS's dividend expansion pressure. Most of the previous studies have analyzed dividend and investment on the same line and analyzed the effect of these factors on firm value. This study solves the problem of bidirectional causality between dividend and firm value by using exogenous factors such as NPS's dividend pressure.

As a result, the dividend pressure of the NPS does not have a significant effect on firm value. On the other hand, there is a significant positive relation between dividend level and firm value and whether mass ownership of NPS has a significant positive effect on firm value. This study is meaningful to verify the direct effect of pension funds on behaviorism. In addition, this study has contributed to verifying the direct effect of corporate dividend increase on firm value using the external shock of NPS's dividend pressure.

This study has the following limitations. First, the proxy of the NPSon firm value. This study is meaningful to verify the direct effect of pension funds on behavior holdings of NPS and the cash dividend level. If a company with a large amount of the NPS pays a large dividend, it is difficult to distinguish whether the corporation voluntarily increases the dividend or increases the dividend by the pressure of the national pension. The solution to these limitations is to be handled in future research.

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Conflict of interest

The author declares no conflict of interest.

Notes/Thanks/Other declarations

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Chapter 5

Can Corporate Social Responsibility Fill Institutional Voids?

Swee-Sum Lam, Weina Zhang and Christopher Yuen Kwong Chien

Additional information is available at the end of the chapter

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Abstract

We conduct empirical analysis on the relation between firm value and corporate social responsibility (CSR) using 134,823 observations of 2542 firms across 44 countries from 2009 to 2014. We find that the firm value is positively related to the overall CSR score of the firm. At a more granular level, we find that good environmental score is positively related to the firm value and good social and governance scores are negatively related to the firm value. Since these firms operate in different institutional frameworks, we explore whether the institutional voids—the absence of institutions or intermediaries that are instrumental in supporting business operations in a country—may result in greater firm valuation for its CSR and vice versa. Our results show that firms' environmental scores and social scores receive higher valuation in countries with weaker institutions. Overall, our findings suggest that CSR creates value for firms by filling institutional voids in their home country.

Keywords: corporate social responsibility, firm value, institutional theory, institutional voids

1. Introduction

In recent years, an increasing focus has been placed on corporate social responsibility (CSR) strategies as an integral function of business (e.g., [1–3]). A joint study by the United Nations Global Compact and Accenture in 2010 found that 93% of the 766 CEOs as participants around the globe believe that CSR will be an "important" or "very important" factor for their organizations' future success [4]. The Forum for Socially Responsible Investing in the United

States (USSIF) also showed that socially responsible investing (SRI) currently expanded to 6.57 trillion in 2014, representing 17.9% of all assets under management in the United States (USSIF, [5]). Moreover, developments such as the signature of the Principles for Responsible Investment (PRI) agreement by major market players and the increasing institutionalization of B Corp as a legal entity class in the United States (e.g., [6]) serve to showcase CSR's increasing relevance in modern business world.

Despite a surging interest in CSR, a seemingly fundamental question remains unresolved—does CSR create value for firm? Traditional shareholder theory suggests that CSR can create value only if it increases the firm's expected future cash flows and reduces firm risk (e.g., [2, 7, 8]). In contrast, opponents predict that CSR is inherently value destroying, driven by selfish motives (e.g., [9]). We aim to reconcile the differences in the literature by performing a comprehensive cross-country empirical study on CSR and firm valuation relation.

We use the international CSR data from Morgan Stanley Capital International (MSCI), which is an independent rating agency with extensive experience in analyzing firms based on a wide range of CSR dimension assessments. Firms are rated on their environmental, social, and governance (ESG) performance, by receiving numerical ESG index scores (from 1 to 100, with 100 being the highest). The MSCI's ESG ratings have been extensively used in recent studies (e.g., [7, 10]). We measure firm value by Tobin's Q. This measure is popular because it captures both the expected tangible and intangible value of the firm (e.g., [11–13]). Our final sample consists of 134,823 monthly observations of 2542 companies across 44 countries and 128 industries from 2009 to 2014.

Our first result shows that CSR is associated with higher firm value on average, but the economic significance is small. Specifically, a one standard deviation increase in the ESG score will lead to an increase in Tobin's Q by 28 basis points. This is about 0.17% of the mean value of Tobin's Q measure at 1.63. The weak economic result prompts us to delve into three subdimensions of the ESG scores (environmental, social, and governance scores).

Our second result shows that the environment score is positively and significantly related to firm value, whereas the social and governance scores are both negatively and significantly related to firm value at the 1% significance level. Although similar findings have been documented in the United States (e.g., [2, 14]), our results have expanded the research scope to 49 countries.

Given that our sample firms span across different countries, we wonder whether the CSR-firm value relation is affected by different institutional environments that these firms operate in. The literature has provided some indications on the relation between firm valuation and institutional frameworks. For example, the quality of country-level governance is shown to have a material impact on financial markets and firm-level corporate policy (e.g., [15]). Firms in countries with better investor protection have easier access to external funding (e.g., Doidge et al. [16, 17, 18]). Moreover, investors seem to take into account environmental and social risks when making investment decisions (e.g., [19, 20]). Since firms are not operating in a vacuum and are affected by the institutional framework within their home countries, same argument may apply to the CSR-firm valuation relation. Our empirical setting allows for a deep investigation since we have firms from many different countries.

Our third main result reveals how the CSR and firm value relation changes in the presence of different institutional voids in financial, economic, and governmental institutions (e.g., [21, 22]). We find that the valuation effect of CSR is significantly more pronounced in weaker institutional frameworks and vice versa.

We also perform several robustness tests. First, we examine the possibility that our observations are driven by market reaction rather than material value creation. We find no evidence for reversions in firm value over a longer time frame, which suggests that our findings are driven by material value creation. Second, we examine the possibility that our findings are driven by firms in regulated industries or "sin" firms (e.g., [3]). As such, we rerun our models excluding firms operating under regulated industries (e.g., [11]), which constitute banking, energy, insurance, telecommunication, transportation, and utility companies, and those under the Triumvirate of Sin (e.g., [23]), which constitute alcohol, gambling, and tobacco companies. Our main results remain robust.

Our study contributes to three strands of the literature. First, to the best of our knowledge, our study is one of the first studies to explore the CSR-firm value relation on an international scale. We integrate an institution-based view with an institutional void perspective, using a large panel dataset. Indeed, preexisting studies of CSR have generally been conducted in a single country with a dearth of researchers investigating cross-country effects (e.g., [11, 24]). Secondly, consistent with literature, we provide evidence for the notion of CSR as value creation, drawing on institutional void theory to contextualize the CSR-valuation relation by observing it across different socioeconomic and political regimes. Lastly, our study provides a deeper understanding on the underlying mechanisms through which CSR actions lead to particular outcomes at an institutional level (e.g., [1, 24]).

2. Literature review

2.1. Existing theories on CSR-firm value relationship

Traditionally, researchers believe that the responsibility of a business is "to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game and engages in open and free competition without deception or fraud" [25]. This implies that a firm's voluntary pursuance of CSR incurs unnecessary costs and thus reduces its financial performance, resulting in additional firm risk borne by shareholders. A firm's spending on CSR is a manifestation of managerial agency, as managers use corporate resources to confer managerial benefits instead of adding to firm value (e.g., [10, 26]).

On the other hand, Freeman's [27] seminal stakeholder theory argues that businesses do not exist as isolated units in a vacuum, and, thus, the presence and interactions with other actors[1] who are able to affect the firm follows that an increase in firms' CSR will result in improved stakeholder

[1]As Jiao [12] has noted, there has been an ongoing debate regarding an accurate depiction and definition of the term stakeholders (e.g., [25]). However, Jiao [12] concedes that studies generally consider employees, customers, suppliers, governmental bodies, competitors, and investors as notable stakeholders, among others.

relationships, eventually resulting in a better financial performance (e.g., [7, 28, 29]) and reductions in firm risk (e.g., [20]). It follows that stakeholder welfare is thus a means for firms to invest in intangible assets that would add value to the firm (e.g., [13]). Notably, Porter and Kramer [8] suggest that valuable benefits are created when firms approach societal issues from a "shared value perspective" and invent new ways of operation to address them, which could manifest through various avenues, such as a reduction in transaction costs [30] or the creation of nouveau market opportunities [31]. This notion of CSR as a strategic advantage is supported by a variety of studies (e.g., [32, 33]). For example, some scholars have drawn links between a firm's CSR and its resulting capital structure (e.g., [34]), fewer capital constraints [14], lower costs of capital (e.g., [20]), or increased employee attractiveness (e.g., Greening and Turban [35]).

The literature has also put forward conceptual theories on how CSR can positively affect the firm. Firstly, the risk management theory proposes that the pursuance of CSR has the ability to mitigate the risk experienced by firms (e.g., [20]) by being less prone to social and regulatory changes, for example. Secondly, the shunned stock theory assumes that socially responsible investors select assets on different reasons unrelated to profit motives (i.e., a "value-driven" investor). This preferential selection then results in investors requiring a return premium due to the increased risk that nonsocially responsible firms bear (e.g., [23, 36]). This preference for socially responsible firms also manifests as an increase in investor demand, leading to a premium in firm valuation (e.g., [37]), and may also improve firm performance via avenues such as a more favorable cost of equity (e.g., [14]).

Researchers who are in favor of a neutral relationship between CSR and firm performance argue that the relationship between a firm's corporate social performance and the benefit that it imparts (e.g., financial performance and stock price) is complex in nature rather than strictly positive or negative (e.g., [38, 39]). Along this train of thought, McWilliams and Siegel [40] outline a supply and demand model of CSR, concluding that each firm will select an optimal level of CSR at each point in time determined via cost–benefit analyses.

2.2. Empirical evidence on CSR-firm value relationship

Empirically, investigations into the CSR-firm value relation have resulted in a series of mixed findings. However, multiple literature reviews suggest that the CSR-firm performance relationship is generally positive in nature (e.g., [1, 28, 29]), such that higher levels of CSR can result in lower idiosyncratic risk (e.g., [41]), higher market to book ratios (e.g., [37]), and higher valuations (e.g., [13]).

The large degree of variability inherent in the literature could be symptomatic to a suite of underlying causes. For example, market actors could disagree on the inherent value of a firm's CSR and its corresponding impact (e.g., [2, 23]) or fail to fully incorporate the value of a firm's intangible assets into their valuations (e.g., [42]). Other scholars suggest that these results could be due to the time lag between the operationalization of CSR and the realization of its benefits (e.g., [43]), with Brammer and Millington [26] noting that firms with unusually poor social performance do best in the short run and unusually good social performance do best over longer time horizons, alongside Derwall et al. [36] who observed that the market

systematically undervalues how a firm's CSR can influence its expected future cash flows. The opacity of results could also reflect the inherent difficulty in evaluating and quantifying CSR (e.g., [44]), such that conflicting findings across studies may arise through sampling or measurement errors (e.g., [45]) or a lack of sophistication when measuring stakeholder effects (e.g., [28, 46]). Researchers could also be operating under the assumption of a level of firm homogeneity, disregarding important granular firm-level or individual-level variations that may be mediators or moderators of CSR (e.g., [47, 48]). Last but not least, scholars suggest that this variation points toward the significant knowledge gap that still exists regarding the mechanisms through which CSR affects the firm (e.g., [1]).

2.3. The impact of country-level institutional frameworks

Institutional environments matter for firms because they influence the firm's costs and benefits associated with pursuing various activities (e.g., [17, 21]). In particular, the literature highlights the importance of three country-level institution frameworks, namely, financial, economic, and governmental institutions.

First, firms are affected by the degree of financial market development. In this case, firms without access to developed financial markets may face capital constraints, such that firms may be forced to forgo worthwhile investments (e.g., [14]). Further, firms operating in markets that are financially globalized have superior access to foreign capital markets and are less dependent on the extent of financial market development in their own country. For example, Doidge et al. (2007) show that firms find it costlier to improve corporate governance in countries with poorly developed financial markets.

Second, firms are affected by the degree of economic development. For example, firms situated in countries lacking in critical infrastructure (i.e., security services, telecommunication, utility services, etc.) might find themselves unable to pursue beneficial opportunities due to these constraints (e.g., [19]). Another example is the effect of an underdeveloped labor market, where a labor market in short supply of skilled employees or lacking contract-enforcing mechanisms puts firms who are unable to obtain and retain a robust workforce at a competitive disadvantage (e.g., [21, 22]).

Lastly, firms are affected by the degree of governmental institution development. For example, government ineffectiveness can significantly affect firms through poor regulation quality and lax contract enforcement. This may subsequently limit firm innovation, cause the exploitations of companies, or discourage firms from engaging in potentially beneficial ventures (e.g., [8, 21, 49]).

2.4. Hypothesis development

In summary, extant research to date on both the theoretical and empirical fronts has yet to converge toward a consensus on the underlying mechanisms that link CSR with its observed outcomes (e.g., [28, 29]). While theoretical links between CSR and firm value have been established, whether or not this phenomenon is reproduced in different institutional frameworks remains an empirical question. Thus, we hypothesize that:

Hypothesis 1: CSR creates value for the firm.

Scholars have also put forth evidence that CSR is heterogeneous in nature such that the inherent dimensionality of CSR has implications for value creation (e.g., [2, 13]). Thus, we hypothesize that:

Hypothesis 2: The CSR-valuation relation is heterogeneous in nature and CSR dimension is dependent, such that there is significant heterogeneity in valuation effects across different groups of stakeholders.

Khanna and Palepu [21] introduce the notion of institutional voids, which they define as the absence of institutions or intermediaries that are instrumental in supporting business operations in the context of a country's capital, labor, and product markets, its regulatory system, and its mechanisms of contract enforcement. For example, in an environment with underdeveloped financial institutions, the absence of mechanisms such as financial reportage, watchdog oversight, and analyst coverage works to increase informational asymmetry and decrease market efficiency. It follows that these financial markets will experience a decrease in investor willingness, negatively impacting capital access and forcing firms to seek alternative means (e.g., [50]). Similarly, an environment with underdeveloped economic institutions may force firms to find innovative ways to obtain skilled labor. Anecdotally, Khanna and Palepu [21] describe how Microsoft was compelled to collaborate with local firms and other stakeholders to aid the development of China's software industry and subsequently demonstrated how this has led to significant benefits for the firm. Lastly, an environment with underdeveloped governmental institutions might require firms to leverage their relationship with the government and reputation established by prior dealings, as they cannot rely on the robustness of the judicial system. Indeed, Khanna and Palepu [49] theorize that a key motivation behind a firm's engagement in CSR arises from a need to fill these institutional voids to subsequently allow their business to thrive in these markets. Thus, we hypothesize that:

Hypothesis 3: The CSR-valuation relation is moderated by the institutional frameworks that firms operate in, such that the presence of greater (lesser) institutional voids in financial, economic, and governmental institutions will result in a greater (lesser) valuation effect.

3. Data and methodology

3.1. Data

To investigate our hypotheses, we start by extracting all firm-level constituents of the MSCI AC World Index, which captures large and medium market capitalization stocks of both developed and emerging market countries, on a monthly basis for the time period of 2009 to 2014. We then extract firm-level characteristics from FactSet Research Systems (hereafter, FactSet) and merge this database with MSCI's ESG database. To be included in our dataset, we require firms to have non-missing ESG scores. We also drop firms from Taiwan for consistency across our analyses, as the World Bank does not report important country-level statistics for Taiwan.[2] Finally, we only retain firms that have enough available data to construct control variables. This procedure yields 134,823 monthly observations of 2542 companies across 44 countries and 128 industries.

[2]https://datahelpdesk.worldbank.org/knowledgebase/articles/114933-where-are-your-data-on-taiwan/, retrieved on 30 March 2015

To validate the significance of cross-country variation valuation exposure to CSR, we observe the results of our investigations under differing institutional and macroeconomic conditions in later tests. In this study, we use MSCI's market classification criteria, which segregate our sample of 44 countries into 23 developed markets and 21 emerging markets. **Table 1** provides the number of firms by country.

For our analyses, we exploit a firm-level measurement of how much CSR a firm undergoes to empirically test our hypotheses. The source of this data is MSCI's ESG database, which independently rates firms on their environmental, social, and governance (ESG) performance,

Developed markets				*Emerging markets*			
Country	**Freq.**	**Firms**	**Percentage (%)**	**Country**	**Freq.**	**Firms**	**Percentage (%)**
AUS	4416	85	4.40	BRA	3810	87	11.01
AUT	550	11	0.55	CHL	1143	21	3.30
BEL	794	14	0.79	CHN	4576	84	13.23
CAN	6077	118	6.07	COL	552	11	1.60
CHE	2109	38	2.11	CZE	204	3	0.59
DEU	3046	56	3.04	EGY	433	10	1.25
DNK	741	17	0.74	GRC	414	11	1.20
ESP	1632	32	1.62	HUN	248	4	0.72
FIN	983	17	0.98	IDN	1410	27	4.08
FRA	4705	80	4.70	IND	4011	84	11.59
GBR	6208	122	6.17	KOR	5681	104	16.42
HKG	1808	33	1.81	MAR	117	3	0.34
IRL	279	5	0.27	MEX	1461	30	4.22
ISR	733	15	0.73	MYS	2107	46	6.09
ITA	1672	36	1.67	PER	71	2	0.21
JPN	20,381	346	20.34	PHL	779	19	2.25
NLD	1324	25	1.32	POL	1049	26	3.03
NOR	468	8	0.47	RUS	1093	23	3.16
NZL	341	8	0.34	THA	1073	24	3.10
PRT	417	9	0.41	TUR	1285	25	3.71
SGP	1817	31	1.81	ZAF	3078	55	8.90
SWE	1925	32	1.93				
USA	37,802	705	37.73				
Total	**100,228**	**1843**	**100**	**Total**	**34,595**	**699**	**100**

This table displays the number of firms by country for the time period of 2009 to 2014. The sample includes all firms extracted from the MSCI AC World Index between 2009 and 2014 with sufficient firm-level and CSR data.

Table 1. The list of firms in each country.

assigning them a numerical ESG index score (from 1 to 100, with 100 being the highest). MSCI's ESG constructs indices of sustainable investment value and risk factors of more than 6300 public corporations worldwide using a specialized list of 150 RiskMetrics adjusted for various markets, regional, ownership, or sector differences.[3] MSCI only considers CSR issues that have a material impact on the firm, implying that the index score parallels the firm's investment in CSR. Throughout the course of this study, we utilize MSCI's global rating, which compares each individual firm's ratings to all rated firms.

Table 2 reports the average overall environment (E), social (S), and governance (G) scores and marginal month-on-month changes in CSR component scores by year and market classification

Year	Obs.	ESG	E	S	G	ΔE	ΔS	ΔG
2009	16,976	44.04	44.75	52.36	45.28	0.14	0.05	0.03
2010	22,995	44.91	47.30	52.99	45.22	0.28	0.07	−0.03
2011	23,626	45.17	48.58	52.47	45.75	0.07	−0.07	0.03
2012	23,484	43.24	51.38	55.05	43.91	0.20	0.16	−0.30
2013	24,351	40.17	57.79	49.74	42.58	0.90	−0.24	0.30
2014	23,391	44.44	63.51	50.81	47.18	−0.83	−0.22	−0.11
Total	**134,823**	**43.62**	**52.62**	**52.21**	**44.96**	**0.13**	**−0.05**	**−0.01**
Developed markets								
2009	13,246	45.30	48.07	54.95	44.88	0.15	0.02	−0.22
2010	17,718	45.17	50.83	55.41	43.91	0.28	0.05	0.01
2011	17,605	45.65	52.61	55.36	44.63	0.06	−0.09	0.04
2012	17,411	43.66	54.35	59.15	43.27	0.17	0.38	−0.16
2013	17,345	40.08	60.73	51.59	41.00	0.85	−0.48	−0.01
2014	16,903	44.17	66.06	51.19	46.18	−0.71	−0.21	0.41
Total	**100,228**	**43.96**	**55.67**	**54.62**	**43.93**	**0.14**	**−0.06**	**0.02**
Emerging markets								
2009	3730	39.57	32.99	43.16	46.70	0.12	0.18	0.94
2010	5277	44.04	35.48	44.86	49.64	0.28	0.14	−0.16
2011	6021	43.78	36.79	44.01	49.02	0.11	−0.02	−0.03
2012	6073	42.06	42.85	43.29	45.75	0.31	−0.48	−0.70
2013	7006	40.40	50.49	45.15	46.50	1.00	0.35	1.06
2014	6488	45.16	56.88	49.82	49.77	−1.13	−0.25	−1.48
Total	**34,595**	**42.64**	**43.79**	**45.24**	**47.92**	**0.12**	**−0.02**	**−0.11**

This table displays both the full sample and subsample (i.e., developed/emerging market) averages of overall environment, social, and governance scores and marginal month-on-month changes in CSR component scores by year from 2009 to 2014.

Table 2. The summary statistics of CSR component scores by year.

[3]MSCI's RiskMetrics increased its coverage from 105 dimensions to 150 dimensions starting May 2013.

for our sample. We also plot the time series average of the three CSR component scores over time from **Figures 1–3**.

While firms in developed markets tend to have better environment scores, we note that firms in both markets consistently improve their average score year over year. This phenomenon is not present when we examine social and governance dimensions. For the social dimension, firms in both markets appear to converge toward the middle score of 50 over time. For the governance dimension, we see that firms in emerging markets tend to outperform firms in developed markets. When we observe the marginal month-on-month changes over time, we see that CSR ratings for firms in both markets tend to stay constant over time and appear to have similar patterns of change across all three dimensions. This indicates that on average, a firm's ESG score tends to stay constant, but there are also firms that experience large changes in ESG scores. This is consistent with the fact that firms tend to undergo periodic, substantial investments in CSR (i.e., rethinking energy source procedures, reconceiving manufacturing processes to be more sustainable, etc.) versus gradual improvements over time (e.g., [8, 51]).

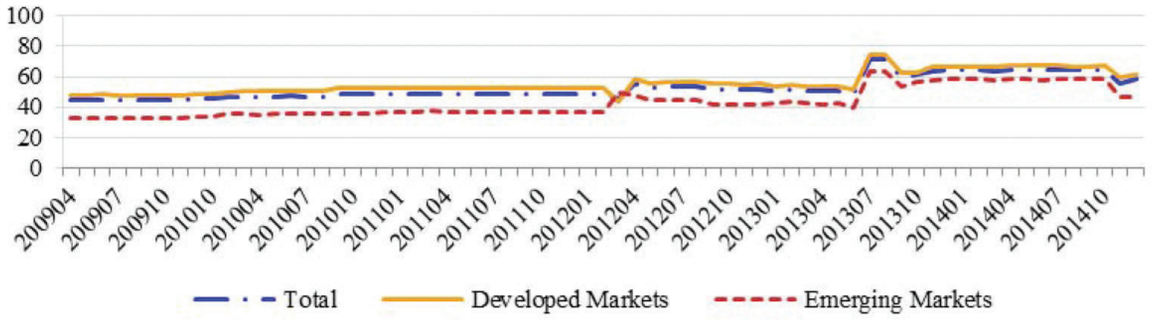

Figure 1. Average environment score.

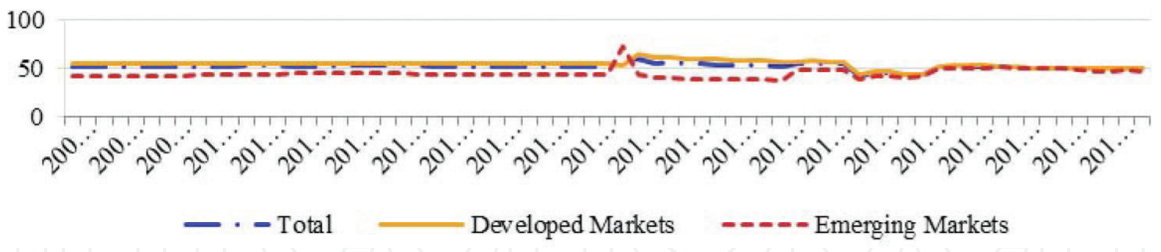

Figure 2. Average social score.

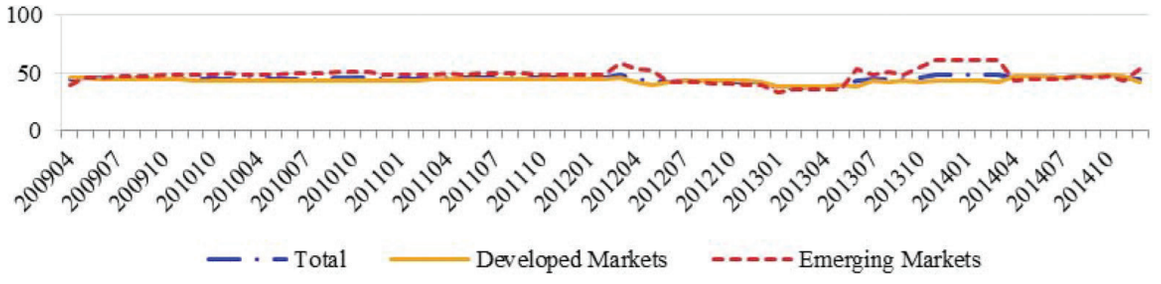

Figure 3. Average governance score.

3.2. Tobin's Q in cross-sectional regressions

To assess the CSR-firm value relation, we examine the impact of CSR on firm value, utilizing monthly Tobin's Q (TOBINW) in our analyses. We define Tobin's Q as the market value of equity minus the book value of equity plus the book value of total assets divided by total assets (e.g., [13]). To mitigate the effect of outliers on our observations, we winsorize Tobin's Q at the 2.5 and 97.5 percentiles. **Figure 4** shows that firms in both developed and emerging markets generally experience similar patterns of firm valuation over the time period of 2009 to 2014. Empirically, we estimate the following equations below:

$$Tobin"s\ Q_{i,t} = \beta_0 + \beta_1\ CSR\ Overall_{i,t-1} + \beta_2\ X_{i,t-1} + \varepsilon_{i,t} \quad (1)$$

$$Tobin"s\ Q_{i,t} = \beta_0 + \sum_{d=1}^{D} \beta_d\ CSR_{i,d,t-1} + \beta_4\ X_{i,t-1} + \varepsilon_{i,t} \quad (2)$$

here, $Tobin's\ Q_{i,t}$ is firm i's Tobin's Q at time t. $CSR\ Overall_{i,t-1}$ is the overall index measure of CSR for firm i at time $t-1$. $CSR_{i,d,t-1}$ is the individual dimension index measures of CSR for firm i relative to dimension d (i.e., environment, social, governance) at time $t-1$. $X_{i,t-1}$ is a vector of firm-level controls obtained from FactSet at time $t-1$, which include return on assets (LROAW), leverage-to-equity ratio (LLEVW), capital expenditure-to-asset ratio (LCAPXW), cash-to-asset ratio (LCASHW), year-on-year sales growth (LSGRW), advertising expenditure-to-total asset ratio (LADW), log of total assets (LASSET), and a dummy variable if the firm paid out dividends (LDDUM). In particular, we take special care to collect data on advertising expenditure as prior research has suggested that the valuation effect of CSR is moderated by firm visibility (e.g., [3, 52]). In order to mitigate the effect of outliers on our observations, we winsorize firm-level characteristics defined as ratios, namely, LROAW, LLEVW, LCAPXW, LCASHW, LSGRW, and LADW, at the 2.5 and 97.5 percentiles. We also include year dummies to account for yearly sources of heterogeneity. $\varepsilon_{i,t}$ is the stochastic error term, assumed to be independent and identically distributed random variables with zero mean and constant variance. Similarly, we also include industry and country dummies to account for industry and country sources of heterogeneity. We are interested in the coefficient β_1 for Eq. (1) and β_d for Eq. (2), which measures whether a firm's CSR drives changes

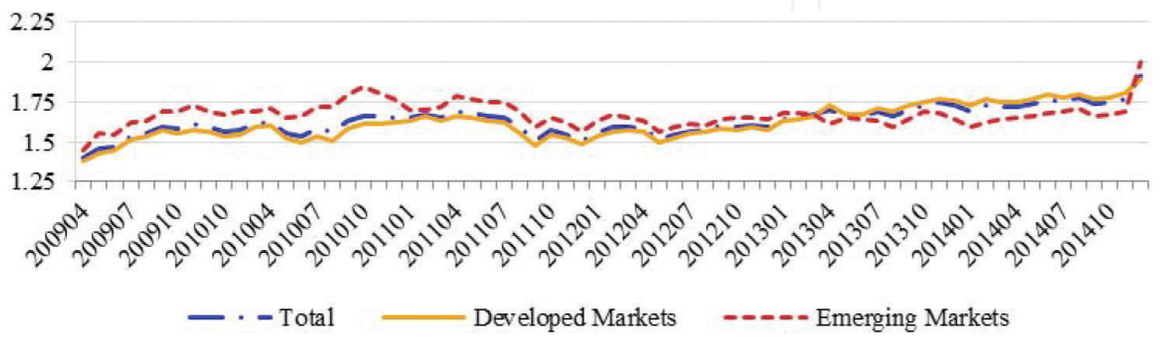

Figure 4. Average Tobin's Q.

in valuation even after controlling for other firm characteristics. Here, the null hypothesis expects these coefficients to be zero, while the alternate hypothesis is that they are significant and greater than zero.

3.3. Institutional void analysis

Next, we explore how the CSR-valuation relation changes in the presence of different institutional voids related to financial, economic, and governmental institutions. To capture the complex and multidimensional nature of a country's institutional framework, we collect a variety of county-level measures to serve as proxies for the presence of institutional voids. We then utilize these measures to observe the sensitivity of the CSR-valuation relation to institutional voids in financial, economic, and governmental institutions (e.g., [21, 49]).

First, we collect measures related to economic development. These include the log of gross domestic product (GDP) per capita (GDPPC) from the Economist Intelligence Unit, Index of Economic Freedom (FREE), and the ratio of total investment to GDP (CINV) from the International Monetary Fund (IMF) to capture the rate of infrastructural development.

Second, we collect measures related to financial market development. This includes the ratio of bank deposits to GDP (GFDDB) from the International Financial Statistics and IMF, the ratio of the outstanding domestic private debt securities to GDP (GFDDP) from the Bank for International Settlements, and the ratio of stock market capitalization to GDP (GFDDS) from the Global Stock Markets Factbook and Standard and Poor's.

Lastly, we collect measures related to governmental institution development. We follow Low, Tee, and Kew [18] in utilizing the World Bank Governance Indexes (WBGI). The World Bank constructs indices from 441 variables taken from 35 different sources produced by 33 organizations (Kaufmann, Kraay and Mastruzz [53]). WBGI measures six dimensions of country governance, which include voice and accountability (WGIVA), government effectiveness (WGIGE), regulatory quality (WGIRQ), rule of law (WGIRL), control of corruption (WGICC), and political stability (WGIPS). **Table 3** reports the summary statistics of the key variables as well as these institutional void measures.

To explore the moderating effect of institutional voids on the CSR-valuation relation, we construct a series of dummy variables. For each measure, we sort countries according to their performance and assign them a value of 1 if they place in the lower 50th percentile for that month. The only exception is the ratio of total investment to GDP, where we assign countries a value of 1 if they place in the upper 50th percentile for that month. For each measure of institutional voids, we rerun our regression estimates with the inclusion of the dummy term and the interaction term of the dummy and CSR. This models the marginal valuation effect of CSR in the presence of institutional voids. Thus, we estimate the following equation:

$$Tobin^{"}s\ Q_{i,t} = \beta_0 + \sum_{d=1}^{D} \beta_d\, CSR_{i,d,t-1} + \beta_4\, IFV_{i,t} + \sum_{n=1}^{N} \beta_n\, CSR_{i,n,t-1} \times IFV_{i,t} + \beta_8\, X_{i,t-1} + \varepsilon_{i,t} \quad (3)$$

here, $IFV_{i,t}$ is a dummy that takes a value of 1 if the country that firm i operates in scores in the lower 50th percentile for a given measure of institutional framework strength at time t and

Variable	Obs.	Mean	Std.	Min.	Max.
Tobin's Q	134,823	1.63	0.93	0.83	5.07
ESG	134,823	43.62	28.77	1	100
E	134,823	52.62	33.30	1	100
S	134,823	52.21	32.13	1	100
G	134,823	44.96	28.40	1	100
Country-level institutional void measures					
CINV	134,823	21.93	6.52	10.86	48.66
FREE	134,823	71.78	8.54	50.30	90
GDPPC	134,823	10.36	0.67	3.02	11.27
GFDDB	134,823	104.80	58.19	17.28	302.74
GFDDP	134,823	52.59	35.66	0.05	193.41
GFDDS	134,823	94.79	50.85	15.17	524.41
WGIRQ	134,823	81.60	16.36	26.32	100
WGIRL	134,823	82.09	17.76	23.70	100
WGIGE	134,823	84.28	14.75	19.62	100
WGIPS	134,823	62.77	21.25	5.19	98.58
WGICC	134,823	80.21	19.15	11.48	100
WGIVA	134,823	77.07	20.65	4.74	100

This table displays both the full sample and subsample (i.e., developed/emerging market) summary statistics for key variables for the time period of 2009 to 2014.

Table 3. Summary statistics of the main variables.

$CSR_{i,n,t-1} \times IFV_{i,t}$ is the individual dimension index measures of CSR for firm i relative to dimension n (i.e., environment, social, governance) interacted with the dummy.

4. Empirical findings

4.1. The valuation of CSR

Models 1 and 2 of **Table 4** report the results of the cross-sectional regressions of 1-month forward Tobin's Q on CSR as shown in Eqs. (1) and (2), while Models 3 and 4 report the results of 2-month forward Tobin's Q on CSR.

Observing Models 1 through 4 of **Table 4**, we note that our results suggest that the aggregation of CSR dimensions has a confounding effect when examining the CSR-valuation relation. Specifically, Model 1 shows that the firm value and the overall CSR score are statistically significant at the 1% level but economically small. One standard deviation increase in the overall

	Model 1	Model 2	Model 3	Model 4
ESG	0.0001**		0.0002***	
	(2.59)		(4.46)	
E		0.0007***		0.0007***
		(18.97)		(17.91)
S		−0.0003***		−0.0002***
		(−9.05)		(−6.96)
G		−0.0001***		−0.0001
		(−2.87)		(−1.53)
Obs.	134,823	134,823	126,749	126,749
R-Squared	0.71	0.71	0.70	0.70
Control	Yes	Yes	Yes	Yes
Ind. dum	Yes	Yes	Yes	Yes
Ctr. dum	Yes	Yes	Yes	Yes

This table displays full sample regression estimates of 1- and 2-month forward Tobin's Q on CSR from 2009 to 2014. The main independent variables are the firm's (lagged) environment (E), social (S), and governance (G) scores. Refer to Appendix A for variable definitions. Regressions include industry and country dummies as indicated. Models 1 and 2 report estimates of Fama-MacBeth [54] regressions of 1-month forward Tobin's Q on aggregated and disaggregated CSR. Models 3 and 4 report estimates of Fama-MacBeth [54] regressions of 2-month forward Tobin's Q on aggregated and disaggregated CSR. Standard errors are clustered on year and country. T-Statistics are reported in parentheses. *, **, and *** indicate the significance level at the 10, 5, and 1%, respectively.

Table 4. The relationship between CSR and firm value.

CSR score is related to an increase in Tobin's Q of about 0.0029, representing an increase of about 0.18% from the mean of 1.63.

Model 2 shows that the three subdimensions have different relations to the firm value. The environmental CSR has a statistically significant positive effect on firm value. These results are in line with prior findings (e.g., [2, 13, 14, 20, 51, 55]). Anecdotally, we also note that actors in the global business environment (i.e., policy-makers, activists, etc.) have long argued for the importance of environmental performance for shareholders, drawing significant attention to corporate environmental conscientiousness (e.g., the toughening of oil sands rules in Canada[4], China's renewed pledge to fight smog post-release of the viral documentary "Under the Dome,"[5] and America's continued push for carbon emission reduction[6]). One standard deviation increase in environmental CSR is related to an increase in Tobin's Q of about 0.02, representing an increase of about 1.4% from the mean of 1.63.

[4]http://www.bloomberg.com/news/articles/2015-03-13/oil-sands-rules-get-tougher-as-alberta-seeks-less-damage, retrieved on 30 March 2015

[5]http://www.bloomberg.com/news/articles/2015-03-07/china-pollution-film-vanishes-as-xi-makes-pledge-on-environment, retrieved on 30 March 2015

[6]http://www.bloomberg.com/politics/articles/2015-03-19/obama-orders-40-reduction-in-carbon-emissions-by-u-s-agencies, retrieved on 30 March 2015

For social CSR, Model 2 reports a statistically significant negative effect in Tobin's Q. This finding is similar to the prior results. Indeed, Brammer, Brooks, and Pavelin [56] find a negative relation between social CSR and market value. A possible explanation for this result is the view that CSR has the potential to materialize as future benefits (e.g., [7, 43]) after stakeholders recognize that firm behavior as being genuine implies that firms have to consistently pursue socially responsible initiatives in subsequent periods before they are rewarded (e.g., [26]; Greening and Turban 2000).

For governance CSR, Model 2 reports a statistically significant but economically negligible negative effect in Tobin's Q. This result is also in line with prior findings (e.g., [13, 14, 24]). In particular, Cheng et al. [14] postulate that the weaker effect of corporate governance stems from the fact that the main driver of corporate governance is the country-level institutional structures that firms operate in.

We also include all the control variables (including LROAW, LLEVW, LCAPXW, LCASHW, LSGRW, LADW, LASSET, LDDUM), industry, and country-fixed effects (e.g., [57]). In unreported results, we find that the effects of our controls are similar to the findings in the literature (e.g., [13, 23]). Specifically, across Models 1 to 4, we find a positive relation with return on assets, leverage, capital expenditure, cash, sales growth, advertising expenditure, and a negative relation with firm size and dividend payout.

In summary, these results provide empirical support for our first two hypotheses, whereby CSR creates value for the firm on average and that the CSR-valuation relation is heterogeneous in nature and CSR dimension is dependent, such that there is significant heterogeneity in valuation effects across different groups of stakeholders.

4.2. The moderating effect of institutional voids on the CSR-firm value relation

Next, we investigate how the CSR-firm value relation changes in the context of different institutional frameworks by modeling the marginal valuation effect of CSR in the presence of institutional voids. **Table 5** reports the results of the cross-sectional regressions of Tobin's Q on CSR with the inclusion of institutional framework dummies and their interaction terms as shown in Eq. (3).

Across all models with different specifications of institutional void (*IFV*), we observe that the CSR-firm value relation (i.e., firms in strong institutional frameworks) is generally consistent with our earlier findings. All coefficients except one for environmental, social, and governance CSR remain generally statistically significant at the 1% level.

In line with our expectations, we find significant differences in the CSR-firm value relation across institutional frameworks in our institutional void analysis. For environmental CSR, all regression models show that environmental CSR has a statistically significant positive effect on firm value for firms in weak institutional frameworks. On average, one standard deviation increase in environmental CSR predicts an increase in Tobin's Q of about 0.067, representing an increase of about 4.1% (given the mean is at 1.63). The average effect is

	Economic development			*Financial market development*		
IFV =	**CINV**	**FREE**	**GDPPC**	**GFDDB**	**GFDDP**	**GFDDS**
E	0.0004***	0.0003***	0.0003***	0.0003***	0.0004***	0.0006***
	(10.94)	(7.02)	(7.16)	(8.09)	(11.34)	(18.15)
S	−0.0005***	−0.0004***	−0.0005***	−0.0005***	−0.0004***	−0.0003***
	(−11.32)	(−10.28)	(−12.22)	(−12.43)	(−11.36)	(−6.70)
G	−0.0001	−0.0005***	−0.0005***	−0.0002***	0.0000	−0.0003***
	(−1.21)	(−13.38)	(−15.31)	(−4.02)	(0.23)	(−7.51)
IFV	1.0252***	−0.1720	0.2777*	0.7313***	0.7070***	−0.1098
	(8.30)	(−0.93)	(1.75)	(5.08)	(5.48)	(−0.77)
E × IFV	0.0009***	0.0018***	0.0022***	0.0012***	0.0020***	0.0003*
	(11.80)	(21.26)	(23.70)	(12.91)	(27.23)	(1.95)
S × IFV	0.0007***	0.0005***	0.0011***	0.0007***	0.0009***	−0.0001
	(6.54)	(4.65)	(8.43)	(7.17)	(8.40)	(−0.37)
G × IFV	−0.0003*	0.0014***	0.0020***	0.0003*	−0.0010***	0.0012***
	(−1.92)	(8.99)	(11.43)	(1.81)	(−4.99)	(5.07)
Obs.	134,823	134,823	134,823	134,823	134,823	134,823
R-Squared	0.71	0.71	0.71	0.71	0.71	0.71
Control	Yes	Yes	Yes	Yes	Yes	Yes
Ind. dum	Yes	Yes	Yes	Yes	Yes	Yes
Ctr. dum	Yes	Yes	Yes	Yes	Yes	Yes

	Government quality					
IFV =	**WGIRQ**	**WGIRL**	**WGIGE**	**WGIPS**	**WGICC**	**WGIVA**
E	0.0002***	0.0002***	0.0003***	0.0003***	0.0002***	0.0001***
	(6.43)	(6.86)	(8.14)	(6.14)	(6.49)	(2.86)
S	−0.0005***	−0.0005***	−0.0005***	−0.0006***	−0.0006***	−0.0006***
	(−12.62)	(−12.56)	(−13.65)	(−14.26)	(−13.40)	(−15.88)
G	−0.0005***	−0.0005***	−0.0005***	−0.0004***	−0.0005***	−0.0006***
	(−14.02)	(−15.34)	(−15.09)	(−9.22)	(−13.99)	(−13.60)
IFV	0.0904	0.2355	0.3498**	0.5049***	0.1936	0.3543**
	(0.54)	(1.44)	(2.27)	(3.14)	(1.15)	(2.36)

	Government quality					
***IFV* =**	**WGIRQ**	**WGIRL**	**WGIGE**	**WGIPS**	**WGICC**	**WGIVA**
E × IFV	0.0020***	0.0021***	0.0020***	0.0016***	0.0020***	0.0025***
	(23.30)	(21.13)	(19.42)	(19.77)	(20.78)	(30.13)
S × IFV	0.0010***	0.0013***	0.0012***	0.0013***	0.0014***	0.0014***
	(9.51)	(11.05)	(11.98)	(12.00)	(12.34)	(15.73)
G × IFV	0.0016***	0.0019***	0.0021***	0.0009***	0.0017***	0.0016***
	(9.40)	(11.96)	(12.19)	(6.89)	(12.37)	(11.82)
Obs.	134,823	134,823	134,823	134,823	134,823	134,823
R-Squared	0.71	0.71	0.71	0.71	0.71	0.71
Control	Yes	Yes	Yes	Yes	Yes	Yes
Ind. dum	Yes	Yes	Yes	Yes	Yes	Yes
Ctr. dum	Yes	Yes	Yes	Yes	Yes	Yes

This table displays full sample regression estimates of Tobin's Q on CSR from 2009 to 2014. The main independent variables are the firm's (lagged) environment (E), social (S), and governance (G) scores. The interaction effect models the marginal valuation effect of CSR in the presence of institutional voids across 12 different measures of institutional framework strength. Regressions include industry and country dummies as indicated. T-Statistics are reported in parentheses. *, **, and *** indicate the significance level at the 10, 5, and 1%, respectively.

Table 5. The link between institutional environment, CSR, and Tobin's Q.

about 0.6% in the strong institutional frameworks. Hence, it indicates an increase of 3.5% in Tobin's Q.

For social CSR, all regressions show a statistically significant positive effect on firm value for firms in weak institutional frameworks. In addition, the interaction between social CSR and weak institutional frameworks is positive such that the joint effect transforms the negative base case effect into a positive one. Interestingly, this suggests that the market recognizes the benefit to the firm upon filling these institutional voids and, thus, actively rewards firms who are working to fill them. On average, one standard deviation increase in social CSR predicts an increase in Tobin's Q of about 0.015, representing an increase of about 0.9% (given the mean is at 1.63). In the strong institutional frameworks, the effect is about −0.9% in Tobin's Q with a one standard deviation increase in the social CSR.

For governance CSR, most regressions show that governance CSR generally has a statistically significant positive effect on firm value for firms in weak institutional frameworks. Similarly, the significant and positive effect of governance CSR also suggests that the market recognizes and rewards firms in weak institutional frameworks who work to fill institutional voids. On

average, one standard deviation increase in governance CSR predicts an increase in Tobin's Q of about 0.02, representing an increase of about 1.3% (given the mean is at 1.63). In the strong institutional frameworks, the effect is about −0.6% in Tobin's Q with a one standard deviation increase in the governance CSR.

Observing the pattern of coefficient significance, we note that our results suggest that the positive valuation effect of environmental and governance CSR is driven by the country's economic and financial sector development, while the positive return effect of social CSR is driven by the country's quality of law and government effectiveness. The degree of the variation is likely caused by the inherently complex and multidimensional nature of governance.

In summary, we find support for our third hypothesis, whereby the CSR-valuation relation is moderated by the institutional frameworks that firms operate in, such that the presence of greater (lesser) institutional voids in financial, economic, and governmental institutions will result in a greater (lesser) valuation effect.

4.3. Robustness tests

We perform two robustness tests. First, we examine the longevity of value creation attributed to CSR to test if our observations are driven by market reaction rather than material value creation. According to theory, CSR should create long-term value for the firm, and as such, we expect that there are no reversions in firm value over a longer time frame. In these specifications, we re-estimate regression specifications (1), (2), and (3) by using 3-month forward values of Tobin's Q. Our results are robust with different forward measures of the firm valuation. This suggests that our observations are likely not driven by market over- or under-reaction.

Second, we examine the possibility that our findings are driven by firms in regulated industries or "sin" stocks (e.g., [3]). As such, we rerun our models excluding firms in regulated industries, which constitute banking, energy, insurance, telecommunication, transportation, and utility companies, and those under the Triumvirate of Sin (e.g., [23]), which constitute alcohol, gambling, and tobacco companies.

We find that our results are similar and lend themselves to the same conclusions and omit these results for brevity. This test provides evidence for the robustness of our results and suggests that the underlying mechanism driving the CSR-firm value relation is not likely due to firms in regulated industries or "sin" firms.

5. Conclusion

This study advances the ongoing research on the effect of CSR on firm value by integrating an institution-based view with an institutional void perspective. We draw on institutional void theory to argue for country-level institutional frameworks as a systemic, institutional-level

driver of CSR value creation. Our study answers the call for a greater understanding of the underlying mechanisms of CSR, specifically at an institutional level, and expands on studies investigating the valuation effect of CSR through an international investigation across both developed and emerging markets. Moreover, by disaggregating CSR into its three discrete pillars, we are able to demonstrate the valuation effect of CSR at a granular level. Consistent with our hypotheses and expectations, we find that CSR has a more pronounced positive effect on firm value in markets with greater institutional voids.

Our results have important implications for managers. For firms operating in weak institutional frameworks, we suggest that CSR may be an effective method to create firm value. Along these lines, firms may adopt higher standards in areas such as product development or human resources, for example. By doing so, firms might be able to accrue valuable intangible assets while simultaneously filling institutional voids. Conversely, in environments with strong institutional frameworks, we suggest that managers only pursue CSR initiatives that are likely to add value, as our results suggest that efforts to deceive stakeholders will likely be futile. This study also presents the disclaimer that CSR may not necessarily be the silver bullet for improving firm performance. Indeed, while CSR may be a useful tool in a manger's arsenal, the fundamentals of good firm performance should stem from solid business decisions and strategies that play to their core competencies.

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Chapter 6

Corporate Social Responsibility and Firm Value: Recent Developments

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Additional information is available at the end of the chapter

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Abstract

We provide a synthesized introduction to recent findings in the link between corporate social responsibility and firm value. The focus is on how and why profit-maximizing firms engage in socially responsible actions, and how such activities can increase product demand and shareholder value. Recent studies in empirical evidences, theoretical models, and trends in practice are discussed. This chapter is not intended to be a comprehensive survey but rather an introduction to bring future research interest in this field. Empirical studies show evidences of a positive impact of corporate giving on indicators of firm value such as shareholder value and financial performance. Theoretical models provide mechanisms and economic foundations for the demand increase leading to profits in different market structures. Socially responsible actions can be induced by external activists for fear of boycotts. Investors may prefer to hold shares of responsible firms when corporate giving can substitute for personal giving. A public good may be produced jointly with a private good. Models of general industry equilibrium find that demand increases due to the public good may come from the endogenous market effect. Companies in industries with entry barriers make the top list of corporate giving. Using examples in the pharmaceutical, finance, and high-tech industries, we discuss how corporate social responsibility is conducted in practice.

Keywords: corporate social responsibility, public good, firm value

1. Introduction

Business corporations contribute significant amounts to the public. Giving USA reported that total giving by corporations in 2016 is $18.55 billion. The Committee Encouraging Corporate Philanthropy (CECP, 2017) report that the median total giving by a corporation increased

from $20.7 to $21.2 million between 2014 and 2016 among 209 companies surveyed [1]. The median of total giving as a percentage of revenue and that as a percentage of pre-tax profit also increased in this period, despite decreases in total revenue and profits. These contributions are directed to diverse programs that are not relevant to production. For example, they are donated to health and social services, education, environment, disaster relief, and so on. Why would corporations contribute to consumption of public goods from which only consumers receive direct benefits? Corporate responsibility is defined as "actions that appear to further some social good, beyond the interest of the firm and what is required by law," or alternatively, "actions which reduce the extent of externalized social costs" [2, 3]. Why would a profit-maximizing firm be interested in social corporate responsibility by making charitable contributions?

This is a first survey on the link between corporate social responsibility and firm value. We focus on how and why companies engage in responsible activities and how such activities can increase product demand and shareholder value. The plan of this chapter is to focus on recent developments. In the following three sections, we discuss recent findings in empirical evidences, theoretical models, and trends in practice. It is not intended to be a comprehensive survey of the literature. With this survey, we introduce this growing literature to the audience and hope to bring more research attention to bridging the fields of business strategy and the provision of the public good. We discuss empirical studies that confirm positive impacts of corporate social responsibility on indicators of firm value. Theoretical models provide possible mechanisms and economic foundations of why socially responsible actions can increase demand in different market structures. Responsible actions can be induced by external activists for fear of boycotts. Investors may prefer to hold shares of responsible firms when corporate giving can substitute for personal giving. A public good may be produced jointly with a private good. Models of general industry equilibrium find that demand increase due to the public good may come from the endogenous market effects. Companies in industries with entry barriers, such as health care, banking and finance, and high technology, are among top charitable givers. We discuss how corporate social responsibility is conducted in practice with companies in these industries as examples.

Studies on charitable contributions found considerable evidence that corporate social responsibility has a positive impact on shareholders. Some have suggested that low contribution levels of corporate social responsibility can improve a firm's value [4], yet too much corporate contributions can pull down shareholder wealth [5]. Most academic research has found that companies that are engaged in corporate social responsibility experience greater stock returns [6, 7] due to establishing greater trust among its employees, customers, and shareholders. The benefits from corporate social responsibility are especially prevalent during times of financial market uncertainty. Investors appear to reward companies that have a history of making charitable contributions with higher stock returns during the financial market crisis of 2008–2009 with between 4 and 7 percentage point returns to companies that exhibited higher corporate social responsibility intensity [8].

Theoretical investigations into corporate social responsibility explore mainly the fact that consumer demand for products increases with the public good. Empirical and experimental evidence on behavior beyond surveys confirm that consumers are willing to pay more for

products associated with charity or environmental friendliness [9]. Sample data from eBay auction show that the winning prices for items linked to charitable donations through eBay Giving are higher than those matched items not linked to donations. And this charity premium decreases with item value [10]. Companies market products with environmental labeling, which is a signal hard to verify by consumers. Experimental studies of laboratory markets show that such signaling of a product increases the product's trade volume even when buyers are subject to various forms of incomplete information [11]. Green products can sell at significant premiums. For example, customers of Patagonia, an outdoor sportswear brand, are willing to pay significant premiums for organic cotton garments [12].

This demand shift induces corporate giving in the environment of imperfect competition. External activists may initiate boycotts successfully when a firm does not conform to responsible standards. Fearing a profit loss from boycotts, the firm will behave responsibly [13]. Consumers may choose joint production of the product and public good over producing separately when the former has a cost advantage [14]. Yet, corporate giving may result in the same equilibrium outcome as individual voluntary contribution [15]. Giving can be an outcome of oligopolistic competition [16]. When investors can choose a portfolio composed of shares of responsible firms and regular firms, those with a higher substitution parameter for corporate giving will buy shares of the responsible firm, and those with a lower parameter would prefer personal giving [17, 18]. The above approaches suffer various degrees of limitations. For example, the warm glow effect is an extra assumption that appeals to personal emotions of giving in addition to public consumption. Portfolio choice models assume fixed profits or arbitrary profit functions, which are not based on market foundations. Recently, models of general industry equilibrium were proposed. The incentive for corporate giving is embedded in the properties of market demand. Consumer loyalty brought by socially responsible actions results in a lower elasticity of demand. This can help a firm to lower the risk in profit stream and induce a premium to its product price [19]. Some private products are complementary to the public good. Stronger complementarity induces higher corporate giving [20].

A few practical reasons cause companies to engage in responsible activities. First, the tax code provides incentives for companies to make charitable contributions as doing so lowers their taxable income. Second, making charitable contributions improves the corporate image. Third, these contributions support the communities in which their employees live making the community a better place to live. Fourth, corporate giving garners respect from the employees. Moreover, these contributions also serve to increase the popularity of the business which may increase consumer loyalty to the company. Fifth, companies involved with social corporate philanthropy receive valuable advertising and marketing from media exposure and positive public attention/recognition.

Given the reasons mentioned above for charitable contributions, which companies are more likely to be involved in corporate social responsibility? We expect that companies which are currently profitable have a greater incentive to provide contributions to social causes. In addition, it may also prove easier to make contributions when a company is profitable than when a company is losing money. The more competitive the industry, the less likely a company is to be profitable which reduces the likelihood of the corporation making charitable contributions.

Companies that are not profitable, have no excess profits to share with society in the public good provision. Hence, we expect to find more sustainable corporate giving in monopolistically competitive markets where an existing barrier to entry may allow companies to earn profits which can be shared with society. There are explanations such as tax incentives which provide incentives for companies to make charitable contributions as doing so lowers their taxable income. The highest US corporate tax rate is 35% and when combined with state and local taxes, the actual corporate tax rate is closer to 39%. Hence, for every $1 contributed to charitable causes, the company can save about 39 cents in lower tax payments. We note that in December 2017, the Tax Cut bill reduced the corporate tax rate to 20%.

Beyond tax incentives, we also expect to find companies that are attempting to either improve on their public image or maintain their public image will seek to make charitable contributions and conducting social corporate responsibility seriously. For example, tobacco companies may feel compelled to be a good community citizen. Pharmaceutical companies with blockbuster drugs which generate large corporate profits may also be seeking to improve their corporate image by contributing to social causes. Companies that have recently experienced a public black eye (e.g., United Airlines received lots of negative media attention for forcing a passenger off a plane) may also be seeking to improve their public image by providing contributions to social causes.

2. Empirical evidence

Prior work in the academic literature on corporate social responsibility and its impact on shareholders has found that idiosyncratic volatility (the portion of companies' stock returns that are not explained by the stock market) is positively correlated with aggregate corporate social responsibility. In addition, some researchers believe that corporate social responsibility reduces flexibility to the company in responding to productive shocks and as a result earnings become less predictable hence the rise in idiosyncratic volatility [21].

How does corporate social responsibility impact shareholders? There is a debate in the literature about this issue as some researchers find at low contribution levels corporate social responsibility has a positive impact on firm value, while this relationship turns negative at high levels of corporate social responsibility expenditures [4]. This initially positive and then negative shaped relationship between corporate social responsibility suggests an optimal level of corporate social responsibility, a result documented by Gillan et al. [5].

On the other hand, there is considerable evidence that companies which take a more active role in corporate social responsibility experience higher stock returns by establishing greater trust among employees, customers, and shareholders. While some may question giving a portion of companies profits to charitable causes, these investments provide considerable benefits especially during financial crises. There are numerous studies that have documented the positive benefits from increased social corporate philanthropy. We will highlight a few of those now. Developing a valuation model, prior work finds through model simulation a positive relationship between firm valuation and corporate responsibility. The authors attribute

the higher firm valuation to a firm's commitment to social responsibility contributions which can increase the firm's probability of survival, improvement in a firm's intermediate and long-run cash flows, and reduce its cost of capital [6]. In addition, the authors also cite a more loyal customer base, more dedicated and committed employees, less likelihood of confrontations with labor unions, consumer advocacy groups or governmental agencies as reasons for higher probability of survival and lower cost of capital.

Others have also found a positive relationship between shareholder value and corporate social responsibility. Using an instrumental variable approach as an identification strategy, they show that firms that are managed effectively have fewer agency concerns (e.g., protection for minorities, strong pay-for-performance incentives, and less cash abundance) are more likely to participate in corporate social responsibility. These results run counter to the belief that corporate social responsibility contributions are a waste of company resources. Hence, the conclusion that corporate social responsibility can be consistent with maximizing shareholder wealth [7].

Other approaches include examining corporate social responsibility in the areas of environment, social, and governance (ESG) sustainability to determine whether investors (short sellers) take into consideration a companies' ESG [22]. They find lower valuations, worse future financial performance, lower return on equity and return on assets for firms that have low composite ESG scores. They also find a negative relationship between short selling and ESG composite scores. Hence, their findings suggest that investors (short sellers) are aware and take into consideration corporate social responsibility when making investment decisions.

More research has found evidence that corporate social responsibility is positively linked with higher firm value [23, 24]. This research has found that corporate social responsibility policies are similar for companies that are located close to one another (within the same 3-digit zip code) [23]. Examining CEO power (as measured by CEO pay slice, CEO tenure, and CEO duality), prior work has found CEO power to be negatively correlated with a firm's participation in corporate social responsibility [24].

Examining stock returns during the 2008–2009 financial crisis, research has found that companies with higher corporate social responsibility intensity had between 4 and 7 percentage points higher stock returns compared to firms that had low social capital [24]. These results highlight the importance of firms establishing trust through engaging in corporate social responsibility. Companies are rewarded for these social capital investments in times when financial markets experience negative shocks.

Other researchers have found higher average stock returns for both US and European companies between 2003 and 2006 for firms that have great corporate social responsibility [25]. They find that the stock returns are larger for the US companies compared to their European counterparts. The robustness of their results that corporate social responsibility holds for companies in both continents lends strength to its importance. When examining large European companies' finances between 2009 and 2014, further evidence that corporate social responsibility matters in Europe is provided as companies with more efficient investors have higher corporate social responsibility. These results also suggest that corporate social responsibility helps firms address both agency problems and information asymmetry problems [26].

3. Theoretical approach

The classical libertarian free-market viewpoint sees that firms should not engage in charitable work with stockholders' money and should leave public goods to the public sector. Even if investors have the option of contributing to the public good via corporate giving in addition to their personal giving, the private channel is more efficient. Moreover, in a perfectly competitive environment, there is no room for charity which reduces profits. This is a well-known argument by Friedman [27]. What lies under the classical viewpoint are the assumptions of perfect competition and that consumer demand for products is independent of the public good. Friedman's viewpoint prevails under these conditions, and there is an ideal separation between the private and the public sectors. If firms, however, do benefit from acts of charity, in the form of increased sales, profits and share price, assumptions for a perfectly competition market must not hold.

Therefore, to incorporate corporate social responsibility into profit-maximizing behavior, there need to be demand increases for firms' products associated with more public good. Moreover, firms operate in a variety of imperfectly competitive market structures. A successful model of corporate social responsibility needs to incorporate imperfect competition and demand shifts by the public good. The literature takes on a few different modeling strategies. We discuss these strands of models comparing the differences in their market structure, production technologies, and components of consumer utility, and how these increase the value of a firm. Firms may engage in socially responsible actions due to external pressure from activists for the fear of boycotts, or responding to incentives internal to the market. Socially responsible actions can take the form of donations to the public, joint production of the public good with products, or a better quality of products. The decision of engaging in socially responsible products may be made by managers in the firm, by investor through holding shares, or by consumers purchasing the products.

Some results in the literature may be driven by modeling features. Consumers consume and firms produce indivisible products; competing firms produce identical products, or the public good is jointly produced with a private product at a fixed ratio. Firms' roles are suppressed; either they are not making production decisions or their actions are limited by indivisibility and linearity. Hence, there is the equivalence result and that corporate giving crowds out investors' personal giving. Firms, however, should have the full range of price or quality decisions and also choice of contribution levels. Discussions on the benefits from altruistic business actions and the different ways in which firms execute them can be found in Ref. [9]. Other model features in the literature include, for example, the warm glow effect, which is an extra assumption that appeals to personal emotions of giving in addition to public consumption. Portfolio choice models assume fixed profits or linear profit functions, which are not based on market foundations. It would be fruitful if the interlinked relationships among the public and private goods, being complementary or substitutive, can be further explored. A model that exhibits different degrees of complementarity and substitutability among different goods would be an alternative approach [28, 29].

3.1. External activists

A firm can expand some output to improve the environment, and such efforts toward the environment will be rewarded by more sales of its product. An activist may also launch a

boycott and threaten the firm into a settlement for more contribution toward the environment. This situation is studied as an extensive form game in Ref. [13]. The firm can link amount of giving g to per unit of output. The firm faces an inverse demand $P(q, g)$, which is a function of quantity q and corporate giving. Corporate giving has a positive effect on the inverse demand, and shows up as an addition to the marginal cost MC in the profit function:

$$\pi = (P(q, g) - MC - g)q. \tag{1}$$

In equilibrium, when the firm has a better market opportunity or the pollution level is high in the environment, the activist will spend more efforts and make a higher initial demand. In this type of model, consumer behavior is limited to one product by one firm. The multiple market interactions are assumed away. The part of firm value due to corporate giving is supported by the threat of boycotts.

3.2. Joint production and consumer choice

This type of models have a production technology jointly producing a public good (or alleviating a public bad) along with the product, called a green product. There is a cost advantage for such joint production over separate production if it requires less input to produce the same combination of product and public good. Consumers are making purchasing decisions maximizing utility. A representative consumer can allocate resources endowment into a private product or an environmental public good [14]. When the joint production of public good is engaged, this is called a green market. When there is a cost advantage in joint production, introducing the green market or improving the green technology may discourage private provision of public good. When the joint production is a simple bundling of the private and the public goods, such as direct donations with a unit of product, the equilibrium outcome is the same as consumer voluntary contribution without joint production.

Consumers have diverse preferences. It is realistic to consider two types of consumers: one type care about the public good and the other type do not [15]. Consumers have linear indirect utility $V(p, g)$ from the product price p and public good g:

$$V(p, g) = b - p + \gamma f(g). \tag{2}$$

The first term b is a constant, $f(g)$ is the utility from public good, and γ is a 0/1 indicator for neutral and responsible consumers, respectively. Each consumer demands only one unit of the product and each firm produces one unit as well. Firms have constant returns to scale technology and constant marginal costs. Giving to public is committed with each unit of output. Firms compete in the market by announcing the pairs of product price and the amount of public good produced jointly with their products. Firms' strategies constitute a sorting Nash equilibrium that separates consumer types. There are two pairs of equilibrium price and social quality indicator for two groups of consumers. Responsible firms contribute to the public good and charge a high price, which is the marginal cost plus a premium. Increase in corporate giving induces short-run profits, and the value of a firm rises while the market adjusts to equilibrium.

We can compare three modes of public good provision in this setting: corporate social responsibility, private voluntary contribution, and government provision. There is a crowding out

effect on government provision from the other two modes. Corporation social responsibility will produce public goods at exactly the same level as predicted by the standard voluntary contribution equilibrium by individuals. Yet, corporate provision has an advantage when public good is naturally bundled together with the private good in production.

3.3. Oligopolistic competition and linked products

This type of models compare corporate giving in oligopolistic markets following Cournot type and Bertrand type of competition [16]. Firms produce identical products. In Cournot (Bertrand, respectively) competition, firms decide their output quantities (product prices) and leave the price (quantities) to be determined in the market. Firms can link a contribution to the public good with one unit of their products. When linked, a portion of sales is donated to a charitable cause. Both versions of the products, linked and unlinked, are available in the market. Consumers demand only one unit of product, either linked or not. They are heterogeneous in the willingness to pay for private and public goods. All consumers enjoy the public good, and there is a warm glow effect [30] associated with purchasing the linked product. They have an additive utility function containing nonlinked product x, linked product y, and public good g:

$$U(x, y, g). \tag{3}$$

In equilibrium, two types of firms compete for socially responsible customers, and this can lead to overprovision of the public good. In this setting, both underprovision and overprovision of public good may occur. There is a tradeoff between efficient private good production and the efficiency of public good provision between these two modes. Namely, there is a higher level of public good under the Cournot competition which also has a higher product price.

3.4. Portfolio choice and managerial decision

The representative investor's utility function contains a private good and a public good. The private good is produced by two firms. One of them is a socially responsible firm that produces the public good together with the private good. Investors may earn financial returns from shares of these two firms. The public good is composed of corporate giving from the firm and personal giving from investors, which also has a warm glow effect on utility. An investor has a choice of giving to charity directly or buying shares of the socially responsible firm and, hence, engaging in altruistic investing. This is a model of corporate giving versus direct giving through portfolio choice [17]. The link between firm value and its giving is explicit in this type of model, reflected in share price. The limitation to this approach lies in the number of firms and competition among firms.

Upon buying n dollar worth of shares of the socially responsible firm, γ cents per dollar of return will be donated to the public good. Thus, private return is $q = (1-\gamma)n$. If the investor gives m dollars to the public directly, she consumes a public good level g, together with private donation as warm glow. And

$$g = \gamma n + m. \tag{4}$$

The investor maximizes utility over the portfolio of shares and direct giving. When the model parameters satisfy a certain condition, shares of the responsible firm trade at a lower price than the neutral firm. When there are heterogeneous investors in the market and some strictly prefer corporate giving to direct giving, the responsible firm will adopt the socially responsible policy of a positive amount of charitable giving in order to maximize share price.

A capital market with heterogeneous investors can be built on this model [18]. Firms have fixed profits and will distribute profits as financial returns. Besides two types of firms, there are also types of investors differentiated by a parameter θ, which indicates how strongly they feel about corporate giving. When corporate giving is a perfect substitute for personal giving, the former crowds out the latter and has no aggregate effect on the public good level. A critical level of θ separates investors into two groups. Investors with lower θ prefer personal giving and will not buy shares of the responsible firm, since corporate giving carries a higher cost. On the other hand, investors with higher θ prefer corporate giving, hence buying shares of the responsible firm.

The mechanism of managerial decision is added to this model in Refs. [31, 32]. Managerial contracts and personal utility induce managers to engage in socially responsible actions. The market value of the firm has a positive covariance with social returns. Firm's profit function $\pi(e, S)$ is determined by managerial effort e and social expenditure S. There is a distribution of managers with differentiated ability levels, parameterized by a. Managers have utility function $u(I, e, S)$, where I is the compensation specified by a managerial contract. The contract compensation $I(a, e, S)$ is determined by a linear function of observed profit π and social expenditures. There are two parameters in the I function that set the profit incentive and social incentive for managers. Managers maximize utility over two policy variables, the effort e and social expenditure S. Investors who own shares of a firm receive a financial return equal to profit minus contract compensation to the manager. Parameter θ shows how strongly investors prefer corporate giving to personal giving. It separates investors into two groups, those with lower θ will give personally and buy no share of the responsible firm, those with higher θ buy shares but will not give personally.

3.5. Monopolistic competition and industry equilibrium

Some results in the approaches discussed above may be driven by their modeling features. Consumers consume and firms produce indivisible products; competing firms produce identical products; or the public good is jointly produced with a private product at a fixed ratio. The equivalence result between corporate giving and personal giving comes from these modeling features that suppresses the roles of firms. Either they are not making production decisions or their actions are limited by indivisibility and linearity. Firms in an ideal model, however, should have the full choice range of price, quantity, and also contribution levels. Discussions on the benefits from altruism and the ways in which it is executed in corporations are provided in Ref. [9]. Other model limitations include, for example, that the warm glow effect is an extra assumption that appeals to personal emotions of giving in addition to public consumption. Portfolio choice models assume fixed profits or arbitrary profit functions, which are not based on market foundations. We introduce two recent approaches that incorporate a market of many firms.

Socially responsible actions by a firm can bring customer loyalty from those who care about the public; this leads to less elastic demand. With a lower demand elasticity, firm's profit is less sensitive to market fluctuations and provides a less risky stream of financial returns to investors. Thus, corporate social responsibility is a tool of risk management [19]. There are two types of products in the market. All products c_i are labeled on the unit interval representing variety, responsible products distribute over $i \in (0, \mu)$ and regular products distribute over $i \in (\mu, 1)$. A responsible product has a lower elasticity of substitution σ_r and a regular product has a higher elasticity of substitution σ_n. The parameter α is the share of expenditure on responsible goods. Representative investor's utility is

$$C = \left(\int_0^{\mu} c_i^{\sigma_r} di\right)^{\frac{\alpha}{\sigma_r}} + \left(\int_{\mu}^{1} c_i^{\sigma_n} di\right)^{\frac{1-\alpha}{\sigma_n}} \quad (5)$$

A firm can choose to invest in a production technology for a product among the continuous variety of products. It takes a fixed cost investing in one of these technologies. The fixed cost of socially responsible technology follows a distribution with a lower bound that is smaller than the fixed cost of the regular products. After acquiring the technology, production has constant returns to scale. Investors are endowed with stocks and cash. They allocate endowment into consumption, stock holdings, and bonds. In period one, investment decisions are made and there is an aggregate consumption good which is not differentiated. It is found that responsible products sell at a premium to regular products. Shares of responsible firms trade on average higher than those of regular firms.

Another approach explores the interlinked relationships among the public and private goods, being complementary or substitutive. Consumer utility contains multiple private goods that exhibit different degrees of complementarity and substitutivity with the public good [28, 29]. There is no cost advantage in public good production tied with any product. The public good has differential effects on private products; it may be complementary to one and substitutive to another. For example, roads will increase the marginal utility of automobiles; this is a public good complementary to private products. On the other hand, national defense and police force will decrease the marginal utility of privately owned firearms; this is a public good substitutive to private products. PBS programs will increase the marginal utility of television sets and at the same time decrease the marginal utility of television programs. Without assumptions like cost advantage in joint production or indivisibility, complementarity is enough to explain the endogenous demand increase caused by a public good. When there are products that are complementary or substitutive to the public good in various degrees, it is apparent that firms whose products that are more complementary to the public good will face demand increases with a higher public good. Thus, there are incentives to contribute to the public. Firms whose products that are more substitutive to the public good suffer a demand decrease with a higher public good level.

A model of monopolistic competition with differentiated products and a public good is presented in Ref. [20]. Individuals and firms contribute at the same time but for different reasons. Individuals are looking to enjoy the public good directly, while firms contribute to induce demand increases. Consumers and firms can choose quantities freely in the market (products

are not indivisible); corporate giving is a separate decision from production (do not need to be joint production). There is a profile of private goods $(x_1, x_2, \ldots)$ and a public good g. The price of each x_i is p_i. Consumer utility is $U(x_1, x_2, \ldots, g)$. With wealth w and indirect utility V, the demand for a private good x_i increases with the public good, if

$$\frac{U_{xg}}{p_i} - \frac{\partial^2 V}{\partial w \partial g} > 0. \tag{6}$$

A firm chooses quantity as strategy, find corresponding prices on the demand curve, and then announce prices in the market. This is an approach advocated by Refs. [33, 34]. By analyzing the derivative of the profit function with respect to g, we found a cutoff point for the cross partial derivative U_{xg}. Demand for a product with larger U_{xg} increases more strongly with the public good and the firm contributes more. And demand for a product with a smaller U_{xg} decreases with the public good. The equilibrium condition for corporate social responsibility and that for voluntary contribution are independent, and hence they are not perfect substitutes. More corporate giving from a firm whose product has a higher U_{xg} will increase demand and its value. In this setting, giving is a strategic market decision under competition with other firms.

4. Practice

In practice, companies engage in responsible activities for a few main reasons. First, the tax code provides incentives for companies to make charitable contributions as doing so lowers their taxable income. The highest US corporate tax rate is 35% and when combined with state and local taxes, the actual corporate tax rate is closer to 39%. Hence, for every $1 contributed to charitable causes, the company can save about 39 cents in lower tax payments. Second, making charitable contributions improves the corporate image. In addition, these contributions support the communities in which their employees live making the community a better place to live. Corporate giving garners respect from the employees. Third, these contributions support the communities in which their employees live making the community a better place to live. Fourth, corporate giving garners respect from the employees. Klara Kozlov, head of corporate clients at the Charities Aid Foundation cites companies desire to "do good" as motivation for corporate gifts. Moreover, these contributions also serve to increase the popularity of the business which may increase consumer loyalty to the company. Fifth, companies involved with social corporate philanthropy receive media exposure and positive public attention/recognition. Hence providing the company with valuable advertising and marketing.

There are numerous examples of companies who are involved in corporate social responsibility. We provide some examples here, highlighting some of the companies that have recently been recognized for their generosity. In the United States, the Motley Fool in 2017 ranked the 12 most charitable US companies with health care, bank, and technology companies leading the list [35]. While there were two notable exceptions in Exxon and Walmart on the leading charitable company list, the remaining companies were comprised of health care, banking, and technology. The key component that drives corporate donations is company profitability.

Companies that are not profitable or are losing money do not have money to give away for public goods. The US companies which dominate the most charitable list of Motley Fool share a common attribute - there are considerable barriers to entry, for example, the pharmaceutical companies on the list are Pfizer, Gilead, Merck, Bristol Myers Squibb, and Eli Lily, all have block buster drug patents that generate millions in profits for the companies. These health care companies may be trying to change the narrative when it comes to negative media attention about outlandish drug prices. For example, President Donald Trump tweeted on March 7, 2017: "I am working on a new system where there will be competition in the drug industry. Pricing for the American people will come way down!" [36].

In the technology industry, Alphabet (parent company of Google), Microsoft, and Cisco also appear on the Motley Fool's 12 most charitable US companies list. These high-technology companies are highly profitable and due to their market dominant position they possess, market power. Moreover, their leading position creates a significant barrier to entry for competitors. What is driving these companies to make charitable contributions? One research study found that people received greater happiness from giving away money to others rather than spending money on themselves [37]. In corporate giving, Alphabet has taken this approach in its corporate gifts as it has provided money to its clients to donate to charity, where the client chooses who receives the donation via the nonprofit web site. Such actions by Alphabet promote Google's mantra of "don't be evil" while earning loyalty and respect of its employees and clients.

Financial companies Goldman Sachs and Wells Fargo appear on the charitable list as well. It is ironic that Wells Fargo appears on the most charitable list, given since 2009 to 2015 Wells Fargo created 3.5 fake bank and credit card accounts. In an effort to re-gain consumer and public trust Wells Fargo may feel compelled to continue to make charitable contributions in an attempt to change the perception of Wells Fargo. The financial industry also has significant barriers to entry with the market structure being monopolistically competitive. Charitable contributions by financial institutions are not limited to the United States, since in the United Kingdom the industry sector with the largest average cash and in-kind gifts occurs in the finance industry [38].

One of the most competitive industries in the United States is the airline industry. Since September 11, 2001 there have been 12 chapter 7 filings (company closes) and 29 chapter 11 filings (re-organization). Of the four largest US carriers today, three of them (American Airlines, United Airlines, and Delta Airlines) were at some point in Chapter 11 bankruptcy since 2001. The remaining exception is Southwest Airlines which has never declared bankruptcy. Hence, we should expect to find larger charitable contributions for Southwest Airlines compared to its peers. In 2017, Southwest Airlines provided nearly 39,000 free flights for a combined value of more than $19 million in total charitable gifts [39]. In 2016, American Airlines provided $23.5 million in total charitable giving [40].

Next, we examine reasons beyond profitability to explain corporate social responsibility. Some businesses may choose to make charitable contributions in lieu of advertising/marketing expenditures as these businesses may see the chance for possible public recognition as "free" advertising and marketing. For example, Texas Roadhouse operates in such a fashion

as explained by David Hollinger (Managing Partner of Texas Roadhouse in Greenville, NC) since Texas Roadhouse views making charitable contributions to non-profit organizations as a "part of the fabric of the community. In return, we hope that people choose to eat at our restaurant" (interview with author January 11, 2018).

Additional evidence that corporations make charitable contributions as a form of advertising comes from outside the restaurant industry. Consider Allstate Insurance company which makes a contribution to the universities general scholarship fund for each field goal that lands in a net with the Good Hands logo of Allstate. There are 90 college and university stadiums as well as championship and bowl game events that carry the Good Hands logo. Moreover, the television broadcasters also mention the contribution that Allstate is making to the scholarship fund. Clearly, Allstate is receiving "free" advertising for these contributions. Upon further examination of the Allstate contributions to the Good Hands Field Goal Net Program for the 10-year period 2005–2014, it has been found that Allstate contributed $3.4 million to scholarships or about $340,000 per year in scholarships [41]. Given that 90 universities carry the Good Hands logo on their nets, this translates to about $3778 per school per year which would cover about 50% of one semester tuition and fees for an instate resident to attend the University of Michigan. Given that the cost of a 30-section television ad on ESPN during the National Championship game in 2016 is $1 million [42], it is no wonder that Allstate has chosen the "free" advertising of the Good Hands Field Goal Net Program.

5. Conclusion

Companies may feel compelled to undertake socially responsible actions for a variety of reasons including to lower their taxable earnings, to become a fabric of the community, to encourage consumer loyalty, foster employee pride/satisfaction, and to receive "free" advertising/publicity. Companies that are more inclined to make charitable contributions may also have more profits to share with the community. Moreover, the most charitable companies in the USA possess the characteristics of being both highly profitable and these companies have a market dominant position in their industry, which may explain why high technology, big pharmaceutical companies, and large financial institutions predominantly comprise the most charitable companies in the United States. There is overwhelming evidence provided on both continents that firms which engage in corporate social responsibility have higher firm valuations. At the heart of these companies that voluntarily choose to go above and beyond by making contributions to society is the creation of trust. This trust encourages loyalty among consumers and loyalty among employees. When financial difficulty does arise, this loyalty that companies have accrued through being good corporate citizens gets repaid in terms of better stock market performance during the financial crisis.

Empirical studies confirm the positive impact of corporate social responsibility on firm value. Yet, there are different types of socially responsible actions, such as environmental and social compliance, donation to charitable causes, and public good linked products. Their impacts may realize in investors' expectation of a better company perspective or in consumer's preferences bringing in a higher product demand. Future research may aim to identify and distinguish the

quantitative effects from different responsible actions and different channels. Theoretical models study in various market situations, how corporate social responsibility affect firms' value and competition. In the market, a firm's decision to contribute to the public is influenced by the interactions among consumers, investors, managers, and activists. The firm contributes to the public good through joint production of monetary giving. Firms compete in market structures of different degrees of competitiveness. Socially responsible actions can increase firm value via demand increases. These demand increases are usually exogenously assumed without a market foundation. Recent approaches embed demand increase in the competition among firms in the full market of industry equilibrium. Corporate giving is endogenized as one among other market strategies of firms, like price and output quantity. This research direction is fruitful and there is a need for empirically testable models. In a competitive market, perfectly or imperfectly, we can examine and test the substitutability of corporate social responsibility for other market strategies. For example, spending on corporate giving may crowed out investment, advertisement, and product development. We also need a well-defined welfare comparison for the effects of increased public good and efficiency loss in the market. This is a growing area that bridges business strategy and the provision of public good.

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Chapter 7

Public Company Communications with Equity Investors and Firm Value

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Additional information is available at the end of the chapter

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Abstract

Corporate governance is essentially developed from the characteristics of a public company. In such a company, there is a strict division between entrepreneurship and ownership, which results with agency problem between management and stockholders in asymmetric information's conditions. Therefore, the communication of society is with the investor's public, which is one of the key areas of corporate governance. This is primarily related to existing and potential firm's stockholders, who use that information for the assessment of existing, or potential investment. There are many ways of communication. Periodically, the most comprehensive is by using financial reporting. Unfortunately, today's common financial reporting practice are not directed to existing and potential firm's stockholders. Reporting shows business value primary as firm's assets value and stockholders are observing assets as financial potential, and are primary interested in economic value based on expected cash flows and risk reward relationship. Because of that, there are big challenges for the improvement of financial reporting. Furthermore, there are many challenges to improve alternative ways of firm's communication in the areas of main risks exposure of firm's business operation, business strategies, fair approach to investors, etc. All these improvements have significant potential for better assessment of firm's value.

Keywords: corporate governance, communications with investors public, components of firm's value, assets value, economic value, risk, financial reporting

1. Introduction

The separation of entrepreneurship from ownership in modern economy enabled the concentration of capital in the individual economic entities. This enabled the transformation of

business activities from the universal owner-entrepreneurs to the well-educated and well-trained professionals who should perform all of their tasks in the best interests of the owners of such large and complex economic entities. This feature of contemporary economics has been made possible through the transparent and efficient financial market, particularly the capital or, more specific, the stock market. The stock market allowed the generalization of individual and personalized owner's goals and transformed them at a level of the company's long-term stock market values, and the stock market values became the owner's instrument for achieving greater wealth.

The separation of ownership and entrepreneurship raises the issue of additional mediation between people because of the entrepreneurship and property rights which were once contained in a single person (i.e., owner), now manifest through the action of the managers as the agents (the principal) working under conditions of information asymmetries. Therefore, one can conclude that the agency problem [1] exists not only in modern public corporations with the relation between the management and the owners, but also within owner interest groups, primarily between small and large shareholders, those who hold significant interests in the company. Agency theory [2] shows how the problem of agents in terms of conflict of interest can lead to specific securities' categories agency cost [3]. The problems of agents and associated information asymmetries have begun to interest the academics and the practitioners in the early twentieth century, especially after the Great Crisis [4] in a framework known as corporate governance.

It is possible to significantly reduce the agency problem in an environment that increases the information symmetry between agents and principals, managers, and owners (shareholders). Therefore, for a public company, the communication with public investors on financial markets is *conditio sine qua non* of existence as well as the privilege of the public company to obtain the largest amount of capital at the lowest costs [5]. This necessity is primarily related to communication with existing and potential shareholders. However, possible conflicts of interest between creditors and owners may also arise. Conflicts of interest are commonly brought up in the context of over indebtedness and deterioration of the company, unless one does not wish to expand the concept of a creditor on those who spontaneously lend to the company, such as, for example, the vendors.

The financial economy and the financial industry are considered to be important and extremely sensitive segments of the economy, which is why the financial markets, particularly the capital market, are highly regulated. Of course, this implies that the financial market regulation and financial supervision, have a significant impact on the public company communication with the overall investment public. Financial supervision is organized differently in different countries. Still, most often, it is decentralized, with demands that often impose supervision of banks focused primarily on banking business and the protection of creditors [6]. In a broader sense, public company communication with investors is affected also with other supervisory bodies in the economy. The globalization of the financial markets on public company's communication with investor's public is increasingly affected by the international financial supervision, where once again the supervision of banks dominates, along with different international bodies responsible for communication harmonization.

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This chapter aims to initiate a professional and academic debate on improving public company communication whit of equity investors for the main purpose of enabling valuation of a company as close as possible to its real intrinsic value. This applies to all forms of communication and, in particular, to financial reporting. Although we are witnessing significant success in standardization and harmonization of financial reporting worldwide, there are still many problems in using financial statements in the valuation process. In this context, the initial assumption is that today's financial reporting is oriented to the lenders rather than the equity investors. Financial reporting does not explicitly contain descriptions of main operating and financial risk exposure of the firm. Furthermore, increasing use of fair market value principles for valuation financial statement position increases subjectivity and opens the possibility to prepare targeted financial statements.

2. Company value

Corporate governance is a complex concept which is differently understood, in part due to the broad understanding of the term "governance," as the job between the board and the reign. However, both the board and the reign have their legal basis, but with respect to those that are managed or governed, it can also be based on promises (paraphrase of [7]). Because of this, the communication with those who are governed, as well as with other stakeholders, is an integral part of corporate governance. Corporate governance encompasses processes, customs, laws, policies, regulations, and institutions that affect how a firm is managed and controlled. Although corporate governance refers to many stakeholders, it is mainly focused on the shareholders of the company.

Corporate governance is an internal system which comprises policies, processes, and people that serve the needs of shareholders and other stakeholders, by directing and controlling management activities according to sound business practice, company goals, responsibilities, and integrity. Proper corporate governance is evaluated by obligations made to the external market and legislation, as well as by healthy governance that protects policies and processes [8]. It is aimed at maintaining the balance between economic and social goals and likewise between individual and common goals. The aim is to align the interests of individuals, corporations, and society as nearly as possible [9]. Corporate governance could also be considered as an economic discipline focused on incentive mechanisms for motivating the management of a corporation, such as contracts, organizational schemes, and legislation. It is often limited to issues of improving financial performance of the company [10].

Corporate governance is primarily focused on the principal-agent problem and asymmetry of information in creating value for shareholders. Valuation under corporate governance is also connected with the transaction cost theory introduced by Ronald Coase [11]. Principals are shareholders, and the principal-agent problem is often observed between shareholders, government, and executive management. The role of government is to protect the interests of shareholders, or to direct the business according to shareholders' interests. Essential aspect of effective corporate governance with lowest possible agency costs is whether the government

will assume the role of managing operations (executive management) or will it be protecting the interests of shareholders. Furthermore, agency problem can be observed inside interest groups with key potential conflicts among shareholders, primarily between large and small stockholders. The great, as a rule, appears as a part of the Administration, and to some extent directs the company according to their partial interests.

The principal-agent problem under asymmetry of information incites communication between the firm and its shareholders. In this sense, financial reporting is, along with other publications and announcements for the investment community, subject to corporate governance. While investors seek to influence the practice of financial reporting and communication of publicly traded companies with their financial environment (primarily through associations of financial analysts), the fact is that financial reporting is strongly influenced by financial supervision and is primarily concerned with protecting creditors and preserving the stability of financial institutions and the financial system in general. This argument is further enforced with practices of earnings management. This is significantly under the influence of financial market regulation, several corporate governance standards, and is, to a great extent, under the influence of the financial market's strength to force corporate administration to established dividend policy in the interests of the small shareholders [12].

Regardless of the interests of other stakeholders, corporate governance is always focused on satisfying the interests of the owners of the corporation. Their interest can be viewed through a consensually accepted goal of the firm in the context of financial analysis—long-term increase in stock value, which is always the subject to the interdependence of risk and reward [13]. According Peterson [14], the value of all businesses, large or small, is based on these three components:

- what a business owns;
- what a business earns; and
- what makes the business unique.

A business owns specific assets. Total assets represent the specific financial potential available for making money. This implicates that a business may hold assets which might prove unnecessary for operations and could be questionable to profitable holding. Assets can be found in the business's balance sheet, which is thus a starting point for firm's asset evaluation and a useful indicator of business value.

Every business earns through its business operation. This can be viewed as profits or incomes or as cash flows. Firm's profits are determined with accounting convention based on both commodity and cash flows, while firm's cash flows, as earnings results, are determined on cash flows. Realized profits in near or distant past can be found in profits and losses (or income) statements. This makes aforementioned statements a starting point for forecasting firm's earnings [15]. Earnings analysis is the first step for analyzing the earnings power as well as analyzing and forecasting the expected cash flows as usable economics incomes unlike profits as accounting or accrual income.

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Every business is a specific, distinctive operating unit, which, to a degree, makes every firm unique. On one hand, this uniqueness determines the risk of investments, but on the other hand, fit determines the desirability of investment in its business. Business' uniqueness impacts both risk and desirability of investments, as well as the value of assets and earnings. In short, it reflects firm's earnings power value. Expected earnings must be evaluated with opportunity costs, founded on risk-reward trade-off. Opportunity costs can be quantified with risk adjusted discount rate for determining earnings present value. This refers to the net present concept of business cash flows which quantitatively depends on discount technique.

Each of the aforementioned components of business value has a specific influence on its value. They can be combined in various ways with a, sometimes, surprising result. For example, a firm which owns respectable assets can produce goods unaccepted by the market and in turn loses money in operations. For a normal investor, the value of this firm is pore. However, for an only competitor, this firm may have a high acquisition value to obtain monopolistic extra profits, or to acquire assets below replacement costs for additional outputs. In contrast, a firm with pore assets can produce high profits and generate significant cash flows, if its location allows monopolistic position. However, with the construction of new roads, the location of this firm can become bad and disable future high profitability.

If the observed value of a company from the buyer's or investor's standpoint is in the equity, then it is certainly the case of buying earning power of the expected cash flows. Such an investor plays the role of external analysts who observes the component of earning power more easily in the financial potential of the assets, because the fine procedures of using that potential in the realized and expected profits and cash flows, which can be easily detected by an internal analyst, are hidden from him. This, of course, does not mean that an external analyst will avoid exploring deeply the component values of the analyzed companies.

If the company's assets are its earning potential, then the value of a company can be viewed as the total value of the assets and as the value of the expected cash flows. Even more, under certain conditions, these two values should be equal. This means that the market value of the assets of the company in its basis should have the present value of the expected cash flows from its profitable use. These expected cash flows will be, in a variety of ways, distributed across the company's investors, so that the value of the companies' financing instruments (stocks and bonds and other financing contracts) must be equal to the value of the assets of the company. This is because one deals with the present value of the same amount of expected cash flows, which are allocated with the financing instruments.

One can declare the market value as the intrinsic value that corresponds to the value of the earning strength only in the conditions of a perfect market, which acts as an ideal laboratory for the analysis of the economic impact solely according to the model of the Nobel Prize winners, Modigliani and Miller [16]. Even then, it is valid only in the conditions of the market equilibrium, where all assets and all liabilities are fairly evaluated with market prices [17]. Namely, in the conditions of equilibrium on the perfect market, all assets and liabilities are perfectly marketable and have no doubtful transparent prices. In such conditions, the company is worth as much as its total assets and that is the present value of expected cash income from its holdings. This value must match the value of the obligations of the company

including those implied according to the ownership equity. Overall, it represents the present value of expected cash flows of the bonds and other debts, as well as from the stocks.

We can all agree that a perfect market does not exist. Although the financial markets, at least in the developed countries, can be considered efficient [18], they are far from a perfect market. In fact, the market values the company's earning power. Partly that power is contained in the value of the assets as the financial potential presented in the company's financial statements, and partly, it is the result of some kind of intangible assets that is visible only in the perfect market. Talking about the financial statements leads us to a new controversy, that of evaluation, which is expressed through the concept of fair value of the asset that is embedded in the dual normative basis of financial reporting.

The questionable term fair value, originates from the principles of evaluation of the assets in the financial statements according to the principle of market value. Therefore, the fair value is embodied with the assumptions that it is the result of consensus between at least two parties (buyer and seller) that neither side is not in force and that all sides are well informed. This defines the price which only oscillates around values, so it is only exceptionally equal to true, intrinsic values. Even more, it seems questionable to talk about fair prices if they are not determined in a transparent market with many competitors on both sides (i.e., buyers and sellers). Bilaterally negotiated price can hardly result in satisfaction on both sides. It can hardly be a fair price. Subjective estimations are too often used to determine the fair value, and thus, fair values are even more questionable than historical values based on explicit and documented acquiring costs.

Through the fair value principle, one can easily derive the value of firm's stocks or equity, by solving the balance sheet equation. The equity is equal to the difference between the value of the assets and the value of the obligations. The financial statements present mainly the real, tangible assets, and not the intangible assets that truly define the earning power. By ignoring the various reserves and by treating current, not yet distribute earnings, as retained earnings, the book value of equity can be viewed as par value shares plus a premium at the time of issuing, minus a value for which the company bought it back in treasury. This refers to a paid-in capital which is related to the outstanding stocks. This value is periodically increased with generated and non-distributed earnings (profit), and reduced through losses.

3. Communication between the firm and its shareholders

A public company must continuously communicate with investor's public to shrink the information gap that arises from information asymmetry between the management and existing or potential investors. Because, from the investors' point of view, the focus of communication is in stocks' value, which makes the dominant communication of financial nature. In terms of economic value [19, 20], communicated information should include the description of expected stock and other financing instruments profitability (i.e., the prosperity of the company and profitability) and the description of this profitability risk to establish appropriate discount rate [21]. Therefore, the financial manager plays a key role in the public company as a mediator between the company with its needs for assets and the financial market participant's and their earnings requirements [22].

Clearly, the communication between the public company and the investor's public is the key element of corporate governance. Communication reduces the information asymmetry and allows investors to rationally decide what to do with the public company financing instruments. However, this communication must not expose critical information to the competitor which will ensure that the company achieves greater value for shareholders. Limited communication takes place with the objective to attract the largest circle of investors that will supply the public company with capital and is, as such, targeted to paint an attractive picture of the society to the potential suppliers of capital [23].

Public company communications with investor's public is conducted through various announcements, disclosures, and company activities in areas particularly sensitive to future profitability and the risks of holding the financing instruments of the company. This communication can be continuous or occasional. Continuous communication is achieved by the implementation of the adopted decisions in the areas of financing, investment, and dividend policy. Because it is vital to keep certain information away from the competition, this communication is most frequently implemented through signals that the public investors group receives when such procedures are carried out in the public company. Signaling occurs as a continuous communication that puts pressure on the company to pay close attention to decision-making and how it will reflect with public investors. One of the key signals is those which communicate fair relations with stockholders without any tendencies for expropriation of their wealth.

Information that can be publicly disclosed regardless of the competition can represent occasional or continuous communication. A good example is the publication of declared quarterly dividends, which represents a daily as well as specialized means of communication in many public companies in the US, and has become a regular form of communication. The announcement seeks to show strength and financial stability of public society which can continuously distribute profits to their owners and in this way, ensure a stable growing current income [22].

A special, extremely significant, part of communication is the financial reporting. Today, it is linked to the quarterly publication report, whereby the annual set of financial statements must pass a public verification from an independent audit. Financial reporting, today is, a standardized form of communication with the investor's public that, along with a standardized set of financial statements, includes specific justifications which make these reports easier to "read" for the interested investor audience. Because of continuity and the importance of this form of communication one cannot avoid cherry picking the information in the reports, in order to show the company as more attractive to investors.

More exhaustive and meaningful form of communication with the investor's public is the company's emission prospectus. Unlike financial reporting, it contains a set of financial statements and a set of pro-forma financial statements of the expected future period, as well as a number of other relevant information. It is a form of occasional communication that is compiled for the purposes of the emission of stocks, bonds, and other public company financing instruments. The most significant prospectus for the public company is the new common stock emission, while other emission prospectuses cover smaller content. How public companies emit bonds and other forms of obligation's much more often than stocks, emission is especially emphasizes occasional form of communication.

Public companies implement other forms of occasional public communications with different announcements of expected business results. It is a tendency that these announcements become more frequent. Because there is no standardized and verified form of communication with the investor's public, such announcements should be taken with a grain of salt because they are largely targeted to attract investors. So, for example, disclosures of the expected sales growth without a good explanation how it will track the growth of profits significantly alters the expected business future of the company.

Periodic financial market crises significantly influence the volume and the frequency of the public company communications with investors, because it represents the opportunity to detect manipulation and deceit. Perfect example is the significant interest in corporate governance, which began after the great depression, so that even today the monograph [4] affects the academic debates about corporate governance. Similar event happened at the turn of the Millennium, after the collapse of the capital markets. This was primarily due to the collapse of the dot.com companies markets and scandals involving large world-known companies such as, for example, Enron, which ranked seventh in 1999 Fortune 500 list of best American companies [24]. This led to the passage of the Sarbanes-Oxley Act (SOX). The law was passed July 30, 2002, and named after Senator Paul Sarbanes and Representative Michael G. Oxley [25].

The reform in the area of corporate governance continued once again soon after the global world economic crisis started breaking down the American mortgage markets. Among the many legal acts and plans for the salvation of the economy, this reform resulted in a "Financial Regulatory Reform" [26]. The legislation seeks to restore confidence in the integrity of the American financial system and create a foundation for financial regulation and supervision that is simpler and more efficient, while protecting consumers and investors. The reform of the financial regulation seeks to achieve five objectives: (1) introduce stricter supervision and regulation of financial firms; (2) to establish a comprehensive supervision of financial markets; (3) to protect consumers and investors from financial abuse; (4) provide the Government with the necessary tools for managing financial crises; and (5) to raise international regulatory standards and improve international cooperation. With regard to communications of public company with investors, this reform underlines the importance of reporting on the risks and the risk management in the society.

In public company communications with investors, it is important to emphasize that it is often burdened by short-term requirements from the financial markets, in particular, in case markets which are overheated or, on the other hand, cooled down. One should look for the company's operation goal in long-term stocks value maximization in the market. In a long run, it is important, as much for the company's stability in generating new values, as it is for the threat to realize suboptimal result for stockholders by focusing on short run and cyclical effects [24]. This problem is associated with the problem of rewarding managers, as well as the whole corporate governance system that should emphasize long-term goals of public companies. It is necessary to emphasize the need to intensively focus on the company's communication with its long-run operations.

4. Accounting

Accounting is the most comprehensive and the best record of a company, encompassing various aspects of its business and, as such, serves as the basis for the preparation of financial statements. It can be defined in many different ways. Most definitions highlight bookkeeping as essential component of accounting. In this chapter, we define accounting as the art of communicating financial information of a business entity to the users of that information [27]. This communication takes a form of statements. Mathematical aspects of bookkeeping allow us to treat accounting as a field of mathematics [28]. Furthermore, accounting has to be viewed as an important part of corporate governance, because it is the starting point of company's communication with investor's public. We can distinguish three stages of accounting: bookkeeping, accounting statements, and auditing.

4.1. Bookkeeping

Even though it is not the only element of accounting, bookkeeping is the corner stone of the accounting [29]. It is the most comprehensive and detailed economic record of the company and therefore, every business event that is the subject of that evidence must be recorded properly through bookkeeping. Although bookkeeping practice changed throughout the course of history, today, the way we think about it is based on the paradigm of dual-sided bookkeeping. The double-sided entry of business events, which are also the subject of bookkeeping, admired the great writer [30], who declared it as one of the most beautiful inventions of mankind. The magic attraction of bookkeeping provides a system of equations which keeps track of the business enterprise that is, in its implicit form, manifested through eternal equality between the assets and the liabilities. On the other hand, in its explicit form, it demonstrates the interest of the owner in the company, evaluated, of course, from the book value perspective.

Throughout the history of a company, bookkeeping takes continuous snapshot of the state of affairs and operations. When put together, these snapshots animate the history of the company. In that sense, the images of this history present the means for public company communication with investor's public. In this way, the history becomes the baseline for predicting the future, in the extent that it relates business data as a result of business events which are the subject of bookkeeping records. The documentary nature of the bookkeeping notes reduces the possibility of legal manipulation in an effort to make it more appealing to investors, by using the two-sided bookkeeping technique, and through it, it allows easier detection of irregularities. Of course, this applies only to those who are familiar with the bookkeeping math assumptions and canons.

The documentary nature and ability of data checking based on it, in the base has a premise, that is, the double-sided entry values are estimated on the basis of the occurrence of a business event. Thus, bookkeeping is the base for judging quantity and, in part, quality of the company's economy. For a public company, as the most demanding form of business organization, it arises as the basis of the company communication with investor's public.

4.2. Accounting statements

To be able to communicate with different information users about the affairs and business of the company, bookkeeping data need to be presented in a particular shape that is formatted like standard information. On the mathematical basis of bookkeeping, this standard information is provided in the form of accounting statements. The largest number of such statements should be prepared constantly to run all business operations. This makes public company managers on all executive levels who supervise operations, and employees who execute tasks, their basic users. Based on the mathematics principals, bookkeeping and accounting derivatives have become a standard business language for communication with business people, financial experts, and economists, in general. Therefore, accounting statements are an integral part of any organized businesses.

Users of accounting information are the owners of the company, individuals, or a particular group of individuals. In the conditions of separation of entrepreneurial from ownership functions, especially in the conditions when the company becomes public, bookkeeping and the accounting statements based on it, become the basis of communication of public companies with a wide range of existing and potential owners. In this way, bookkeeping and accounting statements become an integral part of corporate management. Statements are subject to standardization and have a responsibility to the public; so, in a certain sense, one can talk about public accounting and public accountants.

Sole creation of accounting statements assumes one acquires the art of classifications and summary of bookkeeping data. This makes the data significant, relevant, and informative to the users enabling them to interpret it with a generally accepted business language [31]. The accounting statements which will communicate the bookkeeping information with the investor's public are those that summarize the entire business of the company: the balance sheet as well as the profit and loss statement. By expanding the requirements for communication and through modern systems of financial reporting, cash flow statements are becoming ever more common form of communication. These accounting statements are used to communicate with the investor's public through ranked statements of changes in financial positions.

Accounting statements are certainly an important part of corporate governance. They are the corner stone of public company communication with all stakeholders that have a direct interest in the company, as well as with potential stakeholders. This includes all those individuals and institutions who may find interest in that company through the mechanism of the financial markets. The corporate governance should focus on supporting to achieve the basic objectives of the company operations, which, for a public company is shown by increasing its common stock value in a long run. For corporate management, this is the most significant of those accounting statements, since through it they ensure continuous public company communication with its investor public over financial reporting mechanism. These are, therefore, the balance sheet and profit and loss account, and cash flow statement.

4.3. Auditing

We mentioned earlier that public company communication with investors' public on financial markets is, among other things, a means of attracting money and capital. In other words,

communications of a public company by disclosing data concerning realized and expected business through public announcements on the financial markets are also a means to attracting investors in the company. Speaking from a completely theoretical perspective, only an objective disclosure of data and information about the existing and the expected operations of the society ensures uninterrupted external financing of the company.

In the competitive real world surroundings, public companies struggle to attract as much capital under as favorable conditions as possible by communicating with the public. For a public company, the communication thus becomes the means for a competitive struggle in the money and capital markets. Therefore, it is logical to expect that the company will endeavor to send tampered reports to the public in order to paint a more attractive image of the company. With such an image, the company stands a better chance at raising money and capital on the relevant financial markets. Therefore, the distrust from the investment public toward the information is distributed from within the public company.

Due to the existence of distrust toward the publicly posted information and data that the company communicates with the investor's public about itself, the third component of public company accounting is auditing. Auditing, of course, applies only to that part of the communication that is based on the bookkeeping evidence and encompasses accounting statements. The audit should provide the legitimacy of accounting reports that will be published in the financial statements. It helps to inform the public investor more correctly; however, it is constrained with the basic formats of accounting statements as well as the logic of the business success of the companies that perform the audit. The wider the basis for the valuation of items in the financial statements and the more it is possible to endeavor in creative accounting, the more it is expected that the data will be more improved, or even worsen, depending on the need. The success of the companies performing audit depends on their fees. Furthermore, the company is represented by the management which has personal interest in painting a better picture of the company for their own reward [23]. Regardless of the fact that the company performing audit must seek to perform it *lege artis*, it is difficult to expect that it will not reach to a compromise agreement with the public company or its management in order to survive in the market, and in turn agree to lower the bar in some respects.

5. Communication in financial statements

Financial reporting is certainly one of the most important and the most intriguing area of finance standardization. For financial analysis, it is the basic analytical framework based on which it is possible to isolate and determine the underlying fundamental value factors of public companies and their stocks, as well as other instruments of financing. An important part of the financial reporting is the accounting of public companies. However, financial reporting as a whole goes beyond the scope of accounting. Financial supervision and various local practices significantly impact the content and the scope of financial reporting. As a means of communication with the investors, public company financial reporting is strongly influenced by the problem of agents in the conditions of asymmetry of information.

5.1. Contents of financial reporting

Originally, financial reporting is a standard practice of public company communications with his investor's public. The existing and potential investors invest in stocks, bonds, and other financing instruments a public company offers to the entire public. These instruments are marketable financial assets and are classified, in general, as securities on an active market. They can be considered as consumer goods, i.e., financial assets intended for a wide circle of investors. In this way, the financial reporting becomes a standardized means of communicating the value of a public company and the values of its individual financing instruments, and therefore determines the contents of financial reporting.

Financial reporting is exclusively inherent to public companies which, as a legal entity, function both as investors and investments. Stocks have a central place in this dual nature of public companies that have been created as marketable financial assets, and at the same time represent ideal claims to real assets, or to real investments of the public company in business projects. Stockholders can also have dual roles in the public company. They are also the owners of that company and its real assets, but at the same time, they are investors in the company stocks, and therefore, investors in financial assets [24]. Regardless of the stakeholder's role in the company, their goal is to achieve greater wealth and higher value by conducting financial analysis on underlying financial reporting.

The essence of finance is contained in evaluation and management of value. The value is perceived in the context of economic value which is the result of interdependence of risk and reward. In this way, the financial reporting content comes down to communicating with the investors not only about the expected earning power of the company and the expected yields on its stocks, but also about the risks of achieving the expected results. So that the expectations would not be built solely on promises, financial statements must contain data and information based on which the investors will be able to objectify the expected earning power and the expected stock yields of public companies. Therefore, financial reporting must contain information about the achieved business results of public companies and the risks to which it is exposed. Based on the achieved business results, investors will form expectations about the businesses ability to earn (reward), and according to the determined risk, they will establish appropriate cost of the capital, discount the expected results, and evaluate stocks, as well as other instruments of the public society.

A public company as well as other forms of business use debt to finance their operation. Money lender can also be treated as company investors. This is particularly true for large money lenders of public companies who monetize it by investing in bonds and other fixed income securities of these companies. When borrowing is observed through the scope of a public bond issue that will have an active market, lenders are no longer just the institutional lenders, such as commercial banks, but also the institutional investors, so that the contents of financial reporting must extend to the needs of such investors for the value evaluation and management. They are interested in the public company's business results, but much more in the risks involving their position in the unfortunate event of the company's fall before they return the borrowed money, because they do not have mechanisms to reduce asymmetries of information embedded in direct financial relationships between commercial banks and enterprises, as users of their loan [32].

5.2. Accounting and financial reporting

Accounting is inherent to all companies, small and big, private or state, public or private holding company. With all its flaws, accounting remains the best and therefore completely unavoidable part of the overall business statistics. Financial reporting is, on the other hand, different. Originally, it was intended only for the public companies which, in order to obtain the capital, have to communicate with investors. It is, therefore, inherent only to public company and basically unnecessary to all other forms of businesses. This does not mean that there is no need for data and information from other forms of businesses and privately owned companies. Without a doubt, there is a need to control the business and financial flows and to determine the proper tax base. Also, the law requires accounting in order to prevent fraud. Finally, it is an irreplaceable instrument of business people, managers, business and professional associations and chambers for account aggregation and mutual comparisons. In general, it is a necessary product of the existence of business statistics. Even though all these actions could be conducted using standard accounting, however it is rather illogical from the public reporting point of view. Specific reports and documents can be used for special purposes. For instance, tax reports are used to declare tax. During the investigation, the court will analyze various, if not all documentation coming from the company, and a statistician will do the same. All these data are given in a much less complicated form than the financial statements needed by the investor.

Because of the aforementioned characteristics of accounting, primarily because it is the best approach to business statistics, but also because of its ability to document, and in turn track the sequence of individual operations, it is logical that it is the basis for the preparation of financial statements. Therefore, aggregate accounting statements are an integral part of the financial statements. In accordance with the documentary nature, and the objectivity of accounting at the time of a documented business event, these accounts should be formulated on the principle of a historical value. To ensure the financial statements are complete and exhaustive, it is necessary to include the most important risks involving future business events together with these data concerning past operations and financial position of the company. This is due to the fact that investors buy stocks and other instruments of financing of the company on the basis of expected results, and not on the basis of the achieved results.

Today's practice of financial reporting is strongly influenced by various interest groups and various entities of the financial markets. One of the most significant impacts on the practice of reporting arises from the regulatory bodies and financial supervision. No matter what the role of the market regulator in protecting investors is, the preservation of the stability of the financial system is often imposed as the first objective of regulation and financial supervision. Because of the control of financial institutions, their financial placements and investments, financial supervision has imposed the principle where statements of financial assets are derived at the current fair market prices. In order to maintain the consistency of the report, this principle has spread on all real property sections of the financial statements.

5.3. Fair vs. historical value

Efforts on financial reporting standardization and harmonization aim to solve a series of controversy of the different basis and practice of reporting. This standardization solved the

dilemma of reporting on either cash or on the accrual basis in favor of the accrual approach. Even though this implied replacing the relatively straightforward approach with the complexities of the philosophy of the recurring profit measurement, this approach was almost unanimously decided between the creators of the standardization of the financial reporting, regulators and supervisors. In order to unify the profit reports, the community seeks to standardize certain methods of calculation, and since it is not possible to ascribe to any universal benefits in all possible circumstances, the application of different methods is allowed, which has to be clarified in the notes on financial statements.

Contemporary circumstance replaced a previous dilemma with the dilemma between the historical and fair price, at which the items will be evaluated in the financial statements. In practice, however, the applications of the combination of these two fundamental approaches to evaluation, as well as frequent changes to financial reporting standards are present. In this sense, one can conclude that in modern conditions, high complexity and variability of regulatory financial reporting basics are present [23]. This practice, of course, implies the need for a trained eye to interpret the presented information of a public company's business operations and other fundamental factors of stock and other financing instruments value.

Traditionally, accounting has been using historical prices to evaluate all items. They were the basis for accounting statements which, together with bookkeeping, enable one to more easily control and revise the financial transactions due to objectivity. Each of these reports reflects the realized prices and values at the time of a transaction and could be verified through a document under which it entered in the bookkeeping evidence. This characteristic of accounting is the key quality that ensured that it is so often used to indicate the status of a business, and the financial health of the company [29]. The problems of the complexity in the philosophy of profit stem from the accounting's orientation to the accrued basis.

Historical price can become questionable the more its booked positions are longer present in the evidence. For non-financial companies this will be reflected on the value of the fixed asset, although these values can be further provoked with the mechanism of calculating accounting depreciation. Financial companies use much more marketable assets whose prices change frequently in the financial markets. It is particularly emphasized at the open-and investment funds, for which the custody bank must daily establish the net asset value (NAV) at which the fund should redeem units from its members. Because the supervision focuses on financial relations and financial institution's supervision, as an active participant in the standardization of financial reporting, it is imposing a fair value for the valuation of items in these reports. This way, the financial statements incorporated additional subjectivity and other problems related to the evaluation.

In principle, there is nothing wrong with the commitment on a fair market value as the basis of valuation of items in the financial statements. The fair market value must include the risks on holding and managing the public company assets, as well as how they are perceived by the investors in the market. This then means that it is enough to present the balance sheet and profit and loss account, as well as complementary aggregate statement on the principle of the fair market value. The problem arises when one needs to determine the fair market value. There is nothing absolute in it, so it is not objective, which makes the assessment based

on finding the fair market value come down to the problem of estimation. All estimates are subjective, and they are the targets. Because estimates are made by those who use the financial statements to attract the investors, it is clear that this presents a problem. Such a decision can make the presentation of the aggregate account the result of creative accounting manipulation.

5.4. Disadvantages of fair value

Previous discussion demonstrated that the market value of firm's assets is equal to the present value of free cash flows from firm's operation and market value of firm's financing instruments only in the conditions of perfect or extremely efficient capital market in equilibrium. Therefore, fair value concept is primarily oriented toward current market prices and it is straightforward to expect that the prices oscillate around real intrinsic value. In addition, fair value concept is targeted and burdened by subjectivity. Furthermore, accounting value of assets is focused on tangible assets rather than intangibles which are rarely the subject of bookkeeping evidence. There is no doubt that is necessary that the public company communicates information concerning intangibles with investor's public, [33, 34], but this communication is different from financial reporting.

Owners' equity can be recognized as a solution to the balance sheet equitation which makes it easy to observe the connection between the recorded and the market value of the stocks. Once the capital is acquired (paid-in capital), its recorded value of stocks increase as the earnings are retained. Earnings are retained so that the company can make profitable investments. This will increase the company's earnings directly from investment operation. Retaining these additional earnings will increase the value of stocks. Capital market is always observing the business operation and investments made by the company. As soon as the market recognizes a profitable investment, their present value will be incorporated in the stock price before it increases earnings from profitable effectuation of the investment. Due to the time it takes the investment firms to boost their recorded values, the values themselves will fall behind the market values so that they can serve as an indicator of the stock price, but at the same time, cannot reflect their fair value.

Another problem of book value for evaluating stocks stems from the residual position of the owner equity in the balance sheet. Starting from the balance sheet equitation it is evident that the owner equity is a variable that depends on two factors: assets value and liabilities value. In this way, the value of the ownership equity depends on the mode in which the positions of assets and debts are evaluated in the balance sheet. In principle, there are two approaches to valuation of the position in the balance: on the concept of historical cost and on the concept of fair value. Today's balance sheet shall be drawn up according to a model that combines these two approaches. This has a dual effect on the value of the ownership equity.

- On one hand, evaluation on historical cost will fall behind the fair value, especially for assets that are present longer in the company operations, because its recorded value is burdened with the passed time and the corrections that only coincidentally match the loss of economic value due to the expiration of the asset lifetime.

- On the other hand, fair value contains subjectivity in its estimate, because most often there is no possibility to objectively estimate fair market value. Moreover, this estimate is burdened with the subjective views of the reporting manager, Chief Executive Director who represents the company, and the executive management. For them, financial statements are the means for attracting investors as suppliers of capital, so it is logical that the presented statements suffer, in some extent, from creative accounting.

Apart from the fact that the book value will lag behind the market value, it may not reflect other market views according to the unique property which the analyzed company utilizes in its operations [14]. Book value also does not reflect the views of the unique and total earning power of the company or the earning power of specific segments of the overall operations of the company. Throughout the history of the capital market, it has been proven time and time again that the market favors activity from which it expects rapid growth and the benefits of using new technologies. Here we indicate only some of the problems that impair the ability to use the book value as a substitute for the fair market value of the stocks:

- Failed company. Over-indebtedness of the company which has not filed bankruptcy because its debts are not yet due can have an added value with respect to the recorded value. This is due to the effects of agents making high-risk investments, or the distribution of earnings to the owners, etc. It is about taking full advantage of the optional value of unlimited liability as a put option on the value of the property contained in the equity of the indebted enterprises [35].
- Positive assessment of efforts in R&D from the market. Although it is difficult to recognize the true net present value of an investment in the research and development, market can pay a premium on option for a company which is assessed as innovative in a particular industry expecting positive cash flows from exploitation of the results of R&D in the future, or the added value of patents and licenses resulting from this research [36].
- Positive assessment of the company's additional future investment opportunities due to the undertaken investment in technology changes, production processes, the introduction of new products, and the entry into new markets [37].
- Market assessment of the impact of acquired subventions or guarantees from the State or local community [38].
- Market assessments of several externality effects as well as externalities which occur between the company and its investment opportunities, etc.

5.5. Earnings management

Earnings management, creative accounting, or window dressing are euphemisms that talk about using the allowed methods and procedures of financial reporting, which certainly do not reflect the spirit of fair reporting. Earnings management aims to paint a more favorable (or unfavorable) image of a company in the presented financial reports. Even though it is not illegal, earnings management is highly nonethical, especially when it is made to create the greater basis for management compensations.

Financial statements are the means of communication with the public company's investor's public. They are also the means of attracting investors, and serve as a sort of advertising material which the company gradually creates for its capital "suppliers." Certainly, the power of this promotive sheet stems from the creation of the economically eligible earnings through an extended period of time. Also the creation of economically eligible earnings is a prerequisite for preserving the independence of the company, and the defense against hostile takeovers. One could compare the company's financial statements with a person's CV. In the curriculum vitae, as well as in the financial statements, individuals will strive to present the facts in a way which helps them accomplish the expected results.

No doubt that the financial reporting standardization and harmonization increase the quality of financial reporting worldwide. It is to be expected that this practice decreases the level of earnings management. Many countries with different tradition of financial reporting and investor's protection practice adopted International Financial Reporting Standards (IFRS). However, earnings management practices tend to be distinct for each country [39]. Furthermore, the application of IFRS does not guarantee the elimination of earnings management. IFRS ever more applies fair market value principles for judging aggregate accounts in financial statements which extend the subjectivity and target estimations. However, it is possible to achieve the same effect through historical price estimates.

All estimates of the market value have a subjective nature. When they are performed for public presentation, these estimates are also targeted. The fear of loss of capital suppliers, or the fear of falling stock prices caused by dissatisfied stockholders and which might attract hostile actions toward the company management, are the reasons enough for the management to reach for little creativity in its estimates. Even more logical is that the person who wants to paint a good picture of him or herself to the public, sees himself in a fairer light, rather than see through the eyes of independent objective observer. Does it not seem illogical that the investors, who should create their estimates on the basis of published reports, receive estimates from those who seek money from these investors?

Earnings management is partly limited with the necessity for financial statements auditing which reinforces their legitimacy. Auditing is a strong tool for agency cost reduction. However, auditing has its limitations as well. Partly these limitations come from difficulties in the possibility of eliminating the subjectivity from the estimated financial statement items. The second limitation is related to the fact that an audit is performed for the needs of shareholders and the investor's public in order to objectify published data in the financial statements. The fact is, however, that the auditors are hired and paid by the company's management board, which the audit should control.

The practice of targeted evaluation regarding the prices manipulation and fraud related to financial reporting is more intense in conditions of the overheated financial markets, when things are going well and control mechanisms are relaxed, rather than after the fall, when all the market participants "are cold" and scarred. Therefore, the history of the financial markets can be observed through various forms of manipulation and fraud, and the efforts in regulations to minimize or even avoid them completely. The results of regulatory efforts are additional creativity, new procedures, and methods of manipulation and fraud. More significant cuts and changes to the regulations are performed normally after the collapse, as was the case

with millennial collapse and the efforts of regulatory bodies and States to rectify the situation for the future. Of course, such a regulation causes additional costs of corporate governance for public companies. It has, of course, happened and with the already mentioned SOX [40–42].

The practice of financial reporting is under the influence of financial supervision and obtains the stability of the financial system primarily oriented to the protection of creditors, not the investors and their need for fundamental analysis. The stand point of the possibilities of manipulation and the missing tools against them that have investors toward financial supervision and its direct control subjects, and the standpoint of the implementation of the fundamental analysis of the orientation toward the fair market value seem illogical. Presentation of the aggregate account with estimated entries on the undisputed documented historic value together with the practice of publication of the risk which is exposed to the operations of the public company seems more logical for the purposes of the valuation of the company as investments, or for the purposes of the valuation of its common stock. Starting from the previous practice, it is possible that the financial statements contain a set of aggregate accounts estimated at fair market value and documented historic value together with a report about the risks.

5.6. Management compensation

The practice of rewarding the management of companies on the basis of the achieved business results has additional forces to earnings management. In this way, the company managements are double motivated for publishing the good business results; once for securing capital provider and second time for personal gain made through shares in the profits and protection from risk of takeover and loss of its position in company.

Manager's reward system is certainly one of the key controversies in modern public companies. One of the recommendations for the investment of the famous Warren Buffett is to buy shares of companies that are run by the fair management. Fair management is one who does not take excessive fees for their work, especially the options on the stocks of the company which they run [43]. With this, Buffet has directly linked to Graham [24], who is also against management compensation in stock options. In addition, here, EFFAS [44] recommendation is: *Remuneration systems should be based on the sustainable, long term development of a company. Extremely high remuneration packages (including base salary, bonus, and stock options) should not occur, since they will not be based upon any realistic underlying business trend. If this is the case, management assumes neither responsibility nor risk. People who are excessively highly remunerated will not necessarily be interested in the long lasting success of their company.*

The significance of the problem of rewarding managers illustrates this EFFAS [44] recommendation about paid out dividends vs. paid out bonuses: *This is a crucial and short-term orientated issue. Investment banks, or universal banks in which investment banking is a very significant component, have been paying out overall bonuses in amounts that are similar in size to the overall annual dividend. This practice should be ceased, because shareholders have the right to receive an appropriate dividend payout that is directly related to the overall net profit of a company.* In addition, problem is that this reward, in fact, grants management to itself rather than stockholders. Furthermore,

managers have the possibility to reinforce yield on options in short term due to asymmetries of information. In addition, dividend payments vs. retention of earnings in the public company represent means of reducing the problem of agents and the potential costs of the agents. That being said, the payout of the bonus becomes direct cost of agents, which does not make sense from the standpoint of motivation and management monitoring.

6. Communication on risk

Financial statements are determined as accounting reports on realized earnings power and financial potential. Based on them, one can make judgments about the expected earning power, as well as about the presentation of the risks associated with them. Financial statements presented on the fair market value basis implicitly include risks, but they do not eliminate the need for risk reporting.

6.1. Risk contained in fair value

Risk is implicitly included in fair market value, because market prices oscillate around assets' intrinsic value, and that is established as present values of expected cash flows discounted by risk-adjusted discount rate. However, this does not mean it satisfies the needs of reporting about the risks of a company's earning power. It is just the opposite.

First, the fair market value can be determined relatively easily for a very small number of company assets, and it is possible to provoke if so the determined values are truly fair. This means that for the majority of assets, it is all about the estimated value instead of the fair market value. Furthermore, it is a subjective assessment made by the company's management as an agent of stockholders and future company equity suppliers Rational investors with risk aversion could not make unbiased decisions based on that information, regardless of what behaviorists thought about them [45].

Second, due to the assessment subjectivity and its burdens of potential conflict of interests between management and stockholders, such assessments are targeted and subjected to manipulation significantly more than this was thought possible based on historic values. These extremely biased information that are based on management's estimates, should serve the investors for their assessment.

Third, only on the perfect market is the value of the company assets equal to the value of its liabilities and equity, and these assets are valued fairly only in conditions of the market equilibrium. Presentation of the assets' fair market value in financial reports does not include a majority of intangibility. It is presented as the sum of the estimated value of the individual, mostly tangible, assets, rather than its value as a whole. Namely, the company's earning power depends not only on the assets which it holds, but also on how those assets are used. The ability to use assets could be judged by observing how it is used in business projects. This means that the earning power is committed by the company's business portfolio, so the value of the business portfolio should match the value of the liabilities and equity, with included

adjustments for additional financial risk. When you include the business portfolio approach in the values analysis, the group of companies and the need for group reporting further complicates the valuation.

Fourth, and also connected with the previous, the assets' fair value implicitly includes the risks of keeping the individual forms of assets. In no way does it include business risks that are connected with the way of combining these assets and using them in the company operations. Thus, it is evident that reporting based on a fair value is not intrinsically connected with risks of expected earning power of the company, and thus, it provides insufficient information about the risks for the investors in the company owners' equity. The risks included in the assets' fair value are not essential for equity investors, but for creditors, and especially for commercial banks that modify its internal credit ratings and so reduce the asymmetry of information in relation to other investors.

6.2. Risk management

Risk and yield are key value components. Value is realized by risk-reward trade-off during specific time. In the context of economic value, risks determine risk-adjusted discount rate for discounting expected yields, expressed by cash flows. According to modern portfolio theory, the only relevant is systematic or market risk, meaning the risk that could not be avoided by diversification [46, 47]. These assumptions are built into the CAPM [48] as still the most popular model for establishing risk-adjusted discount rate.

The risk of achieving expected cash flows is one of the key value components. It is therefore logical that risk management is one of the areas of value management and a means of achieving greater value. Primarily, this is the management of financial risks, and therefore diversification imposes as a means of reducing risk. Diversification helps avoid a significant part of the total risk, the specific part, based on the principle "don't keep all eggs in the same basket." Diversification is basis for financial investments portfolio management. Although the diversification scope of the real investment is limited, diversification can also reduce the risk of keeping such investments. Thus, regardless of the controversy should the company diversify its activities or not, today, it is difficult to find a mono product company.

The increased importance of risk management outside the diversification area appeared at the beginning of 1970s, when, due to leaving the Breton Woods Agreements and the oil shock, significant currency and interest rate risks have emerged. At the same time financial futures contracts, financial options, and other financial derivatives appeared, as the powerful tools to reduce, and even eliminate these risks [49]. The most intense managing of such specific financial risks was in the banks and financial institutions, partially due to the fact that these companies employed most highly educated and well-trained financial analysts, and partly under the influence of financial supervision [50]. Specific risks managing practice transferred to non-financial companies, so that it has become an integral part of the corporate governance [51].

In modern conditions, risks management becomes an organized activity. Financial institutions are encouraged by financial supervision. Other public companies also require organized

risk management rather than managing only specific risks. In the US, the before-mentioned financial regulation reform foresees reporting on risk management, which implicitly requires organization of these efforts.

Risk reporting and accounting reports are identified as an integral part of the financial statements presented to the public companies stockholders and equity investors of these companies. In this context, setting requirements for this reporting by those who have an impact on the reporting practice are an important step and challenge for the improvement of financial reporting and communication between public company and existing and potential investors in ownership equity. It would not be a good to identify risks reporting, as an integral part of the financial reporting, with drawing up of the accounting reports, as has been the case until now, because communication with the public exceeds the accounting responsibility and activity. Also, it would not be a good thing to reduce risks reporting on the reporting of risk management, which is today's financial supervision request from financial institutions, because it is again reporting evaluated by those who send specific picture to the investors' public.

7. Conclusion

Although the financial function is one of the fundamental functions of every company, Chief Financial Officer (CFO), as stated in this analysis, is needed only for the public companies. He or she is a member of the company's Board whose key task is permanent communication with the investor's public. In that sense, he is the procurator of the Chief Executive Officer (CEO) in the area of mediation between the needs of the company for the money and capital and investor's public. CFO is also responsible for other financial operations: treasurer and controller of the business. Thus, CFO is the most responsible person for the financial statement presentation, as the CEO Deputy, who bears the ultimate responsibility running the business. An accountant may only be responsible for the preparation and the presentation of accounting statements. Because accounting statements are the basis for the financial statements preparation, the responsibility of the accountant is internal, toward the CFO and the Board, and not external, toward the investor's public. Financial officer is not required in private companies because the integrity of the communication for them is an unnecessary and an expensive activity. These companies report for tax purposes and some wider control requirements of the State.

Based on the analysis of the practices and institutional framework of the company's communication with the investor's public, in the context of the totality of corporate management, a special attention is paid to the communication through financial reporting, as it is today commonly observed in the standard set of financial statements, which are indeed accounting statements presented with the combination of historical and fair market prices. The chapter determinates that this reporting practice is not oriented toward investors in public company equities, because this practice enables sufficient insight in the expected earnings power and the risks to achieve it. In that context, a request is set that the correct financial reporting

oriented to existing and prospective investors in the company equity, must contain a sufficient objectivized description of the reached earnings power and financial potential in accounting reports to establish the expected earnings power and risks to achieve it, in order to establish the appropriate discount rate.

Today's financial reporting is institutionally complex because of mixed evaluation bases, historical and fair market value. Standards constantly change, most commonly by broadening the evaluation toward fair market value. This reporting is oriented toward the evaluation of fair market value of assets that the company owns rather than the evaluation oriented to company earnings power that is in the focus of equity investors. Thus, this reporting is oriented to landers. Assets fair market value orientation is not comprehensive, because it commonly excludes externalities, uniqueness of assets combining and intangibles from evaluation. Therefore, it is oriented to lenders showing tangible assets value as company debts collateral. The fair value of assets lags behind earnings power valuation, at least because the evaluation of earnings retained as investment potential are recognized by the market through the net present value of expected investments. Also, fair value is targeted and burdened with subjectivity and evaluation toward painting a picture that will attract investors as the suppliers of company capital.

The chapter develops literature review around the quality of company communications and its potential impact on firm value and firm valuation. It is also primary oriented on financial reporting as the analytical framework for fundamental analysis of the company and its common stocks. Thus, review is limited on this main form of communication. Therefore, it is interesting to investigate the impact of other form of firm communications with investor's public on equity valuation. Another interesting area of investigation is the possibility of impact of fair market principles on earnings management. According to the goals of the chapter, there are many possibilities for further investigation in secondary and primary data, to determine factors that can improve financial reporting and other form of communication with equity investors, particularly about the risk exposure of the firm.

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