

# **Can Pension Funds as Institutional Investors Affect the Cost of Bank Debt of Public Firms? Evidence from an Emerging Economy.**

**Abstract:** This paper studies the influence of Pension Fund Managers (AFPs), as institutional investors, on the cost of bank debt of Chilean firms. These investors may influence capital structure decisions, by monitoring firms' managers and transferring useful information to the capital markets. We perform our analysis based on hand-collected data for a sample of 109 Chilean public companies in the period 2009-2011. AFPs participate in the capital markets, in general and in the firm particularly, not only as shareholders but also as bondholders. Our results therefore explain how AFPs could influence firms' capital structure decisions. We find a positive relation between the participation of AFPs in the ownership structure of the firm and the cost of bank debt. The AFPs prefer companies to issue public debt instead of private debt in order to reduce the asymmetries of information and improve internal governance.

**Keywords:** Institutional investor, Pension fund managers, Cost of Bank debt.

**Track: Corporate Finance**

## **1. Introduction**

Firms in emerging markets still face some lack of access to credit (Campello and Larrain 2015). In fact, the traditional assumption by developed markets that large firms can borrow as much as they want may not necessarily be valid in emerging markets, where firms need to provide collateral quality and incur informational costs in order to access private and public debt markets.

Therefore, we evaluate the incidence of external institutional investor involvement on firms' cost of debt. Specifically, we focus on a particular external institutional investor in the Chilean context, the Administradoras de Fondos de Pensión (AFPs).

At the beginning of the 80s, Chilean regulators developed an important reform to the pension system, going from a public system to a private system. After that, the AFPs became the managers of the funds capitalized through the individual contribution system which involves the entire Chilean workforce. These special institutional investors invest in different financial assets on behalf of the workforce (e.g. shares, corporate bonds, government bonds, among others) both locally and overseas. In this context, the AFPs have become sophisticated investors who spend resources and time supervising and assessing firms' decisions on quality, their governance, and their ethics in business.

One of the major contributions of the pension fund reform was the improvement in the corporate governance practices of firms in which the AFPs invest, enhancing both the quantity and the quality of company information in the capital markets (Lefort and González 2008; Walker and Lefort 2002). This happens because the Chilean government, via its executive and legislative powers, recognizes the significance and relevance of this kind of investor, and all of this is supported by the fact that these private entities manage the future pensions of the Chilean work force. Subsequently, a number of legal reforms that protect the interests of minority investors, including the AFPs, have been passed. Some of these reforms have arisen naturally as part of the normal evolution of the financial markets; whilst others have been enacted as a reaction to renowned failures in business ethics and governance in the local markets<sup>1</sup>. Therefore, the role of the AFPs could be considered critical to Chilean capital markets since they serve as both minority shareholders and as bondholders. They therefore have incentives to engage in supervisory activities in order to ensure value maximizing decisions.

This contribution to the governance of firms in the Chilean corporate sector has been translated into greater efficiency and quality of the capital markets, enhancing the firms' market value and reducing their cost of capital (Acuña and Iglesias 2001; Walker and Lefort 2002; Vittas 1996; Iglesias 1999-2000). Despite the financial development that has been remarked upon during the last decades in Chile, it remains far behind that observed in developed economies such as in the US or Europe. Nevertheless, it is the most financially sophisticated market of the South American region (La Porta et al. 1998; Beck et al. 2000; WEF 2009, 2012) and has better scores relative to its neighbor countries (WEF 2009, 2012).

The legal system is crucial to understand both the role played by institutional equity investors in non-financial firms and their impact on bank debt. La Porta et al. (1998) emphasize that the legal system determines the degree of protection of interest of both shareholders and creditors, which conditions the ownership structure of firms and the development of capital markets. Omran et al. (2008) state that ownership concentration is an endogenous response to poor legal protection of investors. Particularly, La Porta et al. (1998) confirm that the Anglo-Saxon legal systems protect more efficiently the interests of investors than the French civil-law legal systems. As a consequence of the weak protection of shareholders rights in Chile, a French civil-law country, highly concentrated ownership structures in hands of individual investors and/or holdings are observed in the corporate sector. This high concentration of ownership has also been the natural solution to some market imperfections. For instance, firms in Chile have generated pyramidal structures to take advantage of internal capital markets, as have other developing countries (Lefort and Walker 1999-2000; Buchuk et al. 2014; Khanna and Palepu 2000; Gillan and Starks 2003).

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<sup>1</sup> Among which there are the cases Chispas and Corfo-Inverlink, and more recently, the La Polar scandal.

This study is a pioneering work that empirically contrasts, through a governance approach, the impact on the cost of private debt as a consequence of AFPs' participation in the ownership of non-financial firms. From a theoretical point of view, the participation of AFPs in firms might have two different effects. On the one hand, as a consequence of the active role of these institutional investors in monitoring managers, banks creditors might charge lower interest rates in debt contracts (G. Roberts and Yuan 2010); whilst on the other hand, the AFPs might press those firms where they invest to issue public debt (e.g. corporate bonds and promissory notes) as a strategy to minimize the asymmetries of information with these markets. This fact might cause an increase in the relative cost of bank debt, as a consequence of a greater leverage through public debt.

This empirical analysis has been developed with a sample of 109 quoted Chilean firms comprising 315 observations for the 2009-2011 period, using a unique hand-collected database on the cost of bank debt and the participation of AFPs in both the firms' ownership structure and on the boards of directors. The main finding supports a positive relationship between the presence of pension funds (AFPs) in quoted firms and the cost of bank debt. This finding seems to support the idea that the AFPs, in their role of main institutional shareholders or bondholders, exert pressure on firms to issue public debt as a tool of information disclosure. Consequently, the higher stakes of AFPs in the ownership of firms are associated with higher costs of private debt, caused by the shift from private to public debt stimulated by actions taken by these institutional equity investors.

The findings in this study are relevant for four reasons. First, this is original research from Chile that studies the impact of ownership of these very relevant institutional investors, AFPs, on non-financial firms in the spread of bank debt. Second, and different from G. Roberts and Yuan (2010), which is perhaps the closest antecedent to our research, this study is focused on a single developing country belonging to the French civil-law legal system. Third, this study extends the previous empirical literature (G. Roberts and Yuan 2010; Gillan and Starks 2003) by considering the role of AFPs as shareholders as well as members of the board of directors. And finally, unlike most of the previous literature, this study is focused on the liability side of the balance sheet more than on the equity side. Particularly, our interest is on the analysis of the cost of private debt which, so far, has not been properly analyzed, much less for emerging economies. Consequently, under a governance approach, we intend to shed some light on this issue, contributing to the empirical literature on the role of institutional equity investors and their impact on the cost of private debt.

The rest of this paper is organized as follows. In the second section we develop the theoretical framework and the research hypotheses. Section three describes the methodology and source of information used in the empirical analysis. In the fourth section the main results are presented and discussed and finally, in section five, the paper concludes.

## **2. Theoretical Framework**

### **a. The Relevance of Institutional Investors**

Although most of the literature on institutional investors does not study directly the relationship between institutional equity investors and the cost of private debt, we can still glean certain hints which might be relevant for this particular study. For instance, according to Ferreira and Matos (2008a), the role played by institutional investors on corporate governance issues and their impact on firm value depends on the legal and institutional frameworks of the country –common-law versus civil-law system, among others–. Similarly, the recent work of Araya et al. (2015) studies the role of institutional equity investors as a governance system inside the firm in an emerging economy.

Bennett et al. (2003) suggest that institutional investors have different investment strategies and incentives in their corporate governance role. Bhattacharya and Graham (2009), Dong and Ozkan (2008), Brickley et al. (1988) and more recently Jara et al. (2012), classify institutional investors as pressure resistant and pressure sensitive. The first group is comprised of pension and mutual funds, which are characterized by a more independent position towards the firm; basically they just hold an investment relationship with the firm but not a business relationship. Therefore, the ultimate goal of these equity investors is to maximize the return on the funds they manage and protect the interest of those they represent. Since the performance of these investors is measured by the return on the portfolios they manage, they will be pushed toward active monitoring of the firm's executives in order to maximize the market value. These investors are characterized by having a long-term profile. The second group is comprised of banks and insurance companies, characterized by having a less independent position, because they hold both an investment and a business relationship within the firm. This relationship fosters a conflict of interest because it is more likely that these investors have private connections with the firm's management, hold strategic alliances with them, and even might be prone to vote according to the relationships they hold with management. As a consequence of this conflict, these investors might not play their governance role very efficiently and therefore might not properly assess the performance of the company. As a result, this relationship might impact negatively the performance of the firm and ultimately place upward pressure on the cost of debt. These investors are usually characterized by their short-term or transitory investment approach.

The empirical literature for countries with developed capital markets where firms have diluted ownership structures, suggests that institutional investors have a positive impact on the firm performance (McConnell and Servaes 1990; Ferreira and Matos 2008a; Elyasiani et al. 2010; Ruiz-Mallorquí and Santana-Martín 2011). Gillan and Starks (2003) state that when

ownership structure is diluted, there are not incentives for a single shareholder or group of minority shareholders to monitor the managers' behavior due to the high costs of involved monitoring. They suggest that as an external corporate governance system, minority shareholders such as institutional investors might monitor managers efficiently. According to Parrino et al. (2003), institutional investors *vote with their feet*, or in other words, they sell their shares when they are dissatisfied with management or when they disagree with some corporate actions –also called exit policy in terms of Bathala et al. (1994). Furthermore, Bethel et al. (1998) find evidence for the US market that when the institutional shareholder purchases a substantial block of shares, the market overvalues the stock price as a result of the monitoring role of these institutional investors. Additionally, Woidtke (2002) finds that private pension funds add more value to the firm than public pension funds. She argues that the actions of the latter are guided by social and political reasons rather than by the maximization of firm value as occurs with private funds. Finally, Hartzell and Starks (2003) and Borokhovich et al. (2006) suggest that the market perceives the monitoring better when it is done by pension funds with no commercial interests on the firms and where the funds have equity investments. All these findings are consistent with the role of institutional investors in mitigating the agency problems between shareholders and executives as well as in improving the performance of the firm (Lefort and Urzúa 2008).

Conversely, there are a number of studies which demonstrate the negative impact of institutional equity investors on corporate performance. Wahal (1996), Smith (1996), Duggal and Millar (1999), and Faccio and Lasfer (2000) show that when active institutional investors condition their investment policy to certain business practices, it impacts negatively on the firms' corporate governance practices. Additionally, Almazan et al. (2005) suggests that when investors hold commercial relationships with firms, it may affect their incentives and preferences to supervise corporate decisions efficiently.

#### **b. AFPs, Corporate Governance and Debt: The Chilean case**

As mentioned above, the impact that institutional investors might have on corporate decisions is determined by the development of capital markets and the legal protection of investors, amongst other external factors. It has been widely recognized that institutional investors' behavior has changed, from being passive investors to active monitors. For instance, Coffee (1991) suggests that the trend toward increased activism on the part of institutional investors can be explained by the fact that exercising voice has become less costly because of the significant equity ownership of institutions and the resulting

increased capacity for collective action. At the same time, following an exit policy has become increasingly more expensive because they must accept substantial discounts in order to liquidate their significant holding.

As a consequence of the weak protection of investors' interests, the ownership structure of firms in Chile is particularly concentrated and characterized by the presence of active majority shareholders in monitoring tasks (Lefort and González 2008).

Several empirical studies show a positive impact of the private pension system on the corporate governance of firms in the Chilean context (Walker and Lefort 2002; Iglesias 1999-2000; Lefort and Walker 2007a; Lefort and Urzúa 2008). Among other facts, the evidence suggests that pension reform is associated with a lower cost of capital as a consequence of less direct costs of debt issuance, a lower premium for term, and greater liquidity in the capital markets (Walker and Lefort 2002). Additionally, the reduction in cost of capital is explained by improvements in the governance system of firms where the AFPs have an active monitoring role. Lefort and Walker (2007b) and Lefort and Urzúa (2008) document for the Chilean case that the presence of pension funds as minority shareholders within the firm impacts positively its value, and consequently, negatively in its cost of capital.

Unlike other institutional equity investors, the AFPs have certain particularities that make them able to impact the efficiency of firms' governance mechanisms. First, the AFPs' actions are largely visible and are of great public interest. Thus, despite the fact that AFPs are minority shareholders, they have a greater capacity to deal with the potential opportunistic behavior of majority/controlling shareholders. Second, despite the fact that AFPs cannot intervene directly in firm management, the ultimate goal of the AFPs is the maximization of the portfolio's return they manage and the protection of the interests of their affiliates. Third, in illiquid capital markets such as in Chile, the AFPs cannot *vote with their feet* as short-term traders in other contexts do, which encourages the pension fund managers to both hold a long-term orientation in their investment profile and to build a relationship with the firm.

Although there is certain consensus about the positive impact of the AFPs on firms' governance; there is no general agreement in the evidence regarding their impact on the cost of bank debt. There is empirical evidence which supports a positive impact as well as a negative relationship by the pension fund managers on the cost of private debt. There are a couple of arguments supporting the negative relation which help us to derive what we call our monitoring hypothesis. The first one suggests that when executives are subject to a tight control by pensions funds, they will make better financial decisions which reduce the default risk and therefore, the cost of bank debt. Secondly, the bank monitoring costs should be lower in those firms largely participated by AFPs which eventually is translated into a lower cost of bank debt. Among other

roles, AFPs are efficient in improving the transparency and in monitoring efficiently the discretionary decisions made by the controlling shareholders (Araya et al. 2015), and particularly, in monitoring the opportunistic earnings of management (Chung et al. 2002a). Therefore, the quality of financial reporting improves with the subsequent decline in the cost of banking monitoring and the lending rates.

Although this paper analyses the impact of the AFPs as minority equity investors, we cannot dissociate the fact that they are at the same time the most important bondholders in the Chilean corporate sector. Therefore, it is necessary to contrast their role as a public creditor with that played by private creditors. This fact allows us to derive our crowding out hypothesis which suggests a negative relationship between the AFPs' equity investment and the cost of bank debt. In that sense, it is worth mentioning that banks are the main source of external funds of Chilean firms. The predominance of bank borrowing is explained by the immature capital markets *vis-à-vis* the weak enforcement of the law which protects the shareholders (Lefort and Walker 2002; Fernández 2005). This particular evolution of the financial system in Chile has resulted in a relatively better ability to protect the interests of financial intermediaries than public creditors (Jara and Sánchez 2012). In addition to that, private creditors are more specialized monitors because they have access to private information about the future prospects of firms; whilst public creditors –such as AFPs, must trust the publicly available information only (Krishnaswami and Subramaniam 1999). Therefore, it is observed that public creditors are in a disadvantageous position relative to private creditors. Accordingly, the AFPs in their role as the most important minority shareholders exercise their voting rights by supporting the issuance of public debt, rather than private debt, as a disciplining device. This incentive to issue public debt instead of private debt is rooted in the desire of the AFPs to reduce the informational gap with outsiders. Hence, as the equity stake of AFPs in the company increases, there will be a crowding out effect of private debt for public debt. Similarly, according to Bhojraj and Sengupta (2003), greater institutional ownership intertwined with stronger outside control of the board leads to lower bond yields and higher ratings on their new bond issues. Therefore, as the public debt level increases relative to private debt, the firm can no longer take advantage of the economies of scale on the cost of bank debt. As a result, these arguments show that the increasing presence of AFPs as shareholders of the firm impacts positively on the marginal cost of bank borrowing.

Therefore, the competing monitoring and the crowding out hypotheses to be tested empirically are as follow:

*H<sub>0</sub>: There is a negative impact on the cost of bank borrowing caused by the participation of AFPs in the firms' ownership structure as a consequence of their monitoring role.*

$H_1$ : There is a positive impact on the cost of bank borrowing caused by the participation of AFPs in the firms' ownership structure as a consequence of their desire for higher levels of public debt.

### 3. Sample, Data, and Methodology

#### a. Sample

The empirical analysis is performed with a sample of 109 non-financial firms quoted in the Santiago Stock Exchange (*Bolsa de Comercio de Santiago*) for the 2009-2011 period, which comprises a sample of 315 observations. The source of information is twofold. On the one hand, the financial information and information about the ownership structure in the hands of the majority shareholder was obtained from *Thomson One Data Base*. On the other hand, the information for the cost of private debt was collected manually and estimated from the individual firms' annual reports and by year. Similarly, the information about the AFPs' ownership participation in the firms was hand-collected from the Chilean Pensions Supervisor's annual report "Participación de las AFP y las AFC en Juntas y Asambleas" from 2009 to 2011.

#### b. Variables

The dependent variable is the marginal cost of bank debt ( $CBD$ ) which is measured as the average marginal interest rate of bank borrowing in a certain year weighted by the amount of bank debt issued. Additionally, in the robustness checks we used two other alternative dependent variables. On the one hand, we used the bank interest rate spread over the interbank interest rate ( $SPREADTII$ ), and on the other hand we used the natural logarithm of the difference between the cost of bank debt and the interest rate of 5 years Central Bank bonds issued in *Unidades de Fomento* (UF)<sup>2</sup> ( $LNCBSPREADUF5$ ).

The set of independent variables is compounded by the ownership participation of the AFPs ( $PAFP$ ) in the non-financial firms. This variable was computed by year as the number of shares which belong to the pension fund managers as a proportion of the total number of outstanding shares. We also used the dummy variable  $DIRAFP$  which takes the value 1 if the pension funds are represented in the board of directors, and 0 otherwise. According to law, a single AFP cannot hold more than 7% of the outstanding shares in the companies where it invests. Nevertheless, all the AFPs may invest in the same company, and since there are six AFPs in Chile, their joint participation may not exceed 42% of the firm's ownership. Such joint ownership allows the AFPs to coordinate the way they choose their representatives in the board of directors.

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<sup>2</sup> *Unidad de Fomento* (UF) is a unit of account that is used in most of the financial transactions in Chile. The exchange rate between the UF and the Chilean peso is constantly adjusted to inflation so that the value of the UF fluctuates in the same way as the Consumer Price Index. Since the price of most financial operations in Chile (e.g. mortgages, loans, Central Bank and government bonds, price of real assets, among others) are quoted in UFs, these prices are already adjusted by inflation in a daily basis.



Such coordination is handled through the *Asociación de AFPs*<sup>3</sup> in Chile. Consequently, as a blockholder, the AFPs choose the directors who represent them on the boards of the firms where they invest.

This is an essential variable since according to agency theory, institutional investors can have a direct influence on the firm's financial decisions (López et al. 2015).

Additionally, several control variables widely used in the empirical literature were included in the econometric models (Lin et al. 2011; G. Roberts and Yuan 2010). These control variables are related to the firm's characteristics such as firm size, leverage, growth opportunities, firm leverage and public debt, assets tangibility or collateral, the credit rating of long-term debt, and default risk, as well as dummy variables for the industry sector and time.

The size of the firm (*LNTA*) is measured as the natural logarithm of total assets. It is important to use a control variable for firm size since larger firms will be more willing to use less private debt when financing growth opportunities, basically because large firms can use alternative sources of external funds and take more advantage of economies of scale in issuing public debt. As such, firms can choose to use external financing which does not involve active monitoring (such as retained earnings); inexpensive debt (such as debt with related parties); debt whose cost can be minimized through economies of scale (such public debt); or debt whose cost can be arbitrated in international capital markets (such as Eurobonds) (Jara and Sánchez 2012).

The market to book ratio (*MTB*) is used as a proxy variable of growth opportunities. We control for this variable because theory suggests that firms with valuable growth opportunities are more prone to have problems of asymmetries of information. Therefore, it is expected that firms with more growth opportunities have a higher cost of bank debt. The firm leverage (*TDTA*) is measured as total debt over total assets. This variable is also used as a proxy of insolvency risk. Consequently, the higher the debt level, the higher the risk of the investment projects, and because of that a positive relationship between leverage and the cost of bank debt is expected. Public debt (*PDTD*) is defined as the proportion of public debt (corporate bonds and promissory notes) over the total interest-bearing debt. This variable was included in the analysis in order to record for the fact that those firms which issue public debt are usually firms with a sound reputation and widely known in the capital markets (Jara and Sánchez 2012). Therefore, a positive relationship should be expected between the public debt and the cost of bank debt.

Asset tangibility or collateral (*TANG*) is computed as net property, plant, and equipment over total assets (Rajan and Zingales 1995; Rajan and Winton 1995). The better the firm's capacity to offer collaterals to guarantee borrowed funds, the

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<sup>3</sup> Asociación gremial de Administradoras de Fondos de Pensiones, [www.aafp.cl](http://www.aafp.cl)

lower the expected default risk and borrowing bank interest rates. An alternative explanation for this relationship is provided by Lin et al. (2011). They suggest that those firms with more tangible assets may offer higher recovery values in default states, which may imply lower spreads on their loans, all else being equal. Thus, a negative relationship between the asset tangibility and the cost of bank debt can be expected.

The firm's credit rating (*INVGRADE*) was also considered in the analysis. This dummy variable takes the value of 1 when the rating agency rates the firm's long-term debt as BBB+ or superior, and zero otherwise. It means that the obligor has adequate capacity to meet its financial commitments (however, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitments). Therefore, a negative relationship between *INVGRADE* and the cost of bank debt can be expected. The default risk (*Z*) was measured through the Altman Z-Score. Finally, industry and time dummy variables were included as control variables in the econometric models.

### c. Methodology

The Heckman (1979) two-stage method was used in the empirical estimation of the relationship between participation of AFPs in the ownership structure of quoted firms and their cost of bank debt. This econometric technique is suitable for causal analysis and allows controlling for the endogeneity problem associated with the study of the impact of the ownership participation of pension funds on the cost of debt. This econometric problem may be caused for three different reasons. First, the double causality bias, because the AFPs' ownership might determine the cost of bank debt; and at the same time, the cost of bank debt might impact the AFPs' ownership. Second, the simultaneity bias which is produced when the AFPs' ownership as well as the cost of bank debt are determined simultaneously by the same factors. And finally, the sample selection bias.

Under this scenario, applying Ordinary Least Squared regression techniques lead to biased, inconsistent, and inefficient estimations of the parameters (Pindado and De La Torre 2011, 2006; Petersen 2009; M. R. Roberts and Whited 2013; Zhou et al. 2014). For these reasons, the Heckman two-stage method is applied. In the first stage, the selection equation is estimated from a probit model of maximum likelihood in order to study the propensity of the AFP to participate in non-financial Chilean firms. In this stage the reciprocal of the Mills ratio is also computed ( $\lambda_i$ ). In the second stage the corrected regression equation is estimated by the Ordinary Least Squared to analyze the effects of the participation of pension funds on the cost of bank debt.

Two conditions must be fulfilled in order to apply the Heckman method properly (Wooldridge 2002; Greene 2003). The first condition is that a significant variable must be identified as a regressor in the selection equation but not in the

regression equation. In other words, this variable must explain the reason why AFPs are willing to have ownership participation in quoted firms, but it does not explain the impact of the AFPs' equity participation on the cost of debt. This referred variable is a latent variable which takes the value of 1 if the AFPs have ownership participation in a firm, and 0 otherwise. The second condition is that the independent variables in the selection equation must be part of the regression equation. In other words, these independent variables must allow for explaining the dependent variables in these two equations.

The regression equation to test the impact of the AFPs' equity investment on the firms' cost of bank debt takes the following form:

$$\begin{aligned}
 CBD_{it} = & \alpha \\
 & + \beta_1 PAFP + \beta_2 LNNTA_{it} + \beta_3 MTB_{it} + \beta_4 TDTA_{it} + \beta_5 PDTD_{it} + \beta_6 TANG_{it} + \beta_7 INVGRADE_{it} + \beta_8 SPCGRADE_{it} + \\
 & \beta_9 Z_{it} + IndDummies + TimeDummies + \varepsilon_{it}
 \end{aligned} \tag{1}$$

Where  $CBD$  corresponds to the bank interest rates paid for the firms and  $PAFP$  represents the ownership participation of pension funds. The other control variables were already defined above and  $\varepsilon_{it}$  is the error term.

The selection equation was estimated with a probit model in the first stage of the Heckman method. This equation takes the following form:

$$\begin{aligned}
 AFP_{it}^* = & \\
 & f(\gamma_1 \cdot IPSA_{it} + \gamma_2 \cdot MTB_{it} + \gamma_3 \cdot ROA_{it} + \gamma_4 \cdot LNNTA_{it} + \gamma_5 \cdot VR1_{it} + \gamma_6 \cdot INVGRADE_{it} + \gamma_7 \cdot SPCGRADE_{it} + \\
 & Time Dummies + \mu_{it})
 \end{aligned} \tag{2}$$

$$AFP_{it} = 1, Si AFP_{it}^* > 0$$

$$AFP_{it} = 0, Si AFP_{it}^* = 0$$

The variable  $AFP_{it}^*$  is observed as  $AFP_{it} = 1$  when the pension funds have some ownership participation in the firm and 0 otherwise. In addition to that, it is controlled by other variables widely used in the empirical literature (Frank and Goyal 2009; Harris and Raviv 1991; Maquieira et al. 2007; Titman and Wessels 1988; Espinosa et al. 2012; Céspedes et al. 2010).

We also include a variable that is assumed to be an exogenous proxy for the capital market ( $IPSA$ ) (*Índice de Precios Selectivo de Acciones*)<sup>4</sup>.  $IPSA$  variable takes value 1 if the AFP invests in firms which are part of the  $IPSA$  market index

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<sup>4</sup> The *Índice de Precio Selectivo de Acciones* (IPSA) is the Chilean stock market index composed by the 40 stocks with the highest average annual trading volume in the Santiago Stock Exchange (*Bolsa de Comercio de Santiago*).

and 0 otherwise. Consequently, the more liquid the stocks where the pension funds invest, the higher their chance to vote with their feet by implementing the exit policy.

The growth opportunities (*MTB*) and the firm profitability (*ROA*) were also used as control variables. Pension funds look for firms with profitable investment projects to invest in since it is easier to access the market for public debt. Firm size (*LNTA*) was also included as a control variable in the selection equation. Pension funds tend to invest in large firms which usually have less volatile cash flows, have more diversified business units, operate in more mature industries and have good credit ratings, which allow them to obtain public financing and reduce the informational gap between the firm and outsiders. This scenario allows AFPs to incur in lower supervisory costs which increases their ownership participation in this kind of firms.

The *VR1* variable is the ownership or voting right of the controlling shareholder. We control for this variable because the Chilean corporate sector is characterized by weak protection of minority investors (La Porta et al. 1999; Demirgüç-Kunt and Maksimovic 2002; Lefort and González 2008). Therefore, the higher the ownership concentration in the hands of the controlling shareholder, the higher the expropriation risk born by the pension funds as minority investors. Consequently, they will avoid investing in firms with substantial expropriation risk, and therefore a negative relationship is expected between the participation of AFPs in the ownership of quoted firms and the voting rights of the controlling shareholder. Finally, the credit rating variable (*INVGRADE*) was entered in the analysis because pension funds are more willing to invest in firms with low default risk. Therefore, a positive relationship is expected between the AFPs' ownership participation and firms with investment grade.

## 4. Results

### a. Descriptive statistics

In this part of the analysis the descriptive statistics are shown. In Part A of Table 1 the mean, standard deviation as well as minimum and maximum values of the variables used in this study are tabulated. In Part B the sample is broken down in quintiles according to the AFPs' ownership participation in order to get a clear-cut picture on the relationship between this variable and the cost of bank debt. Additionally, Part C of Table 1 shows the mean difference test used to determine whether the cost of bank debt is significantly different across the levels of AFPs' ownership participation.

[Insert Table 1 about here]

Table 1 Part A shows that banks charge Chilean firms with an average annual interest rate (*CBD*) of 4.9%. Concerning ownership structure, the table shows that AFP's as equity investors keep a 5.4% of the outstanding shares (*PAFP*); while the majority investors hold about 46.6% of the ownership (*VR1*). Part B shows that as the ownership concentration of pension funds increases, the public debt also increases (*PDTD*), and consequently, the bank debt lowers. This finding supports the argument that AFPs push the firms toward more public debt instead of private debt for financing, as suggested by our crowding out hypothesis. This fact is reinforced through *DIRAFP* variable which increases with the quintiles from 1.8% of representation in the board of directors to 20.3% in the last quintile.

It is also observed that AFPs have a higher participation in large firms (*LNTA*) which confirms the fact that the pension funds invest in firms with both better credit reputation and fewer asymmetries of information.

We noticed that AFPs have higher ownership participation in firms where the controlling shareholder has a lower level of ownership or voting rights (*VR1*). This is basically due the restrictions imposed by the Chilean Pension Supervisor on the participation of AFPs in quoted firms.

A slight increase in the cost of bank debt has been observed, as the ownership participation of AFPs increases. Nevertheless, the mean difference test displayed in Part C, Table 1, shows that there are not significant differences among the last two quintiles at the standard statistical levels.

[Insert Table 2 about here]

Table 2 shows the Pearson correlation matrix. As expected, institutional participation (*PAFP*) is positively and significantly correlated with the cost of bank debt (*CBD*, *SPREADTII*, and *LNCBSPREADUF5*). These results support a priori our alternative research hypothesis that the higher the AFPs' participation is in firms, the higher the likely costs of bank debt are.

#### b. Empirical findings

This section describes the results for the multivariate analysis. Table 3 displays the results for the estimations of the selection equation (2) –probit model. In this case, the dependent variable is a dummy which takes the value 1 if the AFPs have equity interests in the firm, and zero otherwise. As expected, AFPs have a positive and significant propensity to participate in all those firms which are part of the IPSA market index. We observe that AFPs tend to invest in those firms highly traded in the capital markets in order to take advantage of their liquidity to exercise their exit right. The results also show that pension funds have a higher propensity to invest in large firms (*LNTA*). It seems to be that pension fund

managers are more prone to invest in firms with low default risk, higher operating diversification, and lower asymmetries of information with the capital markets. The results concerning the firms' growth opportunities (*MTB*) and profitability (*ROA*) were not statistically significant.

[Insert Table 3 about here]

The ownership in the hands of the controlling shareholder (*VR1*) impacts negatively the participation of pension funds on the equity capital of public firms. This fact is justified by regulatory issues. For instance, the current legislation<sup>5</sup> prevents AFPs from investing in firms where the controlling shareholder holds more than 65.0% of the outstanding shares –such a restriction is called the concentration factor. In addition to the regulatory argument, according to the agency theoretical approach, highly concentrated ownership structures are more prone to present the horizontal agency problem, which describes the conflicts of interests between the majority and minority shareholders. Consequently, when the voting rights (*VR1*) of the majority shareholder are excessively high, to exercise efficient monitoring, the costs of expropriation risk exceed the benefits of monitoring. Under this situation, the AFPs' propensity to invest in this kind of companies declines.

As expected, the AFPs' decision to invest in equity is clearly driven by the insolvency risk of the target firm. The results demonstrate that pension fund managers tend to invest in firms rated as investment grade (*INVGRADE*), but do not invest in speculative grade firms (*SPCGRADE*).

The results for the Heckman method's second step are displayed in Table 4. This table is used to analyze the impact of equity investments of pension fund managers on the cost of bank debt. The dependent variables in the first three columns is *CBD*; in columns (4), (5), and (6) is *SPRESDTII*; whilst in the last three columns it is *LNBCSPREADUF5*.

[Insert Table 4 about here]

Table 4 shows a positive and significant relationship between institutional ownership and the three proxies of the cost of bank debt. This finding confirms the arguments that the AFPs use their voting rights in firms where they invest to issue public debt, which causes an increase in the marginal cost of bank debt. This result is robust with our two alternative measures of AFPs' equity interests (*PAFP* and *DIRAFP*). For instance, in regression (1) we observe that when *PAFP* increases by a certain extent, the cost of bank debt (*CBD*) increases also by 0.053 times the change in *PAFP*, ceteris paribus. A similar scenario is observed when *SRPEADTII* is used as the dependent variable. For *LNBCSPREADUF5* we

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<sup>5</sup> The nature and the restrictions to the AFPs' investments is regulated basically by the DL 3500 of 1980, as well as by its more than forty updates since the law was promulgated. Additionally, the investments must fulfil the requirements of both the complimentary regulation named *Régimen de Inversiones de los Fondos de Pensiones* and the norms dictated by the Chilean Pensions Supervisor –the technical authority responsible for the supervision and control of the institutions involved in the Chilean Pension System. For further details, visit [www.spensiones.cl](http://www.spensiones.cl)

observe that one-standard deviation increase in this variable drives an increase of about 103% in the difference between the cost of bank debt and the interest rate of 5 years Central Bank bonds issued in *UFs* as computed in regression (7). Consequently, out of our three alternative measures of the cost of bank debt, *LNBCSPREADUF5* variable seems to be the most sensitive to changes in the AFPs' equity investments.

When we analyze the findings of *DIRAFP* variable, we observe that it is statistically significant under the three alternative measures of the cost of bank debt.

The table also shows that leverage (*TDTA*) is positively related to the three alternative measures of the cost of bank debt. Leverage is also a proxy for firm risk, and consequently, when financial leverage increases. We observe that when the total leverage increases to a certain extent, the cost of bank debt measured by *CBD* and *SPREADTII* increases by about 2.2%-2.3% of that change in both proxies for the cost of the bank debt. The average figure for the coefficient of *TDTA* tabulated in the last three regressions on Table 4 is 0.408. Similarly, we observe that public debt (*PDTD*) is also positively related to all the proxies for the cost of bank debt at standard significance levels. Since firms with high levels of public debt cannot take advantage of the economies of scale of private debt, the relative cost of bank debt is consequently higher.

If we look over firm size (*LNTA*), the findings describe a negative and statistically significant relationship with the cost of bank debt only in regressions (2), (5), and (8). Finally, *MTB*, *INVGRADE*, *SPCGRAD*, *TANG*, and *Z* variables did not enter the models as statistically significant.

## 5. Conclusions

This work aims to analyze how one of the multiple mechanisms of corporate governance works, namely the role of pension fund managers as minority shareholders in monitoring firms' management. This monitoring role is studied through the impact of AFP ownership participation on the cost of bank debt in the Chilean corporate sector.

The main findings show that institutional ownership increases the cost of bank borrowing. These results are contrary to what Roberts and Yuan (2010) have found for US public firms listed on the three major stock exchanges (NYSE, NASDAQ and AMEX). Our findings suggest that private creditors are characterized by being more efficient and specialized monitors than the capital markets, and consequently the institutional monitoring of pension funds is redundant.

The findings show that the AFPs in their role as the main minority shareholders impact positively the cost of bank debt for two reasons. First, by pursuing the board of directors to issue public debt for financing. Pension fund managers take these

actions to reduce the asymmetries of information between the firm and the outsider. This situation presses up the cost of bank borrowing because firms can no longer take advantage of the economies of scale of bank debt if they use more public debt instead. Second, the increased participation of pension funds in the ownership structure of firms reduces the potential expropriation of minority shareholders by majority/controller shareholders. The role played by AFPs in equity investments permits the reduction of asymmetries of information with the capital markets, and consequently the firms may issue public debt in more favorable conditions. This is supported by what we call the crowding-out hypothesis which suggested that as the equity stake of AFPs in the company increases, there will be a crowding out effect of private debt for public debt. Therefore, as the public debt level increases relative to private debt, the firm can no longer take advantage of the economies of scale on the cost of bank debt and consequently the interest spreads increase

**TABLE 1. Descriptive Statistics and Mean Difference Test**

<i>Variables</i>	<i>Mean</i>	<i>Standard Dev.</i>	<i>Min.</i>	<i>Max</i>	
<b>A. Total sample</b>					
<i>CBD</i>	0.049	0.022	0.025	0.143	
<i>PAFP</i>	0.054	0.066	0.000	0.264	
<i>LNTA</i>	12.59	1.692	8.551	16.99	
<i>MTB</i>	1.718	1.341	0.127	8.764	
<i>ROA</i>	0.043	0.107	-0.936	0.362	
<i>TANG</i>	0.457	0.228	0.007	0.999	
<i>TDTA</i>	0.462	0.173	0.009	0.882	
<i>PDTD</i>	0.256	0.332	0.000	1.000	
<i>VR1</i>	0.466	0.229	0.084	0.994	
<i>Z</i>	3.149	3.723	-1.698	42.37	
<i>Observations</i>	315				
	<i>Percentile 0</i>	<i>Percentile 1</i>	<i>Percentile 2</i>	<i>Percentile 3</i>	<i>Percentile 4</i>
<b>B. Descriptive Statistics by Percentile of AFPs' participation</b>					
<i>DIRAFP</i>	0.000 (0.000)	0.018 (0.049)	0.085 (0.073)	0.121 (0.079)	0.203 (0.080)
<i>VR1</i>	0.518 (0.269)	0.429 (0.211)	0.439 (0.184)	0.434 (0.215)	0.441 (0.217)
<i>BDTD</i>	0.873 (0.281)	0.851 (0.290)	0.683 (0.330)	0.603 (0.322)	0.617 (0.353)
<i>PDTD</i>	0.126 (0.281)	0.149 (0.290)	0.317 (0.330)	0.397 (0.322)	0.383 (0.353)
<i>LNTA</i>	11.51 (1.535)	12.49 (1.409)	12.79 (1.710)	13.33 (1.104)	13.61 (1.663)
<i>CBD</i>	0.047 (0.025)	0.039 (0.015)	0.049 (0.017)	0.049 (0.021)	0.053 (0.054)
	<i>CBD</i>				
<b>C. Mean Difference Test between Percentiles</b>					
<i>Percentile 0-1</i>	2.159**				
<i>Percentile 1-2</i>	-3.189***				
<i>Percentile 2-3</i>	-0.051				
<i>Percentile 3-4</i>	-0.685				

Part A shows the mean, standard deviation, minimum and maximum values of each variable for the whole sample. In Part B the sample is broken down between those firms where the AFPs do not have participation (Quintile 0) and those where they do have it (Quintile 1 to 4). The sample was divided in percentiles showing the mean (standard deviation) of the variables for each percentile. In Part C the mean difference test is shown for the means of the cost of the bank debt (CDBL) among the four percentiles. The significance level is denoted at \*\*\* less than 1%, \*\* less than 5%, and \* less than 10%.



TABLE 2: Correlation Matrix

Variables	<i>CBD</i>	<i>SPREADTII</i>	<i>LNCBSPREADUF5</i>	<i>PAFP</i>	<i>DIRAFP</i>	<i>LNTA</i>	<i>MTB</i>	<i>TDTA</i>	<i>PDTD</i>	<i>TANG</i>
<i>SPREADTII</i>	0.824***	1.000								
<i>LNCBSPREADUF5</i>	0.955***	0.806***	1.000							
<i>PAFP</i>	0.098*	0.116**	0.108**	1.000						
<i>DIRAFP</i>	0.087	0.098*	0.114**	0.817***	1.000					
<i>LNTA</i>	-0.204***	-0.185***	-0.194***	-0.390***	0.248***	1.000				
<i>MTB</i>	-0.052	-0.004	-0.078	0.101*	0.170***	0.164***	1.000			
<i>TDTA</i>	0.116**	0.104*	0.141**	0.071	0.065	0.2588***	0.179***	1.000		
<i>PDTD</i>	0.0007	0.019	-0.027	0.286***	0.204***	0.583***	0.056	0.161***	1.000	
<i>TANG</i>	-0.112**	-0.099*	-0.116**	-0.014	-0.109*	-0.0003	-0.051	-0.0368	0.003	1.000
<i>Z</i>	-0.089	-0.099*	-0.115**	-0.028	0.015	-0.109*	0.238***	-0.481***	-0.131**	-0.318***

This table presents the Pearson’s correlation matrix. *CBD* represents the marginal cost of bank debt. *SPREADTII* is the bank interest rate over the interbank interest rate. *LNCBSPREADUF5* is the natural logarithm of the difference between the cost of bank debt and the interest rate of 5 years Central Banks bonds issued in UF. *PAFP* is the ownership participation of the AFPs. *DIRAFP* is a dummy variable which take value 1 if the pension fund are represented in the board of directors, and 0 otherwise. *LNTA* is the natural logarithm of total assets. *MTB* is the market to book value of the firm. *TDTA* is the total debt over total assets. *PDTD* is the proportion of public debt over the total interest-bearing cost. *TANG* is a ratio of the net property, plant, and equipment over the total assets. *Z* is the Altman-Z Score. The significance level is denoted at \*\*\* less than 1%, \*\* less than 5%, and \* less than 10%.

TABLE 3. Heckman’s two stage method: Selection equation

Variables	AFP	
	(1)	(2)
Intercept	-2.028** (-2.32)	-2.006** (-2.26)
IPSA	0.943** (2.31)	0.946** (2.31)
MTB	0.067 (0.66)	0.075 (0.72)
ROA	0.159 (0.21)	0.242 (0.32)
LNTA	0.204*** (2.68)	0.206*** (2.7)
VRI	-0.014*** (-3.16)	-0.013*** (-3.15)
INVGRADE	0.838*** (3.73)	0.828*** (3.68)
SPCGRADE	-0.487 (-0.74)	-0.478 (-0.72)
Time Dummies		Yes
Log likelihood	-119.4	-119.19
LR Chi2	97.27***	97.72***
Pseudo R2	0.2894	0.2907

This table displays the estimated coefficients (t-statistics) for equation (2) through the Probit model, which corresponds to the first stage out of the Heckman’s two-stage method. The dependent variable is a dummy variable which takes the value 1 if the AFP has ownership participation into the firm, and zero otherwise. The independent variables are IPSA, which takes the value 1 if the firm where the AFP invests in is part of the *Índice de Precios Selectivo de Acciones* market index, and zero otherwise; growth opportunities (*MTB*); profitability of firms’ assets (*ROA*); the firm size (*LNTA*); the ownership participation or voting rights of the controlling shareholder (*VR1*); and the firm credit rating (*GRADINV* and *GRADOESP*). Time dummy variables were used as control variables. The significance level is denoted at \*\*\* less than 1%, \*\* less than 5%, and \* less than 10%.

TABLA 4. Heckman's second stage method: Corrected regression equation

Variables	CBD			SPREADTII			LNBCSPREADUF5		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Intercept	0.048* (1.79)	0.042 (1.56)	0.025 (0.84)	0.038 (0.89)	0.031 (1.14)	0.014 (0.46)	1.716*** (3.71)	1.669*** (3.59)	1.381*** (2.89)
PAFP	0.053** (2.4)	0.065*** (2.75)		0.067** (1.96)	0.065*** (2.75)		0.710* (1.88)	0.807** (1.98)	
DIRAFP			0.009** (2.43)			0.008** (2.43)			0.149*** (2.68)
TDTA	0.023** (2.25)	0.022** (1.99)	0.017 (1.52)	0.022 (1.43)	0.022** (1.99)	0.017 (1.52)	0.418** (2.43)	0.441** (2.34)	0.366** (1.97)
MTB	-0.0003 (-0.03)	0.0007 (0.52)	0.0002 (0.13)	0.002 (0.79)	0.0008 (0.52)	0.0002 (0.13)	-0.012 (-0.54)	-0.005 (-0.24)	-0.011 (-0.48)
PDTD	0.011** (1.96)	0.014** (2.49)	0.014** (2.22)	0.017* (1.89)	0.014** (2.49)	0.014** (2.22)	0.176* (1.85)	0.256*** (2.62)	0.242** (2.45)
LNTA	-0.003 (-1.48)	-0.003* (-1.78)	-0.002 (-0.86)	-0.002 (-0.73)	-0.003* (-1.78)	-0.002 (-0.86)	-0.042 (-1.46)	-0.047* (-1.75)	-0.033 (-1.14)
INVGRADE	0.008 (1.29)	0.004 (0.59)	0.005 (0.68)	0.013 (1.27)	0.004 (0.59)	0.005 (0.68)	0.174 (1.56)	0.072 (0.64)	0.073 (0.65)
SPCGRADE	-0.009 (-0.71)	0.0005 (0.04)	0.002 (0.15)	-0.006 (-0.30)	0.0005 (0.04)	0.002 (0.15)	-0.108 (-0.49)	0.031 (0.15)	0.047 (0.21)
TANG	-0.0002 (-0.03)	-0.002 (-0.20)	0.005 (0.60)	0.0002 (0.02)	-0.002 (-0.20)	0.005 (0.60)	-0.013 (-0.10)	-0.009 (-0.07)	0.099 (0.73)
Z	-0.0002 (-0.47)	-0.0002 (-0.54)	-0.0002 (-0.49)	-0.0007 (-1.09)	-0.0002 (-0.54)	-0.0002 (-0.49)	-0.005 (-0.67)	-0.004 (-0.54)	-0.004 (-0.55)
Lambda	0.021** (1.98)	0.020* (1.88)	0.023** (2.02)	0.035** (2.11)	0.020* (1.88)	0.023** (2.02)	0.372** (2.01)	0.326* (1.79)	0.370** (2.02)
Time Dummies	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Industry Dummy	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Obs.	315	315	315	315	315	315	315	315	315
Wald Chi2	30.67***	60.62***	51.37***	23.60***	153.48***	130.17***	32.03***	59.5***	64.51***

This table displays the estimated coefficients (t-statistics) for equation (1) through the Ordinary Least Square method, which correspond to the second stage out of the Heckman's two-stage method. The dependent variable corresponds to the cost of bank debt (CBD). As robustness checks, two alternative dependent variables were used: i) the interest rate spread over the interbank interest rate (SPREADTII); and ii) the natural logarithm of the difference between the cost of bank debt and the interest rate of 5 years Central Bank bonds (LNBCSPREADUF5). The independent variables are the participation of the AFP into the firm (PAFP), a dummy variable which takes the value 1 if the pension funds have representatives in the firm's board of directors (DIRAFP), the firm size (LNTA), growth opportunities (MTB), the firm leverage (TDTA), the public debt level (PDTD), the collateral or firm's assets tangibility (TANG), the firm's credit rating (INVGRADE and SPCGRADE), and the insolvency risk (Z).  $\lambda$  represents the inverse Mills ratio estimated in the first stage of the Heckman method. Time dummy variables as well as industry dummy variables were used as control variables. The Wald-Chi2 is the joint significance test of the estimated coefficients. The significance level is denoted at \*\*\* less than 1%, \*\* less than 5%, and \* less than 10%.

## References

- Acuña, R., and Iglesias, A. (2001). La Reforma de las Pensiones. In F. Larraín, & R. Vergara (Eds.), *La Transformación Económica de Chile* (pp. 430-490). Santiago: Centro de Estudios Públicos.
- Almazan, A., Hartzell, J. C., and Starks, L. T. (2005). Active Institutional Shareholders and Costs of Monitoring: Evidence from Executive Compensation. *Financial Management*, 34(4), 5-34.
- Amihud, Y., and Li, K. (2006). The declining information content of dividend announcements and the effects of institutional holdings. *Journal of Financial and Quantitative Analysis*, 41(3), 637-660.
- Araya, F., Jara, M., Maquieira, C., and San Martín, P. (2015). Influencia de los Inversionistas Institucionales en las Decisiones de Estructura de Capital de la Empresa. Evidencia para un Mercado Emergente. *El Trimestre Económico*, LXXXII (2)(326), 279-311.
- Bathala, C. T., Moon, K. P., and Rao, R. P. (1994). Managerial Ownership, Debt Policy, and the Impact of Institutional Holdings: An Agency Perspective. *Financial Management*, 23(3), 38-50, doi:10.2307/3665620.
- Beck, T., Demirgüç-Kunt, A., and Levine, R. (2000). A New Database on the Structure and Development of the Financial Sector. *World Bank Economic Review*, 14(3), 597-605.
- Bennett, J. A., Sias, R. W., and Starks, L. T. (2003). Greener Pastures and the Impact of Dynamic Institutional Preferences. *Review of Financial Studies*, 16(4), 1203-1238.
- Bethel, J. E., Liebeskind, J. P., and Opler, T. (1998). Block Share Purchases and Corporate Performance. *The Journal of Finance*, 53(2), 605-634.
- Bhattacharya, P. S., and Graham, M. A. (2009). On institutional ownership and firm performance: A disaggregated view. *Journal of Multinational Financial Management*, 19(5), 370-394.

- Bhojraj, S., and Sengupta, P. (2003). Effect of Corporate Governance on Bond Ratings and Yields: The Role of Institutional Investors and Outside Directors. *Journal of Business*, 76(3), 455-475.
- Borokhovich, Kenneth A., Brunarski, K., Harman, Yvette S., and Parrino, R. (2006). Variation in the Monitoring Incentives of Outside Stockholders. *Journal of Law and Economics*, 49(2), 651-680, doi:10.1086/505368.
- Brickley, J. A., Lease, R. C., and Smith Jr, C. W. (1988). Ownership structure and voting on antitakeover amendments. *Journal of Financial Economics*, 20, 267-291.
- Buchuk, D., Larraín, B., Muñoz, F., and Urzúa, F. (2014). The internal capital markets of business groups: Evidence from intra-group loans. *Journal of Financial Economics*, 112(2), 190-212.
- Campello, M., and Larrain, M. (2015). Enlarging the Contracting Space: Collateral Menus, Access to Credit, and Economic Activity. *Review of Financial Studies*.
- Céspedes, J., González, M., and Molina, C. A. (2010). Ownership and capital structure in Latin America. *Journal of Business Research*, 63(3), 248-254.
- Chung, R., Firth, M., and Kim, J.-B. (2002a). Institutional monitoring and opportunistic earnings management. *Journal of Corporate Finance*, 8(1), 29-48.
- Chung, R., Firth, M., and Kim, J.-B. (2002b). Institutional monitoring and opportunistic earnings management. *Journal of Corporate Finance*, 8, 29-48.
- Coffee, J. C. (1991). Liquidity versus Control: The Institutional Investor as Corporate Monitor. *Columbia Law Review*, 91(6), 1277-1368, doi:10.2307/1123064.
- Demirgüç-Kunt, A., and Maksimovic, V. (2002). Funding growth in bank-based and market-based financial systems: evidence from firm-level data. *Journal of Financial Economics*, 65(3), 337-363.
- Dong, M., and Ozkan, A. (2008). Institutional investors and director pay: An empirical study of UK companies. *Journal of Multinational Financial Management*, 18(1), 16-29.
- Duggal, R., and Millar, J. A. (1999). Institutional ownership and firm performance: The case of bidder returns. *Journal of Corporate Finance*, 5(2), 103-117.
- Elyasiani, E., and Jia, J. (2010). Distribution of institutional ownership and corporate firm performance. *Journal of Banking & Finance*, 34, 606-620.
- Elyasiani, E., Jia, J., and Mao, C. X. (2010). Institutional ownership stability and the cost of debt. *Journal of Financial Markets*, 13(4), 475-500.
- Espinosa, C., Maquieira, C., Vieito, J. P., and González, M. (2012). Capital Structures in Developing Countries: The Latin American Case. *Investigación Económica*, LXXI(282), 35-54.
- Faccio, M., and Lasfer, M. A. (2000). Do occupational pension funds monitor companies in which they hold large stakes? *Journal of Corporate Finance*, 6(1), 71-110.
- Fernández, V. (2005). Monetary policy and the banking sector in Chile. *Emerging Markets Finance & Trade*, 41(3), 5-36.
- Ferreira, M. A., and Matos, P. (2008a). The colors of investors' money: The role of institutional investors around the world. *Journal of Financial Economics*, 88(3), 499-533.
- Ferreira, M. A., and Matos, P. (2008b). The colors of investors' money: The role of institutional investors around the world. *Journal of Financial Economics*, 88, 499-533.
- Frank, M. Z., and Goyal, V. K. (2009). Capital Structure Decisions: Which Factors Are Reliably Important? *Financial Management*, 38(1), 1-37.
- Gillan, S. L., and Starks, L. T. (2003). Corporate Governance, Corporate Ownership, and the Role of Institutional Investors: A Global Perspective. *Journal of Applied Finance*, 13(2), 4-22.
- Gompers, P., and Metrick, A. (2001). Institutional Investors and Equity Prices. *Quarterly Journal of Economics*, 116(1), 229-259.
- Greene, W. (2003). *Econometric Analysis* (5th ed.): Prentice Hall.
- Harris, M., and Raviv, A. (1991). The theory of capital structure. *The Journal of Finance*, 46(1), 297-355.
- Hartzell, J. C., and Starks, L. T. (2003). Institutional Investors and Executive Compensation. *The Journal of Finance*, 58(6).
- Heckman, J. J. (1979). Sample Selection Bias as a Specification. *Econometrica*, 47(1), 153-161.
- Iglesias, A. (1999-2000). Pension reform and corporate governance: Impact in Chile. *Revista ABANTE*, 3(1), 109-141.
- Jara, M., López, F., and López-de-Foronda, Ó. (2012). Does the influence of institutional investors depend on the institutional framework? An international analysis. *Applied Economics*, 44(3), 265-278.
- Jara, M., and Sánchez, S. (2012). Factores Determinantes del Endeudamiento Bancario en la Empresa No Financiera Chilena. *El Trimestre Económico*, 79(313), 53-84.
- Khanna, T., and Palepu, K. (2000). The Future of Business Groups in Emerging Markets: Long-Run Evidence from Chile. *The Academy of Management Journal*, 43(3), 268-285.
- Krishnaswami, S., and Subramaniam, V. (1999). Information asymmetry, valuation, and the corporate spin-off decision. *Journal of Financial Economics*, 53(1), 73-112.
- La Porta, R., Lopez-De-Silanes, F., and Shleifer, A. (1999). Corporate ownership around the world. *The Journal of Finance*, 54(2), 471-517.

- La Porta, R., Lopez-De-Silanes, F., Shleifer, A., and Vishny, R. (1998). Law and Finance. *The Journal of Political Economy*, 106(6), 1113-1155.
- Lefort, F., and González, R. (2008). Hacia un mejor gobierno corporativo en Chile. *Revista ABANTE*, 11(1), 17-37.
- Lefort, F., and Urzúa, F. (2008). Board independence, firm performance and ownership concentration: Evidence from Chile. *Journal of Business Research*, 61(6), 615-622.
- Lefort, F., and Walker, E. (1999-2000). Ownership and capital structure of Chilean conglomerates: Facts and hypotheses for governance. *Revista ABANTE*, 3(1), 3-27.
- Lefort, F., and Walker, E. (2002). Cambios estructurales e integración. Discusión y análisis del mercado accionario chileno. *Cuadernos de Economía*, 116, 95-122.
- Lefort, F., and Walker, E. (2007a). Do markets penalize agency conflicts between controlling and minority shareholders? Evidence from Chile. *the Developing Economies*, 45(3), 283-314.
- Lefort, F., and Walker, E. (2007b). The Effect of Corporate Governance Practices on Company Market Valuation and Payout Policy in Chile. In Chong, & Lopez-de-Silanes (Eds.), *Investor Protection in Latin America* (pp. 289-235). Stanford: Stanford University Press.
- Lin, C., Ma, Y., Malatesta, P., and Xuan, Y. (2011). Ownership structure and the cost of corporate borrowing. *Journal of Financial Economics*, 100(1), 1-23.
- López, F., García-Meca, E., and Tejerina, F. (2015). Institutional directors and board compensation: Spanish evidence. *Business Research Quarterly*, 18(3), 161-173, doi:10.1016/j.brq.2014.07.003.
- Maquieira, C., Olavarrieta, S., and Zutta, P. (2007). Determinantes de la Estructura de Financiación: Evidencia empírica para Chile. *El Trimestre Económico*, 74(293), 161-193.
- McConnell, J. J., and Servaes, H. (1990). Additional evidence on equity ownership and corporate value. *Journal of Financial Economics*, 27(2), 595-612.
- Omran, M. M., Bolbol, A., and Fatheldin, A. (2008). Corporate governance and firm performance in Arab equity markets: Does ownership concentration matter? *International Review of Law and Economics*, 28(1), 32-45.
- Parrino, R., Sias, R. W., and Starks, L. T. (2003). Voting with their feet: institutional ownership changes around forced CEO turnover. *Journal of Financial Economics*, 68(1), 3-46.
- Petersen, M. A. (2009). Estimating Standard Errors in Finance Panel Data Sets: Comparing Approaches. *The Review of Financial Studies*, 22(1), 435-480.
- Pindado, J., and De La Torre, C. (2006). The Role of Investment, Financing and Dividend Decisions in Explaining Corporate Ownership Structure: Empirical Evidence from Spain. *European Financial Management*, 12(5), 661-687.
- Pindado, J., and De La Torre, C. (2011). Capital Structure: New Evidence from the Ownership Structure. *International Review of Finance*, 11(2), 213-226.
- Rajan, R., and Winton, A. (1995). Covenants and collateral as incentives to monitor. *The Journal of Finance*, 50(4), 1113-1146.
- Rajan, R., and Zingales, L. (1995). What do we know about capital structure? Some evidence from international data. *The Journal of Finance*, 50(5), 1421-1460.
- Roberts, G., and Yuan, L. (2010). Does institutional ownership affect the cost of bank borrowing? *Journal of Economics and Business*, 62(6), 604-626.
- Roberts, M. R., and Whited, T. M. (2013). Endogeneity in Empirical Corporate Finance. In G. M. Constantinides, M. Harris, & R. Stulz (Eds.), *Handbook of the Economics of Finance* (Vol. Volume 2, Part A, pp. 493-572): Elsevier.
- Ruiz-Mallorquí, M. V., and Santana-Martín, D. J. (2011). Dominant institutional owners and firm value. *Journal of Banking & Finance*, 35(1), 118-129.
- Smith, M. P. (1996). Shareholder Activism by Institutional Investors: Evidence from CalPERS. *The Journal of Finance*, 51(1), 227-252.
- Titman, S., and Wessels, R. (1988). The determinants of capital structure choices. *The Journal of Finance*, 43(1), 1-19.
- Vittas, D. (1996). Pension Funds and Capital Markets : Investment Regulation, Financial Innovation, and Governance. *World Bank View Point*, 71(1), 1-4.
- Wahal, S. (1996). Pension Fund Activism and Firm Performance. *Journal of Financial & Quantitative Analysis*, 31(1), 1-23.
- Walker, E., and Lefort, F. (2002). Pension Reform and Capital Markets: Are There Any (Hard) Links? *Revista ABANTE*, 5(2), 77-149.
- WEF (2009). *The Global Competitiveness Report 2008-2009*: World Economic Forum.
- WEF (2012). *The Global Competitiveness Report 2012-2013*: World Economic Forum.
- Woidtke, T. (2002). Agents watching agents?: Evidence from pension fund ownership and firm value. *Journal of Financial Economics*, 63(1), 99-131.
- Wooldridge, J. (2002). *Econometric analysis of cross section and panel data* (The MIT Press). London: The MIT Press.
- Zhou, Q., Faff, R., and Alpert, K. (2014). Bias correction in the estimation of dynamic panel models in corporate finance. *Journal of Corporate Finance*, 25, 494-513.