Board capital and institutional investor holdings
Evidence in Latin America[1]

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Abstract

This paper examines how the board of directors' attributes in terms of educational, professional backgrounds, and demographics influences institutional ownership across listed companies in Latin America. Based on unique hand-collected information of directors' educational and professional attributes across 427 firms in Latin America, the authors analyze the effects that directors' educational degree, professional experience, and demographic diversification have on institutional investors holdings. Results show that grey investor ownership favors directors with graduate studies and diverse boards in terms of gender and nationality. Independent investors place more value on directors' professional experience like former founders of a firm. Grey investors are more concerned with firm corporate governance mechanisms, consistent with the agency view, while independent institutional investors focus on business opportunities in accordance with the resource-based-view of boards of directors.

Key words: Institutional investor preferences; board capital; corporate governance; Latin America

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1. Introduction

During the last five decades, a stylized fact in several developed countries has been the increasing trend of institutional ownership on equity markets. The United States, the United Kingdom, and Canada have led this trend. Institutional ownership in the United States in 1970 was 20%. Forty years later, this number rose to 65% (Borochin and Yang, 2017) By 2007, the institutional holdings among listed firms were 59% in Canada, 38% in the UK, 37% in Spain and Sweden, 36% in Finland, and 31% in Norway and France (Aggarwal *et al.*, 2011). Such a trend has also been observed in large emerging markets. For instance, in five large stock markets in Latin America[2], the mean of blockholding institutional ownership was 3.2% in 2003. That fraction increased to 7.2% by 2016. Blockholder institutional investors, in the region, has a presence on around 30% of listed firms (Alvarez *et al.*, 2018).

The role of institutional investors covers many aspects of the modern public corporation, the three most salient are: their ability to act as informed investors, monitoring, and counseling. Institutional investor's ability to gather information contributes to the development of capital markets by stimulating efficient transactions, appropriate risk assessment, and a sound corporate governance system. They can exert a direct influence upon firm management discipline by monitoring and participating at managerial levels, or indirectly through their ability to sell, or threaten selling, their shares (activism) (Gillan and Starks, 2005, 2007). These three roles influence corporate policies such as: executive compensation, board of directors' structure, shareholder voting schemes, and anti-takeover amendments, or any other shareholder proposal which at the end are meant to increase firm wealth.

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[2] Brazil, Chile, Colombia, Mexico, Peru

Empirical research conducted over the last decade highlights the benefit by the presence of institutional investors Several studies have shown that institutional ownership increases firm market value (Ferreira and Matos, 2008), lowers cost of debt (Elyasiani *et al.*, 2010), generates higher information disclosure (Bird and Karolyi, 2016), and enhances higher governance standards in low investor protection countries (Aggarwal *et al.*, 2011).

Ferreira and Matos (2008) examine the determinants of institutional ownership analyzing where institutional investors invest. They examine: size, stock liquidity, or dividend yield firms. After linking corporate governance and institutional investors, they found that foreign investor preferences outside the U.S. are highly sensitive to firm cross-listing status and to whether companies belong to the MSCI index. Studies on investor preferences in the U.S., highlight how board characteristics add value to firm governance; however, they do not emphasize how board's attributes influence institutional investors ownership. For instance, Gompers and Metrick (2001) construct a firm specific board of directors' index based on 24 bylaw provisions to protect shareholders from hostile takeovers (i.e., greenmailing, golden parachutes, poison pills) or provisions related with voting schemes (proxy voting, cumulative voting, supermajority). Bebchuk and Cohen (2005) work with a board entrenchment index, which takes 6 out of the 24 IRRC provisions as in Gomper's index. None of these studies examines whether board characteristics affect institutional investors in any way.

This article examines the link between the board of directors' attributes, in terms of their educational, and professional experience and institutional ownership blockholding within non-financial listed firms in Latin America. Corporate ownership studies have emphasized that the structure of multiple blockholders generates control contestability that is value-enhancing. This mechanism reduces potential tunneling from the controlling owner. This fact has been documented for Europe across large listed firms (Maury and Pajuste, 2005; Jara-Bertin *et al.*,

2008; Laeven and Levine, 2009) or for specific samples with family control (Sacristán-Navarro *et al.*, 2011). Pombo and Taborda (2017) provide evidence of the positive effects that second blockholders have on a firm value within stock liquid firms in Latin America.

This study relies on the concept of board capital, which is an organizational input. The concept dates to the work of Pfeffer and Salancik (1978) and similar authors from the theory of dependence on resources -Resource-Based View- and more recently, the work of Hillman, Cannella and Paetzold (2000) and Hillman and Dalziel (2003), who from the same school try to integrate a view of agency costs with one of dependence on resources to explain the role of directors upon firm performance. The concept of board capital is the sum of two components: i) Human Capital and ii) Relational Capital. The former is associated with an individual's education, while the latter is related to the profile and professional experience. These attributes are intrinsic to people. They have been generated by ex-ante decisions that affect the current scenario; thus, in ex-post scenarios, they reveal themselves as competitive characteristics in the directors' labor market. In parallel, there are demographic attributes, exogenous in nature, such as age, gender, or nationality. Thus, the set of attributes associated with individual professional profiles and exogenous demographic attributes become the source of directors' characteristics in terms of their company profile, performance, and ultimately appeal to institutional investors.

A key assumption underlying in the study of Hillman and Dalziel (2003) is that board capital components, i.e., educational degree and professional experience attributes, are exogenous or quasi-fixed in the short run. We can expect this feature to be particularly common in developing countries with limited human capital and shallow financial markets. This means that the appointment of directors with the desired attributes, regardless of whether they are outsiders or insiders, is limited by the availability of alternative or potential candidates who can join the board of directors. This feature is more evident within emerging markets where directorate

diversification is lower because most listed firms are affiliated to business groups, and firms have clear controlling (voting-blocks) owners with a narrow view of the diversity and role of board members. Higher board capital and the presence of heterogeneous boards become a market signal of strong internal corporate governance. Under this setting, outside investors associate strong boards with the member's background once they enhance the provision of resources and efficient monitoring.

The study is centered-around two main research questions. The first is whether higher levels of board capital lead to the larger institutional investor shareholdings. The second is whether the heterogeneity of institutions given their activism role implies different preferences on specific director attributes and what the implications are. We extend previous literature on institutional investor preferences by providing empirical evidence that firm board capital becomes a collective asset that is central for institutional investors' investment choices for an emerging market case.

We focus on Latin America six larger capital markets i.e., Argentina, Brazil, Chile, Colombia Mexico, and Peru for the period 2001-2011, years by which the main corporate governance and security issuers reforms across the region were implemented. These reforms were important in terms of providing higher investor protection standards regarding minority rights, the appointment of independent directors, initial public offerings, changes in private pension funds regimes, related party transactions, and lending relations within affiliated parties, among other issues. The main reforms, but not the only ones, were Chile's IPO's law (Law 19705, Dec/2000), Chile's second reform on pension fund system (law 20255, 2008), Colombia's equity issuers reform (Law 964, 2005), Argentina's security market law (Law 27440, 2005), and the following capital market reform (Law 26831, 2012). The Brazilian stock market (BOVESPA) created in

2001 three new segments (Novo Mercado) requiring different degrees of corporate governance disclosures; and Mexico undertook the new security market law in 2005.[3]

Those reforms implied changes for security issuers regarding corporate best practices and directorate structure under the regulatory "comply or explain" principle. Listed firms in these markets report today an important fraction of independent directors on their boards. Also for those Latin American countries that are OECD members, they must comply with the country's best code best practices. Thus, we expect also a change in firm board capital structure and a positive impact on the levels of institutional ownership.

The main results of this study show that institutional investor preferences vary across investor types. Grey investors -pension funds, insurance companies, bank trusts- lean toward firms with directors who have graduate studies degrees. There is also a preference for diversity given that gender and country of origin. Independent investors -mutual funds, investment firms, and investor advisors- reveal different preferences. Their holdings increase by 150 base points for every 10% increase if board members have founded a company, and they "dislike" directors with previous experience in the public sector. Ownership decreases by 160 base points for every 10% increase in the ratio of directors with public sector experience. There is a negative relationship with respect to gender diversification.

The remainder of this article is organized as follows. Section II presents the data and discusses the paper's empirical design. Section III presents the results of the random effects of baseline regressions. Section IV provides a robustness analysis of the empirical results. Section V concludes.

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[3] For more details, see: Chong and Lopez-de-Silanes (2007) and Aguilera and Desender (2012)

2. Data and method

This study uses a longitudinal database from 2001 to 2011 for 427 listed, non-financial firms, accounting for 4702 firm-year observations in Argentina, Brazil, Chile, Colombia, Mexico, and Peru. [4]The source of the ownership data was the Thomson DataStream platform. Shareholder information for Chile, Brazil, and Peru for years 2000-2006 was extracted from the *Economatica* platform and the corresponding local regulatory agencies. From 2007 to 2011, most of the shareholder information was retrieved from Thomson *Eikon-Worldscope* platforms.[5] The source of board of directors characteristics (such as: gender, nationality, educational background, and professional experience) was *Thomson-Eikon*, and each country regulatory agency. Missing information on directors' characteristics was hand-collected from firms' web sites, director's CVs, and the online social/professional network LinkedIn. The final sample excludes non-active firms, firms with non-equity instruments, financial institutions, and those with missing information on ownership and board of directors. The sample is highly representative; it includes most firms indexed at the local stock market during the analyzed period.

2.1 Baseline estimation

The baseline estimation explores the association between board capital variables and institutional ownership holdings. Institutional investors respond to board capital (the human and relational capital), and the demographic diversity (i.e., gender and nationality). These sets of variables comprise the quality of the board of directors and, therefore, signal the potential institutional investor the stronger corporate governance, better financial performance, and opportunity for institutional investors.

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[4] Table A.I in thje appendix displays the number of firms by county and year.
[5] Superintendencia de Valores y Seguros (Chile), Superintendencia del Mercado de Valores (Peru), Comissao de Valores Mobiliarios (Brazil), Superintendencia Financiera (Colombia). Comision Nacional Bancaria y de Valores (Mexico), and Comision Nacional de Valores (Argentina).

The empirical approach estimates a regression where institutional investors equity share (II) is the dependent variable to be explained by board capital (BC), board structure (BS), board demographics (BDEM), country macroeconomic variables (MACRO), and blockholder ownership contestability proxies (OWN). Firm financial-specific variables are also included. Regressions followed a general two-way error component model across firms (i) and time (t). The baseline equation includes dummy variables to control for unobservable characteristics at industry and country levels:

$$II_{it} = \beta_0 + \beta_k \mathbf{BC_{it}} + \beta_k \mathbf{BDEM_{it}} + \beta_k \mathbf{BS_{it}} + \gamma_k \mathbf{OWN_{it}} + \varphi_k \mathbf{X_{it}} + \beta_j \mathbf{MACRO_{jt}} + \beta_l \mathbf{I_l}$$
$$+ \beta_j \mathbf{c_j} + (\mu_i + \lambda_t + \varepsilon_{it}) \tag{1}$$

where subscripts i stand for firm, l for industry, j for country, and t for year. The dependent variable (*II*) in the model represents the institutional investor shareholdings by type of institutional investor. This study defines an institutional blockholder investor as an investor fulfilling one of the following characteristics: investment fund, a bank, a pension fund, or an insurance company as the top three shareholders. It is likely that institutional investors flock their portfolios to firms that present good corporate governance, and, therefore, lower agency and external resource costs, as discussed in the previous section. In order to attenuate the investors' preferences for firms with good governance, only institutional investors that could be identified as blockholders (owning at least 5% of firm cash flow rights) were considered (Edmans and Holderness, 2017) Applying the threshold of 5%, we are able to remove retail investors including minority institutional ones who behave as retail investors.

The core variables in the empirical analysis are included in the board capital (BC) and board demographic (BDEM) vectors on the right-hand side of Eq.1. The first includes director

educational and relational variables proxied by the number of board members with graduate studies degrees, undergraduate studies different from law or business; and directors with managerial, entrepreneurial, and public sector backgrounds. The board demographic is captured by the female and foreign directors to board size ratio.

The empirical model also controls for board structure (BS) variables, which are associated with firms' founding statues or country-specific corporate governance ruling for securities issuers. These variables enhance boards' skill levels in both their monitoring and resource provision roles. The base regression controls for outside director ratio, and whether the CEO performs as well as the chairman of the board (COB) The first variable is defined as the non-executive directors to total board ratio. This definition is well known in the literature and proxies a measure of board independence. The second one is director turnover. Low board turnover is a signal for potentially entrenched boards (Bebchuk and Cohen, 2005). The third variable coded as CEO-COB dummy defines the discretionary power of management over the board, reducing director incentives for monitoring (Ryan and Wiggins, 2004). All non-dummy board-related variables are normalized relative to board size.[6]

Table I shows the summary statistics of the institutional ownership and the board related variables included in the baseline estimation. Several comments are worth highlighting. The statistics in Panel-A show that in 57% of the sample, firms have at least one institutional investor as a blockholder with 20% of equity share on average; 54% percent of the total sample are independent blockholder investors, while 11% are grey investors. In the subsample of firms with positive blockholding institutional ownership, grey investors hold an average of 15% ownership,

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[6] Complete definitions and their sources can be found in the appendix (Table A.II)

while independent investors double that number to 33%.[7]

Panel B summarizes the statistics by firm/year dimension of the board capital variables (director educational and career background). Educational profiles show that 28% of board members have a bachelor's degree in business, 9% report degrees in law, and 18% have a different bachelor's degree (i.e., engineering mostly). Regarding graduate studies, 23% of directors have a master's degree, including MBAs. Career experience profiles show that 31% of directors have experience as CEOs, and only 4% of them have been founder partners of companies or report labor experience within the public sector. Panel C depicts board demographics variables. The statistics show that gender diversification is low, with less than 7% female directors. This number is much lower than figures for the U.S. (17%)[8] and far from the cutoff point recommended in European countries with mandatory gender quotas (25%). In contrast, boards show that around one quarter of appointed directors are foreigners.

Panel D summarizes the board structure variables statistics associated with companies' founding statues and corporate governance compliance. Board size is of an average of 10 members, with more than seven outside members and less than two independent members. In around 17% of the sample, the CEO is also the chairman of the board. Director turnover is low, around 6% per year, meaning that it takes around 1.4 years to replace one director.

[TABLE I HERE]

3.3 Control variables

The baseline regression equation includes three types of control variables following the literature in empirical corporate governance research for developed and for emerging markets. The first

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[7] This fraction of institutional ownership in Latin American corporations is similar to what has been shown for other larger emerging market economies (Alvarez et al., 2018).
[8] This is the fraction of women directors in the U.S. in 2012. This ratio increased to 22% by 2017. For all S&P500 firms, there is at least one woman on the board. For more details, see the Spencer Stuart Board Index Report (2017).

set includes the blockholder ownership contestability proxies (OWN). Following Maury and Pajuste (2005), we used the *Herfindahl differences* of equity rights among the top 4 blockholders as the main proxy for blockholder contestability. This indicator measures the relative voting power and monitoring capacity among large shareholders. The index tends towards zero as long as blockholders' equity shares are more equally distributed. Corporate ownership in Latin America is highly concentrated, with many firms exhibiting absolute control by the first large shareholder, reducing contestability from the subsequent voting blocks. The first blockholder equity rights variable is also included to measure any remaining contestability effect. Both variables rely on the evidence that for a high number of publicly traded firms in the region, the largest blockholder owns over 50% of equity (Pombo and Taborda, 2017) thus, when the largest blockholder has more than 50% of direct votes, the firm faces a dominant voting coalition.

The following firm financial-specific variables are included in the model (vector **X**): return on assets, leverage, operating income volatility, firm size, asset tangibility, and stock turnover. We used return on assets (ROA) as a measure of firm performance, and the variable was defined as the net income to total assets ratio. Operating income volatility was measured as the standard deviation of operating income for the last three years. This variable serves as a proxy for firm idiosyncratic risk. Other things being equal, the higher a firm's operating income volatility, the lower the likelihood an institutional investor will be present. Firm size is measured by the natural logarithm of total assets. We expected a negative relationship between size and the presence of institutional, since size proxies for firm age, and older firms tend to be less prone to institutional investment. Firm size also served as a proxy for the existence of a moral hazard event from management, since monitoring costs increase with size. Asset tangibility stands for plant, property, and equipment valuation relative to the total assets ratio. Low asset tangibility indicates that a firm's cash flow is being produced by intangibles. Stock turnover, as a proxy for market

liquidity, is a dummy variable that takes the value of one if the stock turnover of the firm is above the 75th percentile.

Finally, we include macroeconomic variables (MACRO) as control variables. These are the emerging markets bond index (EMBI) as a proxy of country risk, market capitalization ratio as an indicator of stock market deepening, and the property rights index that captures country investor protection levels. We expect a negative relation between institutional ownership and the EMBI index, and a positive relation with the last two macro variables.[9]

3. Econometric results

3.1 Identification analysis

This section discusses the identification results of institutional ownership regression according to the model in Eq.1 by type of institutional investors. **Tables II and III** display the random effects regressions results exploring the determinants of institutional ownership by institutional investor type; i.e., grey and independent. These regressions control for dummies for industry and country, keeping all time-invariant variables such as the information on director attributes in the model.

Both tables display in Eq. 1 to 7, the regression coefficients of each board capital and demographic variables in explaining the effect on investor holdings. Eq.8 displays the regression equation that includes all board capital and demographic variables. Eq. 9 includes the set of all controls of the baseline model, that is the board structure, blockholder contestability, firm financial and country macroeconomic explanatory variables.

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[9] Table A.III in the appendix shows the full descriptive statistics of blockholder ownership, firm financial variables and country's macro indicators.

Several comments are worth mentioning. First, board educational variables are positively correlated with grey institutional ownership, which coincides with the agency view of board monitoring role [**Table II**]. The size effect of graduate studies on grey investors ownership is, on average, 3.2% according to regression coefficients $[\beta_1 = 0.028 \ (Eq.\ 1); \ \beta_1 = 0.0341 \ (Eq.\ 8); \ \beta_1 = 0.0342 \ (Eq.\ 9)]$ This means that one standard deviation change (0.28) in the fraction of directors holding a master's degree increases investor holding by 87 base points. In terms of firm value, the average grey blockholding ownership is 15.5%, therefore in a given firm with an equity value of $100 million dollars, grey investor holdings would increase from $15.5 to $15.63 million. Thus, the marginal effect is a $130,000 increase. These coefficients are significant at a 1% level.

Independent investors seem to dislike directors with non-business or law bachelor's degrees [**Table III**]. The marginal effect is $\beta_2 = -0.057$ (Eq. 2) and $\beta_2 = -0.064$ (Eq. 9). However, they are indifferent to directors with graduate studies. The regression coefficient β_1 is statistically non-significant according to regression in Eq.1 and Eq. 9.

Second, independent investor ownership is well explained by board relational capital variables The estimates show that institutional investors value the presence of directors with entrepreneurial experience and dislike the appointment of directors with public experience. In particular, the marginal effect of directors' entrepreneurial experience is positive $\beta_4 = 0.147$ (Eq. 4) and $\beta_4 = 0.154$ (Eq. 9), which implies that a 10% increase in the fraction of directors with holding founder experience increase institutional investment by 1.5%. In other words, a change of 1 director out of a board of 10 members, will imply that independent investor holdings increase by around 150 base points. This finding suggests that independent investors are

concerned largely with director relational capital to overhaul firm business opportunities and the provision of resources.

At the same time, independent investors dislike directors with experience in the public sector $(\beta_5 = -0.157 \ (Eq. 9))$. Grey investors do not show a solid relationship with director professional profiles (Table II - Eq. 9). These coefficients are significant at the 5% level.

Third, institutional investors have asymmetric preferences regarding gender diversification within boards. Grey investor ownership exhibits a positive marginal effect $\beta_6 = 0.147$ (Eq. 6) and $\beta_6 = 0.03$ (Eq. 9) [Table II]. In contrast, for independent investors that coefficient is negative $\beta_6 = -0.163$ (Eq. 6) and $\beta_6 = -0.138$ (Eq. 9) [Table III]

Foreign directors are important for grey investors $\beta_7 = 0.019$ (Eq. 9) [Table II]. For independent investors the effect is negative $\beta_7 = -0.047$ (Eq. 7) but this variable turns out to be statistically non-significant once the regression includes all explanatory variables in Eq.9

Different boards are characterized by appointing women and/or foreign directors. This finding is consistent with the agency view that highlights directors' ability to apply monitoring that fosters positive changes on firm corporate governance. In other words, our results show that grey investors are concerned with internal corporate governance mechanisms and effective director monitoring in firms they invest in. In contrast, independent investor ownership is indifferent in most cases with human capital variables and board nationality diversification. They dislike or simply do not believe in the benefits of board gender diversification. This result is in line with the main findings of studies on mandatory female quota policy (Ahern and Dittmar, 2012).

The above results validate the expected relation that board capital variables matter in explaining institutional investor holdings. Grey investors are concerned with the monitoring role of directors and independent investors and focus on business opportunities related to better

director relational capital in the provision of resources.   The findings also validate the conjecture that preferences for boards' composition in terms of educational, professional, and demographics are asymmetric by type of institutional investor.

Fourth, the ratio of outside directors is statistically significant for grey institutional ownership. This variable is a proxy of board-aligned incentives with non-controlling blockholders and minority interests. Less dependent boards imply that directors conduct better monitoring with a clear impact on managerial choices and corporate best practices. Table II shows that this variable is statistically significant in 4 out of 7 regressions. This marginal effect is $\beta_8 = 0.032$, on average, which implies that with the appointment of 1 outside director in a board of ten members, grey investors will increase their holdings by 300 base points.

The CEO-CEOB dummy that captures discretionary management power and board turnover (proxy for director entrenchment) does not have explanatory power as a determinant for grey institutional ownership. This result is the opposite to the one expected. On the other hand, independent investors are indifferent, but with all board structure variables (Table III).

[TABLE II AND III HERE]

3.2. Blockholder contestability, firm financial and macro controls.

The base regressions show evidence regarding asymmetric or common preferences with respect to blockholder contestability, firm financial and macroeconomic variables (the control variables in the baseline estimation). Asset managers have asymmetric preferences on blockholder control contestability. The less dispersed the voting power among top shareholders, the higher their ownership presence for independent investors. Blockholder contestability limit tunneling and related transactions by means of exerting direct monitoring and undertaking forward looking investor activism. Thus, the capacity to control the largest shareholder becomes crucial for firm

governance since asset funds are, in most cases, the second or third voting block across firms in the region.

Firm financial controls show partial evidence of the direction of institutional investor preferences. Results show that grey institutional holdings increase with firm size. Nonetheless, institutional ownership is negatively correlated to stock liquidity, and this is not the expected result. Firm value studies have shown that stock turnover is important in explaining firm Tobin-Q in emerging markets and Latin America in particular (Pombo and Taborda, 2017). Asset tangibility does not seem to be relevant for grey investors and is negatively correlated with trust/mutual funds investment. This outcome is also opposite to the expected direction since tangibility is a proxy for firm collateral and solid control for firm investment ratios (Almeida and Campello, 2007). The above coefficients are significant at the 5% level.

Among the macroeconomic variables, the EMBI index has a negative effect on institutional ownership regardless of the type. This variable is a proxy for a country's risk. In addition, the property index gap with respect the U.S. is statistically significant and with the expected sign, $\beta_{18} = -0.045$, only for grey institutions; thus, the lower the gap, the higher the grey institutional ownership.

The regressions include industry and country dummies in order to capture non-observable effects at such levels. All estimation results favor the firm level specification in contrast to a pooled regression, given that the *Breuch and Pagan* test rejects the pooled model in favor of a panel data specification. In addition, the *Hausman* specification test does not reject the null hypothesis that the random effects specification is the true model for all cases. P-values are far above the 10% critical value in all regressions. Standard errors control for heteroscedasticity

using the Huber-White sandwich estimator for variance, clustered on firm level identifier.[10]

Thus, the empirical model keeps all time-invariant factors such as the directors' educational and professional background in the model.

4. Robustness analysis

This section presents the robustness analysis to examine the consistency of the baseline model and rule out potential endogeneity issues. To check regression consistency, we conducted four complementary empirical analyses and estimations: i) cross sample tests, ii) random effects model with lags for all board capital variables, iii) difference on lagged difference regressions, and iv) board capital score factor indices regressions against the lag of institutional ownership and firm specific-controls.

4.1 Cross sample tests

Cross sample tests reveal investors' preferences when firms differ at financial and operative levels. These tests sort the sample according to key variables regarding firm profitability, size, and collateralization. We ran estimates at the 33rd and 66th distribution percentiles for each splitting criteria by investor type. **Table IV** summarizes the main results. We can highlight the following outcomes. First, grey institutional ownership sensitivity to director with master's degree ratio is positively correlated for the sample of firms with low ROA ($\beta_1 = 0.043$). This marginal effect is significant for either low or high asset tangibility ratios subsamples. However, grey investor holdings decrease within small firms (β_1=-0.026). This result can reflect that appointing highly educated directors is costly for small firms. Independent institutional

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[10] We also control (not show) by firm and year effects (dummies for each year) but results were less robust. This outcome is explained because in the baseline model we are controlling by macroeconomic variables that capture as well time effects.

investors are indifferent to educational attributes. Second, independent institutional ownership becomes highly sensitive to positive changes in appointing directors with founder experience within the subsamples of low ROA and low asset tangibility firms. Indeed, the marginal effect doubles for low ROA firms ($\beta_4 = 0.361$) and it is 1.32 times greater within firms with low collateral ($\beta_4 = 0.20$) with respect the baseline regression coefficient. This result is consistent with the financial constraints predictions. Firms with poor performance and low collateral are prone to face restrictions in credit borrowing or access to debt markets. Grey investor holdings are positively correlated to this attribute only for the sample of firms with high levels of tangible assets. One can understand this result as being linked with growth opportunities. Large firms grow more slowly than small enterprises, and this is explained by factors such as diseconomies of scope and scale.

Third, independent investors' ownership becomes much more sensitive to increases in the fraction of female directors within the subsamples of large firms with high performance (ROA) and collateral. This result coincides with studies that have evaluated the mandatory quota for female directors in Norway. The result is saying that the perception of mutual/hedge fund managers and investor advisers is negative and perhaps related with the fact that in the region, the market for female directors is much more restricted than that for male directors. The fraction of female directors in our sample is 7%. For the S&P 500 companies, female directors represented around 26% (36%) in 2012 (2017) according to the Spencer-Stuart board index report. Grey investors with holdings in high tangibility firms are positively related to the appointment of foreign directors, which reinforces the monitoring argument as those directors bring international networks to local firms and they bear the responsibility in cases of aligning corporate polices and milestones of subsidiary firms to their parent companies' interests.

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Hence, the cross sample estimates validate the direction and significance regarding institutional ownership preferences for board capital and demographic variables of the baseline regression.

[TABLE IV HERE]

4.2 Endogeneity analysis

The baseline estimation faces a potential endogeneity issue related to reverse causality. One might think, institutional investors give shape to the board capital variables. Although in previous sections we have outlined how the nature of the explanatory variables is set ex-ante to the presence of institutional investors, we cannot arbitrarily assume exogeneity and must, instead, rely on alternative checks. Therefore, the purpose of this section is to examine whether the previously reported results hold when conducting this analysis for causality.

The paper's main line of argument is that board capital and demographics explain institutional investor holdings (institutions only buy the companies that satisfy their board composition requirements/tastes/preferences) in this case study given for Latin America, where equity market structure and country's law investor protection levels differs from developed countries. Nonetheless, reverse causality might arise from institutional investor activism in demanding qualified and heterogeneous boards, enhancing director monitoring and counseling duties, once they hold a sensible ownership share. Another concern in the relationship between board attributes and institutional ownership is that findings are influenced for non-observable variables that explain institutional ownership (omitted variable bias).

Thus, asking whether board capital changes can be explained by institutional ownership changes is a valid question. Directors' attributes are time invariant variables and at firm-year level of board capital indicators, they exhibit low variation. In this sense, using an instrumental variables approach would be a weak approach since instruments would suffer the same problem

(low variation) as the instrumented regressor (Himmelberg *et al.*, 1999). In terms of the instrumental variables approach, there is no instrument that strongly explain board of directors' attributes and demographic characteristics and, simultaneously, not be correlated with institutional ownership. However, to address this concern, we performed three different alternative estimates with the purpose of providing grounds in favor of the reported estimations based on the exogenous nature of board capital and demographics variables as firm quasi-fixed inputs in the institutional ownership equation. What follows analyzes the results of those exogeneity examinations.

4.2.1 One-year lag on board capital variables

The first endogeneity check is to estimate the baseline equation using one-year lag for the variables related with board capital and demographics[11]. The main results are displayed in **Table V**. The econometric estimates are in line with the contemporaneous regressions regarding the findings of institutions' equity holdings by total institutional ownership and by investor type. The marginal effect on shares owned by grey institutional investors is positive when firm boards show high fractions of female members and directors with graduate studies. Not having members with law or business degrees reduces the shares owned by independent institutional investors, as does having members with previous posts in the public sector or high fractions of female directors. Independent institutional ownership shows high positive sensitivity to directors with entrepreneurial profiles; that is, whether directors have been company founder partners.

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[11] The statistical argument of this test lies in the empirical identification for linear models of whether a covariate x_{it} is endogenous, meaning that the explanatory variable is correlated with the value of the regression residual ε_{it}. Substituting for the lag $x_{i,t-1}$, there is no correlation with the contemporaneous value of the residual. That is $cov(x_{i,t-1}, \varepsilon_{it}) = 0$, which satisfies the exogeneity condition.

[TABLE V HERE]

4.2.2 Difference on lagged differences

The results of the baseline random effects regressions provide evidence that board capital and demographic variables can explain the extent of institutional investments due to better oversight to management by the board and information disclosure by insiders due to provision resources through directors' relational networks. To examine the robustness of such inferences, we also conduct a difference on lagged differences estimation as used in the board heterogeneity study by Anderson *et al.* (2011) and on the dynamics of institutional ownership and firm corporate governance indices by Aggarwal *et al.* (2011). The equation to be estimated is:

$$\Delta IOWN_t = \Delta BC_{t-k} + \Delta DEM_{t-k} + \Delta BS_{t-k} + \Delta X_{t-k} + \varepsilon_t \qquad (2)$$

where k indicates the lag of the differences of the explanatory variables in the regression. BC is the vector of board capital variables; DEM is the vector of the board demographic variables, BS is the vector that includes board structure indicators and **X** stands for the controls that include ownership and firm financial specific variables.

This regression examines whether past changes in board capital and demographic variables affect current changes in institutional investor holdings. In line with the baseline regression, an increase in board capital level over time should increase the level of institutional ownership. Equation 2 includes the set of firm financial and macroeconomic controls.

Table VI presents the main results of the non-contemporaneous difference on lagged difference regressions. Panel A display the regressions of total institutional ownership against the lag in board capital, demographic, and board structure variables. Regressions are broken down by investor type (independent and grey) to see whether asymmetric preferences hold. The results indicate that the one lag difference change in board capital and demographic

variables seems not to have a major influence on the change in institutional ownership in the

short run. Nonetheless, Panel B replicates the above estimation by taking three lags in all

explanatory variables in the model. Results confirm partially that asymmetric preferences and

the direction of board capital and demographic diversity holds. For instance, past changes in

directors with master's degrees and gender diversification will be reflected in changes in grey

investor holdings. Independent investors react negatively to past changes in directors with

political connections with the public sector. The regression in differences shows that past

higher rates in director turnovers will trigger a positive change in grey institutional investor

holdings within a span of 3 years, while for institutional investors this effect is significant

within a one-year lag.[12]

<center>[TABLE VI HERE]</center>

4.2.3 Board capital diversity demand

Another way to approach the causality direction between board capital and institutional

ownership is to perform a regression where board capital is the dependent variable to be

explained by previous institutional ownership:

$$BCDI_{it} = \beta_0 + \beta_k IOWN_{it-k} + \varphi_k \mathbf{X_{it}} + \beta_l \mathbf{I_l} + \beta_j \mathbf{c_j} + \varepsilon_{it} \quad (3)$$

subscripts i stands for firm, l for industry, j for country and t for year. The dependent variable

is a firm *Board Capital Diversity Index (BCDI)*, which relies on factor scores estimates given

a principal component analysis (PCA) with factor loading rotation. The control variables X

include blockholder contestability, firm financial and the macroeconomic variables defined in

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[12] We replicate the model including the differences in all control variables in vector X i.e., ownership, firm financial variables and macroeconomic variables. The results were similar in the coefficient's direction and significance for all board capital and demographic variables.

<center>22</center>

the baseline regression equation. The estimation includes industry and country dummy variables.

Rotated factor scores are a linear combination of the standardized variables incorporating director attributes. Three factors were retained (those with eigenvalues higher than 1), explaining 52% of the variance. For the set of included director attributes of education and professional experience, we identified three factors. Board capital index 1 gives positive loadings to directors with bachelor's and master's degrees in topics other than business and law. Board capital index 2 similarly exhibits high loadings on directors' professional backgrounds -experience as CEO, founder of firms, and experience within the public sector-. Board capital index 3 has the largest weights on director demographic diversity (gender and nationality). Factor loads and score indices are described in the appendix.[13]

Table VII displays the main results of the pooled regression model. Board capital indices, explained by   educational factors (BCDI1), experience profiles (BCDI2) and board demographic structure (BCDI3) are not sensitive to lagged levels of institutional ownership. Institution's shares lagged 1 to 3 years turned out to be statistically non-significant in explaining board capital factor scores for all cases. Thus, the demand for board capital and heterogeneous boards seems to be related to firm specific and macroeconomic variables in the short and mid-term. For instance, higher levels of firm return of assets, income volatility, stock liquidity, and size will demand more board capital (relational and educational). The same positive effect is found with lower levels of country property rights. Board demographic diversity is required to a lesser extent in firms with high liquid stocks and in countries with lower levels of property rights.

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[13] See table A.IV

[TABLE VII HERE]

V. Conclusions

This article examines the effect of board capital (educational and professional backgrounds) on institutional investor equity holdings on real sector listed corporations across the six largest stock markets in Latin America. The estimation results show that institutional investors' choices are asymmetric depending on their monitoring role (grey versus independent investors), whereby grey investors show a preference of directors' attributes related with educational backgrounds, which is not observed in independent investors. Grey institutional ownership is positively related with demographic diversity in terms of gender and presence of foreign directors. Independent institutional investment (trust, mutual funds and investment advisors) is positively related to entrepreneurial experience. Grey investors are not engaged with directors with public sector experience -revealing a conflicting view of politically connected directors-, and present a negative relation to board members with bachelor's degrees in fields other than business or law, as well as the presence of female directors. Grey investor ownership is positively related to independent boards. The mechanism behind our findings is that higher fractions of high quality directors seems to provide the incentives to align directors' duties with shareholder interests by enhancing better monitoring.

In sum, grey ownership responds to voice intervention as blockholders to improve internal corporate governance issues in terms of limiting tunneling, according to the agency view of boards. Independent institutional investors are concerned with firms' business opportunities, in line with the resource-based view of boards of directors. This study provides evidence that highly qualified directors and boards constitute a positive market signal of firms' internal corporate governance that

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becomes a key element in enhancing investor protection in   countries ranked with weak legal investor regimes such as the ones studied in Latin America.

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Table I
Descriptive statistics: Institutional ownership and board related variables

Variable	Obs	Mean	Std.	p50	Min	Max
Panel A Institutional ownership variables - Presence and equity holdings						
Institutional Investor Presence (Dummy)	4702	0.573	0.495	1	0	1
Grey Investor Presence (Dummy)	4706	0.108	0.310	0	0	1
Independent Investor Presence (Dummy)	4706	0.541	0.498	1	0	1
Total institutional ownership	4498	0.204	0.271	0.070	0	1
Grey institutional ownership	4498	0.017	0.077	0.000	0	0.99
Grey institutional ownership*	502	0.155	0.178	0.089	0.05	0.99
Independent institutional ownership	4498	0.187	0.264	0.042	0	1
Independent institutional ownership*	2525	0.337	0.270	0.252	0.05	1
Panel B Board Capital Variables						
Business undergrad ratio	4697	0.281	0.220	0.267	0	1
Law undergrad ratio	4697	0.093	0.128	0	0	0.750
Masters studies ratio	4697	0.232	0.280	0.125	0	1
Undergraduate studies in non business or law	4697	0.183	0.188	0.143	0	1
CEO experience ratio	4420	0.313	0.256	0.286	0	1
Founder experience ratio	4408	0.042	0.089	0	0	0.583
Public sector experience ratio	4418	0.037	0.085	0	0	0.667
Panel C Board Demographic Variables						
Female director ratio	4697	0.067	0.123	0	0	1
Foreign director ratio	4697	0.244	0.250	0.167	0	1
Panel D Board Structure variables						
Board size	4697	9.963	5.020	9.000	2	35
Board turnover annual	4706	0.714	1.369	0	0	19
Board turnover ratio	4697	0.067	0.125	0	0	1
Outsider director ratio	4697	0.770	0.267	0.857	0	1
Independent director ratio	4697	0.121	0.179	0	0	1
Insider-Employee ratio	4697	0.210	0.254	0.125	0	1
CEO-COB Dummy	4706	0.171	0.377	0	0	1

*:/ Refers to the subsamble of firm-year observation with positive equity blockholdings by institutional investors

Notes: This table displays the descriptive statistics of the independent and dependent variables included in baseline regressions from Eq.1 for the total sample. Total firm-year observations with board records are 4697 for the 2001-2011 period. Institutional investor presence is a dummy that takes the value of 1 if there is at least one institutional investor blockholder among the three major shareholders. Grey institutional ownership refers to the equity holdings (shares) held by pension funds and insurance companies that are among the three major shareholders. Independent institutional ownership refers to the equity holdings (shares) held by trust funds, investment firms and investor advisors who are among the three major shareholders. Total institutional ownership is the sum of the equity shares held by institutional investors among the three major shareholders. Complete definitions for the remaining explanatory variables included in the empirical model can be found in Table A.II of the appendix.

Sources: Thomson-Eikon (World Scope), Economatica, companies' annual reports (Internet based) and web pages, regulatory bodies, other Internet sources (i.e., directors' CVs and LinkedIn). Authors' own calculations.

Table II - Grey institutional ownership determinants

Random effects regressions **-** Dependent variable: Grey investor ownership

Variables		Eq1	Eq2	Eq3	Eq4	Eq5	Eq6	Eq7	Eq8	Eq9
Board capital and demographics										
Master sudies ratio	B_1	**0.0286***	...	...	...	...	...	...	**0.0341***	**0.0342***
		(0.011)	...	...	...	...	...	...	(0.009)	(0.011)
Undergrad studies in non business or law fields (ratio)	B_2	...	0.0020	...	...	...	...	...	-0.0078	-0.0034
		...	(0.011)	...	...	...	...	...	(0.010)	(0.011)
CEO experience ratio	B_3	...	...	0.0025	...	...	...	...	-0.0060	-0.0054
		...	...	(0.010)	...	...	...	...	(0.009)	(0.010)
Founder experience ratio	B_4	...	...	...	0.0249	...	...	...	0.0284	0.0182
		...	...	...	(0.022)	...	...	...	(0.020)	(0.022)
Public sector experience ratio	B_5	...	...	...	...	**0.0412**	...	...	**0.0456**	0.0305
		...	...	...	...	(0.021)	...	...	(0.020)	(0.022)
Female director ratio	B_6	...	...	...	...	...	**0.0264***	...	**0.0302**	**0.0301***
		...	...	...	...	...	(0.016)	...	(0.014)	(0.015)
Foreign director ratio	B_7	...	...	...	...	...	...	0.0116	**0.0221***	**0.0191**
		...	...	...	...	...	...	(0.009)	(0.008)	(0.009)
Board structure										
Outside director ratio	B_8	0.0321***	0.0347***	0.0184	0.0208*	0.0174	0.0343***	0.0349***	...	0.0186
		(0.011)	(0.011)	(0.012)	(0.012)	(0.011)	(0.011)	(0.011)	...	(0.012)
Board turnover ratio	B_9	0.0008	0.0002	-0.0021	-0.0024	-0.0019	0.0002	-0.0001	...	-0.0022
		(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	...	(0.007)
CEO-COB Dummy	B_{10}	0.0056	0.0057	0.0045	0.0043	0.0044	0.0060	0.0057	...	0.0050
		(0.005)	(0.005)	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)	...	(0.004)
Blockholder contestability										
Herfindahl Differences Index	B_{11}	-0.0154**	-0.0153**	-0.0168***	-0.0165***	-0.0177***	-0.0154**	-0.0153**		-0.0179***
		(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)		(0.006)
Firm Financial										
Return On Assets	B_{12}	-0.0051	-0.0044	-0.0045	-0.0037	-0.0052	-0.0044	-0.0044	...	-0.0058
		(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	...	(0.010)
Operating Income Volatility	B_{13}	-2.86E-06	-3.28E-06	-3.27E-06	-3.23E-06	-3.14E-06	3.41E-06	-3.43E-06	...	-2.70E-06
		(4.47e-06)	(4.47e-06)	(4.21e-06)	(4.21e-06)	(4.20e-06)	(4.47e-06)	(4-47e-06)	...	(4.22e-06)
Firm Size	B_{14}	0.0034**	0.0043***	0.0034**	0.0034**	0.0030**	0.0045***	0.0043***	...	0.0025*
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	...	(0.001)
Firm Beta	B_{15}	-0.0009	-0.0009	-0.0008	-0.0006	-0.0008	-0.0010	-0.0010	...	-0.0006
		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	...	(0.002)

Table II (Cont.) - Grey institutional ownership determinants

Random effects regressions - Dependent variable: Grey investor ownership

Variables		Eq1	Eq2	Eq3	Eq4	Eq5	Eq6	Eq7	Eq8	Eq9
Firm Financial										
Tangibility	B_{16}	0.0106	0.0099	0.0096	0.0102	0.0097	0.0101	0.0097	...	0.0109
		(0.008)	(0.008)	(0.007)	(0.007)	(0.007)	(0.008)	(0.008)	...	(0.007)
Stock turnover p75 Dummy	B_{17}	-0.0103***	-0.0098***	-0.0103***	-0.0104***	-0.0106***	-0.0097***	-0.0099***	...	-0.0111***
		(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	...	(0.003)
Macroeconomic										
Property rights index w.r.t US	B_{18}	-0.0466**	-0.0447**	-0.0218	-0.0220	-0.0230	-0.0443**	-0.0447**	...	-0.0229
		(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	...	(0.019)
EMBI	B_{19}	-0.0224	-0.0239*	-0.0553***	-0.0562***	-0.0540***	-0.0239*	-0.0246*	...	-0.0526***
		(0.014)	(0.014)	(0.018)	(0.018)	(0.018)	(0.014)	(0.014)	...	(0.018)
Market Capitalization (% of GDP)	B_{20}	-3.92E-05	-3.82E-05	-3.78E-05	-3.90E-05	-3.72E-05	-4.12E-05	-3.69E-05	...	-3.89E-05
		(4.40e-05)	(4.41e-05)	(4.26e-05)	(4.27e-05)	(4.26e-05)	(4.41e-05)	(4.41e-05)	...	(4.27e-05)
Constant		0.0507***	0.0447**	0.0371*	0.0397*	0.0390*	0.0426**	0.0437**	0.0501***	0.0406*
		(0.019)	(0.019)	(0.020)	(0.021)	(0.020)	(0.019)	(0.019)	(0.016)	(0.021)
Regression statistics										
Observations		3,776	3,776	3,577	3,565	3,575	3,776	3,776	4,227	3,565
Number of firms		409	409	389	387	388	409	409	412	387
R2-Overall		0.0408	0.0378	0.0198	0.0197	0.0167	0.0374	0.0384	0.022	0.0234
R2-between		0.0628	0.056	0.0304	0.0321	0.0241	0.0562	0.0573	0.0354	0.0422
chi2		80.53	73.03	53.76	56.14	57.61	75.74	74.68	52.11	78.58
p-value		[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Lagrange test Pooled vs RE Model		6548.1	6528.1	5353.4	5350.7	5338.4	6538.9	6535.7	6253.9	5305.3
p-value		[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Hausman Test - RE model is efficient		10.49	10.45	8.27	10.88	14.29	8.96	8.6	18.28	21.83
p-value		[0.7259]	[0.7286]	[0.8746]	[0.6207]	[0.3536]	[0.8334]	[0.8561]	[0.1008]	[0.2396]
Industry dummy		yes	yes	yes	yes	yes	yes	yes	yes	yes
Country dummy		yes	yes	yes	yes	yes	yes	yes	yes	yes

Notes: This table displays the random effects regressions of baseline Eq1 for grey institutional ownership taking into account board capital and demographic variables individually and pooled. Grey institutional ownership refers to the equity holdings (shares) held by pension funds and insurance companies among the three major shareholders. Total institutional ownership is the sum of the equity shares held by institutional investors among the three major shareholders. Complete definitions for the remaining explanatory variables can be found in Table A.II of the appendix. Robust standard errors clustered by ID-firm (White Hubbert) in parenthesis; ***, **, and * represent significance levels of 1%, 5%, and 10% respectively

Table III - Independent institutional ownership determinants

Random effects regressions - Dependent variable: Independent investor ownership

Variables		Eq1	Eq2	Eq3	Eq4	Eq5	Eq6	Eq7	Eq8	Eq9
Board capital and demographics										
Master sudies ratio	B_1	0.0200	...	...	...	...	...	...	**0.0561****	0.0221
		(0.032)	...	...	...	...	...	...	(0.028)	(0.034)
Undergrad studies in non business or law fields (ratio)	B_2	...	**-0.0567***	...	...	...	...	...	-0.0121	**-0.0637***
		...	(0.034)	...	...	...	...	...	(0.031)	(0.035)
CEO experience ratio	B_3	...	...	0.0260	...	...	...	...	-0.0002	0.0179
		...	...	(0.031)	...	...	...	...	(0.028)	(0.033)
Founder experience ratio	B_4	...	...	...	**0.1469****	...	...	...	**0.1542****	**0.1537****
		...	...	...	(0.070)	...	...	...	(0.065)	(0.071)
Public sector experience ratio	B_5	...	...	...	...	-0.0966	...	...	**-0.1405****	**-0.1576****
		...	...	...	...	(0.064)	...	...	(0.064)	(0.069)
Female director ratio	B_6	...	...	...	...	...	**-0.1636*****	**...**	-0.0589	**-0.1381*****
		...	...	...	...	...	(0.048)	**...**	(0.046)	(0.049)
Foreign director ratio	B_7	...	...	...	...	...	**...**	**-0.0473***	-0.0256	-0.0272
		...	...	...	...	...	**...**	(0.027)	(0.026)	(0.029)
Board structure										
Outside director ratio	B_8	0.0034	-0.0032	0.0079	0.0082	-0.0018	0.0049	0.0024	...	0.0064
		(0.033)	(0.034)	(0.038)	(0.037)	(0.036)	(0.033)	(0.033)	...	(0.039)
Board turnover ratio	B_9	0.0132	0.0120	0.0216	0.0207	0.0198	0.0127	0.0138	...	0.0204
		(0.020)	(0.020)	(0.021)	(0.021)	(0.021)	(0.020)	(0.020)	...	(0.021)
CEO-COB Dummy	B_{10}	0.0001	0.0008	-0.0007	-0.0012	0.0010	-0.0016	-0.0001	...	-0.0017
		(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	...	(0.013)
Blockholder contestability										
Herfindahl Differences Index	B_{11}	0.0681***	0.0696***	0.0739***	0.0753***	0.0765***	0.0686***	0.0684***	...	0.0807***
		(0.018)	(0.018)	(0.019)	(0.019)	(0.019)	(0.018)	(0.018)	...	(0.019)
Firm Financial										
Return On Assets	B_{12}	0.0217	0.0228	0.0415	0.0479*	0.0429	0.0220	0.0217	...	0.0506*
		(0.028)	(0.028)	(0.029)	(0.029)	(0.029)	(0.028)	(0.028)	...	(0.029)
Operating Income Volatility	B_{13}	3.97e-05***	3.81e-05***	3.96e-05***	4.0e-05***	3.92e-05***	3.97e-05***	3.97e-05***	...	3.86e-05***
		(1.26e-05)	(1.26e-05)	(1.25e-05)	(1.25e-05)	(1.25e-05)	(1.26e-05)	(1.26e-05)	...	(1.25e-05)
Firm Size	B_{14}	-0.0045	-0.0031	-0.0058	-0.0055	-0.0043	-0.0049	-0.0042	...	-0.0054
		(0.004)	(0.004)	(0.005)	(0.004)	(0.004)	(0.004)	(0.004)	...	(0.005)
Firm Beta	B_{15}	0.0014	0.0015	0.0020	0.0034	0.0019	0.0014	0.0016	...	0.0036
		(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	...	(0.006)

Table III (Cont.)- Independent institutional ownership determinants

Random effects regressions Dependent variable: Independent investor ownership

Variables		Eq1	Eq2	Eq3	Eq4	Eq5	Eq6	Eq7	Eq8	Eq9
Firm Financial										
Tangibility	B_{16}	-0.0752***	-0.0784***	-0.0641***	-0.0600***	-0.0650***	-0.0788***	-0.0754***	...	-0.0659***
		(0.022)	(0.022)	(0.023)	(0.023)	(0.023)	(0.022)	(0.022)	...	(0.023)
Stock turnover p75 Dummy	B_{17}	-0.0210***	-0.0200***	-0.0190**	-0.0191**	-0.0180**	-0.0213***	-0.0203***	...	-0.0181**
		(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	...	(0.008)
Macroeconomic										
Property rights index w.r.t US	B_{18}	-0.0979*	-0.1006*	-0.0541	-0.0512	-0.0509	-0.1007*	-0.0969*	...	-0.0593
		(0.052)	(0.052)	(0.056)	(0.056)	(0.056)	(0.052)	(0.052)	...	(0.056)
EMBI	B_{19}	-0.1045***	-0.1085***	-0.0814	-0.0820	-0.0870*	-0.1060***	-0.1033***	...	-0.0928*
		(0.039)	(0.039)	(0.051)	(0.051)	(0.051)	(0.038)	(0.039)	...	(0.051)
Market Capitalization (% of GDP)	B_{20}	1.31E-04	1.34E-04	1.46E-04	1.46E-04	1.50E-04	1.50E-04	1.27E-04	...	1.56E-04
		(1.22e-04)	(1.22e-04)	(1.24e-04)	(1.24e-04)	(1.25e-04)	(1.21e-04)	(1.22e-04)	...	(1.24e-04)
Constant		0.3278***	0.3306***	0.2505***	0.2462***	0.2541***	0.3394***	0.3303***	0.1612**	0.2684***
		(0.065)	(0.065)	(0.076)	(0.077)	(0.076)	(0.065)	(0.064)	(0.063)	(0.078)
Regression statistics										
Observations		3,776	3,776	3,577	3,565	3,575	3,776	3,776	4,227	3,565
Number of firms		409	409	389	387	388	409	409	412	387
R2-Overall		0.077	0.078	0.074	0.079	0.076	0.077	0.070	0.075	0.081
R2-between		0.097	0.098	0.097	0.100	0.100	0.096	0.090	0.102	0.102
chi2		109.9	112.4	95.0	98.9	96.6	121.4	112.7	61.4	117.1
p-value		[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Lagrange test Pooled vs RE Model		8206.0	8196.7	7645.8	7572.5	7643.3	8204.7	8109.5	9998.0	7493.8
p-value		[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Hausman Test - RE model is efficient		9.10	9.57	11.93	9.73	8.44	10.39	16.61	5.36	12.62
p-value		[0.824]	[0.793]	[0.612]	[0.715]	[0.814]	[0.733]	[0.218]	[0.616]	[0.857]
Industry dummy		yes	yes	yes	yes	yes	yes	yes	yes	yes
Country dummy		yes	yes	yes	yes	yes	yes	yes	yes	yes

Notes: This table displays the random effects regressions of baseline Eq1 for independent institutional ownership taking into account board capital and demographic variables individually and pooled. Independent institutional ownership refers to the equity holdings (shares) held by trust funds, investment firms and investor advisors among the three major shareholders. Total institutional ownership is the sum of the equity shares held by institutional investors among the three major shareholders. Complete definitions for the remaining explanatory variables can be found in Table A.II of the appendix. Robust standard errors clustered by ID-firm (White Hubbert) in parenthesis; ***, **, and * represent significance levels of 1%, 5%, and 10% respectively

Table IV – Cross sectional tests by ROA, asset tangibility and firm size by investor type

Dependent variable: Independent investor ownership (Random effects regressions)

Variables		Total Grey Eq1	ROA p33 Eq2	ROA p66 Eq3	Tang. p33 Eq4	Tang. p66 Eq5	Size p33 Eq6	Size p66 Eq7	Total Indep Eq8	ROA p33 Eq9	ROA p66 Eq10	Tang. p33 Eq11	Tang. p66 Eq12	Size p33 Eq13	Size p66 Eq14
Board capital and demographics						Grey investors						Independent investors			
Master sudies ratio	B_1	0.0342***	0.0453***	0.0266	0.0330**	0.0419**	-0.0263***	0.0335	0.0221	-0.0493	0.0260	0.0432	0.0189	0.0092	-0.0169
		(0.011)	(0.013)	(0.021)	(0.016)	(0.017)	(0.009)	(0.023)	(0.034)	(0.056)	(0.063)	(0.064)	(0.061)	(0.078)	(0.058)
Undergrad studies in non business or law fields (ratio)	B_2	-0.0034	0.0121	-0.0300	-0.0331**	0.0125	-0.0019	-0.0204	-0.0637*	-0.0031	-0.0964	-0.0495	-0.0323	-0.0630	0.0410
		(0.011)	(0.012)	(0.022)	(0.015)	(0.019)	(0.006)	(0.024)	(0.035)	(0.054)	(0.062)	(0.056)	(0.068)	(0.055)	(0.059)
CEO experience ratio	B_3	-0.0054	0.0154	0.0001	-0.0002	-0.0328**	0.0058	-0.0080	0.0179	-0.0206	-0.0535	0.0973	0.0462	-0.1410**	-0.0856
		(0.010)	(0.012)	(0.020)	(0.016)	(0.016)	(0.007)	(0.022)	(0.033)	(0.053)	(0.058)	(0.060)	(0.056)	(0.060)	(0.055)
Founder experience ratio	B_4	0.0182	0.0086	-0.0124	0.0162	0.1502***	0.0027	0.0478	0.1537**	0.3612***	-0.0469	0.2034*	0.2182	0.1521	0.0344
		(0.022)	(0.021)	(0.050)	(0.029)	(0.043)	(0.014)	(0.055)	(0.071)	(0.095)	(0.153)	(0.108)	(0.147)	(0.120)	(0.135)
Public sector experience ratio	B_5	0.0305	-0.0220	-0.0405	-0.0785**	0.0842***	0.0012	-0.0408	-0.1576**	-0.0581	-0.0828	-0.0595	-0.1721	-0.2435	-0.0422
		(0.022)	(0.026)	(0.044)	(0.039)	(0.030)	(0.020)	(0.039)	(0.069)	(0.116)	(0.123)	(0.147)	(0.109)	(0.187)	(0.092)
Female director ratio	B_6	0.0301*	0.0098	0.0255	0.0351	0.0123	-0.0060	0.0904**	-0.1381***	-0.0720	-0.1669**	-0.1679*	-0.2812***	0.0117	-0.3432***
		(0.015)	(0.019)	(0.026)	(0.025)	(0.026)	(0.008)	(0.042)	(0.049)	(0.083)	(0.080)	(0.092)	(0.091)	(0.069)	(0.096)
Foreign director ratio	B_7	0.0191**	0.0040	0.0197	0.0003	0.0408***	-0.0025	0.0306	-0.0272	-0.0578	0.0013	-0.0708	0.0313	0.0626	0.0454
		(0.009)	(0.011)	(0.015)	(0.013)	(0.014)	(0.005)	(0.019)	(0.029)	(0.051)	(0.046)	(0.051)	(0.048)	(0.047)	(0.048)
Board structure															
Outside director ratio	B_8	0.0186	0.0304**	0.0427*	0.0225	0.0173	0.0091	0.0438	0.0064	-0.0457	-0.0062	-0.0117	0.0644	-0.1924***	0.1510**
		(0.012)	(0.013)	(0.025)	(0.018)	(0.019)	(0.008)	(0.029)	(0.039)	(0.059)	(0.075)	(0.069)	(0.068)	(0.072)	(0.073)
Board turnover ratio	B_9	-0.0022	-0.0087	0.0026	-0.0169	0.0027	0.0004	-0.0003	0.0204	0.0291	0.0640	-0.0108	0.0118	0.0625*	0.0207
		(0.007)	(0.008)	(0.019)	(0.014)	(0.010)	(0.003)	(0.018)	(0.021)	(0.034)	(0.043)	(0.041)	(0.038)	(0.033)	(0.038)
CEO-COB Dummy	B_{10}	0.0050	0.0149***	0.0108	0.0113	0.0010	-0.0007	0.0073	-0.0017	-0.0613***	0.0033	-0.0830***	0.0091	0.0346	0.0062
		(0.004)	(0.005)	(0.010)	(0.007)	(0.007)	(0.002)	(0.009)	(0.013)	(0.021)	(0.027)	(0.025)	(0.025)	(0.022)	(0.020)
Blockholder contestability															
Herfindahl Differences Index	B_{11}	-0.0179***	-0.0297***	-0.0100	0.0065	-0.0212***	-0.0051	-0.0009	0.0807***	0.0743**	0.0204	0.1806***	0.1884***	0.3408***	-0.0001
		(0.006)	(0.008)	(0.014)	(0.012)	(0.008)	(0.003)	(0.014)	(0.019)	(0.035)	(0.039)	(0.044)	(0.030)	(0.032)	(0.034)
		…	…	…	…	…	…	…	…	…	…	…	…	…	…
Financial and Macro Controls		yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry dummy		yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Country dummy		yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations		3565	1170	1251	1198	1188	1119	1283	3565	1170	1251	1198	1188	1119	1283
N-Firms		387	256	275	204	195	161	182	387	256	275	204	195	161	182
R2-Overall		0.0234	0.0589	0.0619	0.0559	0.0181	0.0533	0.0416	0.0806	0.0987	0.0877	0.098	0.151	0.0948	0.123
R2--Between		0.0422	0.0586	0.0667	0.0898	0.00477	0.0326	0.0714	0.102	0.137	0.0741	0.102	0.138	0.101	0.132
Chi2		78.58	71.34	38.29	62.52	66.52	48.8	53.49	117.1	67.02	67.79	102.6	120.7	210.8	86.8
p-value		[0.000]	[0.000]	[0.0733]	[0.0001]	[0.000]	[0.0063]	[0.0018]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]

Notes: This table displays cross tests of baseline Eq1 for institutional ownership by investor type splitting the sample by return of assets, size and asset tangibility at the 33rd and 66th percentiles cut-off points. Regressions include financial firm specific and macroeconomic controls as well as industry and country dummies (no displayed). Total institutional ownership is the sum of the equity shares held by institutional blockholder investors among the three major shareholders. Complete definitions for the remaining explanatory variables can be found in Table A.II of the appendix. Robust standard errors clustered by ID-firm (White Hubbert) in parenthesis; ***, **, and * represent significance levels of 1%, 5%, and 10% respectively.

Table V – Institutional equity holdings with lagged board capital and demographic variables
Random Effects Regressions – Dependent variable: Institutional investor ownership

VARIABLES		Grey Investor	Indep Investor	Total Iown
Board capital and demographics		Eq1	Eq2	Eq3
Lag-Master sudies ratio	B1	0.0275**	0.0309	-0.0183
		(0.012)	(0.037)	(0.038)
Lag-Undergrad studies in non	B2	-0.0132	-0.0717*	-0.0191
		(0.012)	(0.037)	(0.038)
Lag-CEO experience ratio	B3	-0.0013	-0.0081	-0.0256
		(0.011)	(0.035)	(0.035)
Lag-Founder experience ratio	B4	0.0119	0.2505***	0.0640
		(0.024)	(0.077)	(0.078)
Lag-Public sector experience ratio	B5	0.0260	-0.2020***	-0.0944
		(0.024)	(0.076)	(0.079)
Lag-Female director ratio	B6	0.0440***	-0.0936*	-0.1350**
		(0.017)	(0.054)	(0.055)
Lag-Foreign director ratio	B7	0.0152	-0.0193	-0.0033
		(0.009)	(0.030)	(0.031)
Board structure				
Outside director ratio	B8	0.0238*	0.0004	0.0705*
		(0.013)	(0.040)	(0.041)
Board turnover ratio	B9	-0.0064	0.0288	0.0137
		(0.008)	(0.022)	(0.023)
CEO-COB Dummy	B10	0.0103**	-0.0025	0.0360**
		(0.005)	(0.014)	(0.014)
Blockholder contestability				
Herfindahl Differences Index	B11	-0.0175***	0.0701***	-0.0207
		(0.007)	(0.020)	(0.021)
Firm Financial				
Return On Assets	B12	-0.0076	0.0507*	0.0439
		(0.010)	(0.030)	(0.032)
Operating Income Volatility	B13	-0.0000	0.0000***	0.0000***
		(0.000)	(0.000)	(0.000)
Firm Size	B14	0.0027*	-0.0036	-0.0070
		(0.001)	(0.005)	(0.005)
Firm Beta	B15	-0.0005	0.0026	0.0016
		(0.002)	(0.007)	(0.007)
Tangibility	B16	0.0112	-0.0640***	-0.0177
		(0.008)	(0.024)	(0.025)
Stock turnover p75 Dummy	B17	-0.0100***	-0.0198**	-0.0091
		(0.003)	(0.008)	(0.009)
Macroeconomic				
Property rights index w.r.t US	B18	0.0033	-0.0886	-0.1986***
		(0.022)	(0.063)	(0.067)
EMBI	B19	-0.0592***	-0.0828	-0.0719
		(0.018)	(0.053)	(0.056)
Market Capitalization (% of GDP)	B20	-0.0001	0.0002	0.0000
		(0.000)	(0.000)	(0.000)
Constant		0.0342	0.2658***	0.2798***
Regression statistics				
Observations		3,323	3,323	3,323
Number of firms		386	386	386
R2-Overall		0.0237	0.0846	0.0696
R2-between		0.0413	0.103	0.0942
chi2		74.16	110	94.19
p-value		[0.000]	[0.000]	[0.000]
Industry dummy		yes	yes	yes
Country dummy		yes	yes	yes

Notes: This table displays the random effects regressions of baseline Eq1 with lagged board capital and director demographic variables for total institutional ownership and by type of investor (Grey vs. Independent). Grey institutional ownership refers to the equity holdings (shares) held by pension funds and insurance companies among the three major shareholders. Independent institutional ownership refers to the equity holdings (shares) held by trust funds, investment firms and investor advisors among the three major shareholders. Total institutional ownership is the sum of the equity shares held by institutional investors among the three major shareholders. Robust standard errors clustered by ID-firm (White Hubbert) in parenthesis; ***, **, and * represent significance levels of 1%, 5%, and 10% respectively.

Table VI - Non-Contemporaneous - Differences on Differences Regressions
Dependent variable: Δ institutional ownership

		Δii_shares Total	Δii_shares Grey	Δii_shares Indep.		Δii_shares Total	Δii_shares Grey	Δii_shares Indep.
Panel A - One Lag		Eq1	Eq2	Eq3	**Panel B - Three Lags**	Eq3	Eq4	Eq5
Board capital and demographics					**Board capital and demographics**			
Δt-1 Master sudies ratio	B_1	-0.0072	-0.0216	0.0249	Δt-3 Master sudies ratio	-0.044	0.0492*	-0.0262
		(0.055)	(0.025)	(0.062)		(0.073)	(0.030)	(0.067)
Δt-1 Undergrad studies in non business or law fields (ratio)	B_2	-0.0602*	-0.004	-0.0061	Δt-3 Undergrad studies in non business or law fields (ratio)	-0.0046	-0.0172	-0.0849
		(0.035)	(0.011)	(0.042)		(0.065)	(0.025)	(0.087)
Δt-1 CEO experience ratio	B_3	0.018	0.0147	0.0108	Δt-3 CEO experience ratio	0.0445	0.0453	0.0336
		(0.049)	(0.015)	(0.041)		(0.056)	(0.040)	(0.071)
Δt-1 Founder experience ratio	B_4	0.0463	-0.0191	0.025	Δt-3 Founder experience ratio	0.0271	-0.0015	0.0365
		(0.100)	(0.017)	(0.120)		(0.142)	(0.037)	(0.146)
Δt-1 Public sector experience ratio	B_5	-0.0484	-0.0343	-0.0563	Δt-3 Public sector experience ratio	-0.1678	-0.0249	-0.2237*
		(0.113)	(0.021)	(0.098)		(0.119)	(0.031)	(0.122)
Δt-1 Female director ratio	B_6	0.0242	0.0459	0.0738	Δt-3 Female director ratio	0.0522	0.0430*	0.1672
		(0.054)	(0.037)	(0.060)		(0.116)	(0.024)	(0.141)
Δt-1 Foreign director ratio	B_7	-0.1041**	0.0048	-0.1198*	Δt-3 Foreign director ratio	-0.0535	0.0016	-0.0418
		(0.049)	(0.011)	(0.064)		(0.070)	(0.020)	(0.071)
Board structure					**Board structure**			
Δt-1 Outside director ratio	B_8	-0.0319	-0.0196	0.0196	Δt-3 Outside director ratio	0.0425	0.0662	-0.0943
		(0.047)	(0.013)	(0.070)		(0.065)	(0.057)	(0.087)
Δt-1 Board turnover ratio	B_9	-0.0009	0.0007**	-0.0004	Δt-3 Board turnover ratio	0.0022	-0.0007	0.0024*
		(0.001)	(0.000)	(0.001)		(0.002)	(0.001)	(0.001)
Δt-1 CEO-COB Dummy	B_{10}	-0.0149	-0.0045*	0.0009	Δt-3 CEO-COB Dummy	0.0175	-0.009	0.0044
		(0.022)	(0.003)	(0.022)		(0.015)	(0.013)	(0.028)
Constant		0.0004	0.0004	0.0022	Constant	-0.0023	0.0004	0.0018
		(0.002)	(0.001)	(0.002)		(0.003)	(0.001)	(0.003)
Regression statistics					**Regression statistics**			
Observations		3584	3456	3456	Observations	2771	2713	2713
R-squared		0.002	0.004	0.003	R-squared	0.002	0.012	0.006
F-stat		0.879	1.195	0.579	F	0.671	0.693	1.033
p-value		0.552	0.289	0.832	p-value	0.752	0.732	0.412

Notes: This table displays the non-contemporaneous difference on differences regressions of institutional ownership changes on the one and three lags in board capital and director demographic variables for total institutional ownership and by type of investor (Grey vs. Independent). Grey institutional ownership refers to the equity holdings (shares) held by pension funds and insurance companies among the three major shareholders. Independent institutional ownership refers to the equity holdings (shares) held by trust funds, investment firms and investor advisors among the three major shareholders. Total institutional ownership is the sum of the equity shares held by institutional investors among the three major shareholders. Robust standard errors corrected by White Hubbert weighted estimator in parenthesis; ***, **, and * represent significance levels of 1%, 5%, and 10% respectively.

Table VII - Pooled regressions - board capital diversity indices

Variables		BCDI 1 Eq1	BCDI 1 Eq2	BCDI 1 Eq3	BCDI 2 Eq4	BCDI 2 Eq5	BCDI 2 Eq6	BCDI 3 Eq7	BCDI 3 Eq8	BCDI 3 Eq9
Institutional Ownership$_{t-1}$	B$_1$	-0.008	...	...	-0.024	...	...	-0.027	...	...
		(0.055)	...	...	(0.059)	...	...	(0.071)	...	...
Institutional Ownership$_{t-2}$	B$_2$	...	0.050	...	...	-0.004	...	...	-0.026	...
		...	(0.061)	...	...	(0.062)	...	...	(0.076)	...
Institutional Ownership$_{t-3}$	B$_3$	...	...	0.040	...	...	-0.010	...	...	0.001
		...	...	(0.065)	...	...	(0.066)	...	...	(0.083)
Blockholder contestability										
Herfindahl Differences Index	B$_4$	0.007	0.012	0.023	0.008	0.037	0.064	0.016	-0.009	-0.015
		(0.055)	(0.058)	(0.061)	(0.061)	(0.064)	(0.067)	(0.080)	(0.083)	(0.088)
Firm Financial										
Return On Assets	B$_5$	0.151	0.148	0.162	-0.3326***	-0.2941**	-0.2372*	0.7955***	0.7789***	0.6991***
		(0.109)	(0.112)	(0.115)	(0.122)	(0.124)	(0.126)	(0.164)	(0.169)	(0.172)
Operating Income Volatility	B$_6$	0.0002***	0.0002***	0.0002***	0.0003***	0.0004***	0.0004***	-0.0001**	-0.0001**	-0.0001**
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm Size	B$_7$	0.129***	0.131***	0.131***	0.056***	0.049***	0.044***	-0.066***	-0.065***	-0.062***
		(0.009)	(0.009)	(0.010)	(0.009)	(0.010)	(0.011)	(0.011)	(0.012)	(0.012)
Firm Beta	B$_8$	-0.016	-0.018	-0.017	0.040	0.039	0.043	0.023	0.024	0.026
		(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)
Tangibility	B$_9$	0.024	0.053	0.051	-0.401***	-0.395***	-0.395***	-0.114	-0.113	-0.113
		(0.056)	(0.060)	(0.063)	(0.068)	(0.071)	(0.075)	(0.079)	(0.083)	(0.088)
Stock turnover p75 Dummy	B$_{10}$	0.211***	0.225***	0.246***	0.224***	0.259***	0.279***	-0.058*	-0.068*	-0.078**
		(0.031)	(0.032)	(0.034)	(0.038)	(0.040)	(0.041)	(0.034)	(0.035)	(0.036)
Macroeconomic										
Property rights index w.r.t US	B$_{11}$	0.7904**	0.7706**	0.8285**	0.1692	0.3006	0.4636	-0.806**	-0.8412**	-0.8537**
		(0.349)	(0.381)	(0.394)	(0.363)	(0.396)	(0.412)	(0.374)	(0.398)	(0.413)
EMBI _bp	B$_{12}$	-0.771***	-0.622***	-0.344	-0.306	-0.394	-0.620	0.154	0.065	0.029
		(0.192)	(0.226)	(0.325)	(0.275)	(0.317)	(0.377)	(0.269)	(0.301)	(0.403)
Market Capitalization (% of GDP)	B$_{13}$	-0.0002	-0.0002	-0.0002	-0.0004	-0.0002	-0.0004	0.0005	0.0006	0.0008
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Constant		-1.549***	-1.601***	-1.657***	-0.275*	-0.297*	-0.310*	0.155	0.156	0.142
Regression Statistics										
Observations		3,323	3,047	2,749	3,323	3,047	2,749	3,323	3,047	2,749
R-squared		0.498	0.502	0.507	0.310	0.316	0.323	0.160	0.161	0.160
F		176.1	166.7	158.2	121.8	113.3	103.9	36.87	33.99	30.68
Industry dummy		yes	yes	yes	yes	yes	yes	yes	yes	yes
Country Dummy		yes	yes	yes	yes	yes	yes	yes	yes	yes

Notes: This table displays the pooled regressions of board capital diversity indices and lagged institutional ownership. Board capital indices are factor score indices from PCA rotated factor loadings. BCDI1 gives positive loadings to educational variables; BCDI2 gives positive loadings to director professional experience; BCDI3 has the largest weights on demographic diversity variables). Total institutional ownership is the sum of Grey and Independent shareholdings. Grey institutional ownership refers to the equity holdings (shares) held by pension funds and insurance companies among the three major shareholders. Independent institutional ownership refers to the equity holdings (shares) held by trust funds, investment firms and investor advisors among the three major shareholders. Total institutional ownership is the sum of the equity shares held by institutional investors among the three major shareholders. Robust standard errors corrected by White-Hubbert weighted estimator in parenthesis; ***, **, and * represent significance levels of 1%, 5%, and 10% respectively.

Table A1 - Number of firms with board data by country/year

Country	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Avg
Argentina	28	28	30	30	30	30	30	30	30	30	30	30
Brazil	118	119	119	121	122	122	124	124	124	124	124	122
Chile	99	100	101	101	101	101	101	101	101	101	102	101
Colombia	38	38	38	39	40	41	41	41	42	41	39	40
Mexico	63	63	62	62	64	64	64	64	64	64	64	63
Peru	58	61	70	73	74	74	74	74	74	74	75	71
Total	404	409	420	426	431	432	434	434	435	434	434	427

Notes: This table displays the number of firms by country and year from the main dataset reporting full information on boards of directors.

Sources: Thomson one, Thomson's World Scope, Economatica, companies' annual reports (Internet based), firms' web-pages, regulatory bodies, and other internet sources (i.e., directors' CVs and LinkedIn)

Table A.II – Variable Definition

Variable	Definition	Source
Institutional Ownership		
Institutional Investor precense	Dummy equal to 1 if there is at least one institutional investor within the three major shareholders	Anual Reports-Eikon-Thomson Reuters
Grey institutional investor precence	Dummy equal to 1 if there is at least one grey institutional investor within the three major shareholders	Anual Reports-Eikon-Thomson Reuters
Independent institutional Investors precence	Dummy equal to 1 if there is at least one independent institutional investor within the three major shareholders	Anual Reports-Eikon-Thomson Reuters
Total institutional ownership	Fraction of institutional investors shares within the three major shareholders	Anual Reports-Eikon-Thomson Reuters
Grey institutional ownership	Fraction of grey institutional investors shares within the three major shareholders	Anual Reports-Eikon-Thomson Reuters
Independent institutional onwership	Fraction of independent institutional investors shares within the three major shareholders	Anual Reports-Eikon-Thomson Reuters
Board capital		
Bussiness undergrad ratio	Number of directors with bachelor degree in business to board size ratio	Anual Reports-Eikon-Thomson Reuters
Law undergrad ratio	Number of directors with a law degree to board size ratio	Anual Reports-Eikon-Thomson Reuters
Masters studies ratio	Number of directors with a masters degree to board size ratio	Anual Reports-Eikon-Thomson Reuters
Undergraduate studies in non business or law related fields	Number of directors with undergraduate studies that are not business or law related to bioard size ratio	Anual Reports-Eikon-Thomson Reuters
CEO experience ratio	Number of directors that are or were CEO of any firm (including the corresponding firm) to board size ratio	Anual Reports-Eikon-Thomson Reuters
Founder experience ratio	Number of directors who were founders of any firm or organization (including the corresponding firm) to board size ratio	Anual Reports-Eikon-Thomson Reuters
Public sector experience ratio	Number of directors in the board that have or had public high profile position in the firm, divided by the size of the board.	Anual Reports-Eikon-Thomson Reuters
Board demographic		
Foreign directors (ratio)	Number of foreign directors (or with foreign origin) to board size ratio	Anual Reports-Eikon-Thomson Reuters
Female directors (ratio)	Number of women to board size ratio	Anual Reports-Eikon-Thomson Reuters
Board Structure		
Board size	Current number of appointed directors observed at year t	Anual Reports-Eikon-Thomson Reuters
Annual Bboard Turnover (members)	Represents the number of directors that left the board that year t	Anual Reports-Eikon-Thomson Reuters
Board Turnover ratio	Represents the number of directors that left the board at year t relative to board size	Anual Reports-Eikon-Thomson Reuters
Outside director ratio	Number of outside directors to board size ratio. Outside director is a board member who is not firm's top-executive or emploee.	Anual Reports-Eikon-Thomson Reuters
Independent director ratio	Number of independet directors to board size ratio. Independet director is self-reported according to country's definition	Anual Reports-Eikon-Thomson Reuters
CEO-COB (Dummy)	Dummy that indicates if the CEO of the firm is also the Chairman Of Board	Anual Reports-Eikon-Thomson Reuters

Table A.II – Variable Definition (Cont.)

Variable	Definition	Source
Ownership structure		
Largest shareholder	Fraction of share outstanding in hands of the largest shareholder	Eikon-World Scope ownership data; Economatica
Herfindal Diffference index	$Herfindal\_differences = (s_1 - s_2)^2 + (s_2 - s_3)^2 + (s_3 - s_4)^2$ $where\ s_i = fraction\ of\ shareholder\ i's\ equity$	Eikon-World Scope ownership data; Economatica
Financial		
Return o Assets	The ratio of net profits after tax to total assets	Anual Reports-Eikon-Thomson Reuters
Firm Size	Natural Logarithm of total asssets	Anual Reports-Eikon-Thomson Reuters
Leverage	The ratio of total liabilities to total assets	Anual Reports-Eikon-Thomson Reuters
Stock Turnover	Annual average of daily trading volume (millions)/ #Shares outstanding (millions)	Anual Reports-Eikon-Thomson Reuters
Sock Turnover 75th percentile	Dummy variable equal 1 if stock turnover of firm i's at year t is equal or above 75th-percentaile 75, zero otherwise	Own estimates
Operating Income Volatility	Standard deviation of the operating income for the last three years	Anual Reports-Eikon-Thomson Reuters
Sales Growth	Percentage of sales growth compared to previous year.	Anual Reports-Eikon-Thomson Reuters
Firm Beta	Standard measure of systemic risk for a firm's stock with respect to the mark	Anual Reports-Eikon-Thomson Reuters
Tangibility	Total property, plant and equipment divided by total assets	Anual Reports-Eikon-Thomson Reuters
Macroeconomic		
EMBI	Emerging Markets Bonds Index (Base points). Measures financial risk in each country	Anual Reports-Eikon-Thomson Reuters
Property Rights Index w.r.t US	Is an assesmennt of the ability of individuals to accumulate private property, secured by clear laws that are fully enforced by the state. Index from 0 to 10. The index is the ratio og PRI of county i's minus PRI USA	Index of economic freedom
Market Capitalization	Market capitalization (also known as market value) is the share price times the number of shares outstanding	S&P, Global Stock Markets Fact-book and supplemental S&P data.

Table A.III Descriptive statistics – Blockholder ownership, firm financial and macro variables

	Obs	Mean	Std.	p50	Min	Max
Panel A - Blockholder ownership variables						
First blockholder equity rights	4,498	0.481	0.246	0.494	0.031	1.000
Second blockholder equity rights	4,498	0.134	0.104	0.109	0.000	0.500
Herfindal differences index	4,498	0.220	0.255	0.127	0.000	1.000
Herfindal concentration Index	4,498	0.329	0.252	0.283	0.003	1.000
Panel B Firm financial variables						
Return on Assets	4,458	0.121	0.119	0.1058	-0.774	1.449
Leverage ratio	4,513	0.478	0.210	0.4783	0.005	1.358
Firm size (Log Assets)	4,513	6.099	1.854	6.0749	-0.258	12.65
Sales_growth	4,363	0.042	2.173	0.0326	-24.32	23.95
Firm-stock beta	4,031	0.108	0.426	0.0087	0	7.74
Asset Tangibility	4,503	0.396	0.246	0.3905	0	0.967
Stock turnover-P75	4,441	0.261	0.439	0	0	1
Operating Income Volatility (base points	4,314	74.37	302.80	10.23	0	6,540
Panel C Macroeconomic variables						
EMBI (Spreads)	4,702	0.047	0.078	0.024	0.006	0.574
Market Capitalization (Base = 100)	4,702	59.13	35.12	49.62	9.77	157.01
Property Rights Index w.r.t USA	4,702	0.611	0.234	0.556	0.222	1

Source: Thomson Reuters World Scope and EIKON, *Economatica*, firm annual reports and WDI-World Bank
Notes: Selected variables included in the empirical models

Table A.IV - Principal Component Analysis – Factor score indices

Panel A - Factor loads

Board members' characteristics

	Factor 1	Factor 2	Factor 3
Female	0.161	-0.158	**0.632**
Foreigners	-0.126	0.179	**0.729**
Edu. Masters	**0.813**	-0.046	-0.119
Edu. Non-business or law	**0.688**	0.179	0.282
Experience CEO	0.181	**0.778**	0.006
Experience Founder	-0.102	**0.725**	0.115
Experience Public sector	0.510	**0.436**	-0.291

Panel B - Board factor score indices: summary of statistics

Score Index	Obs	Mean	Std Dev	Min	Max
BCDI-index (education)	4,403	0	1	-2.44	4.30
BCDI-index (experience)	4,403	0	1	-2.33	4.84
BCDI-index (demographics)	4,403	0	1	-2.79	5.27

Notes: The names of factor loads are as follows:
Board capital diversity index 1 = Director factor 1: people factor education
Board capital diversity index 1 = Director factor 2: people factor experience
Board capital diversity index 3 = Director factor 3: people demographics

The variables used in factor analysis measured as ratio with respect to board size. The set of director characteristics variables are i) women directors, ii) foreigner directors, iii) directors with master's degrees, iv) directors with undergraduate degrees in subjects other than law or business, v) directors with experience as CEOs, vi) directors with experience as founders of other firms, vii) directors with experience in the public sector.

Source: Author's estimation

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