Country level governance variables and ownership concentration as determinants of firm value in Latin America

Paolo Saona [a],[*], Pablo San Martín [b]

[a] John Cook School of Business, Saint Louis University, Av. Del Valle 34, 28003 Madrid, Spain
[b] Facultad de Ciencias Económicas y Administrativas, Universidad Católica de la Santísima Concepción, Av. Alonso de Ribera 2850, 4070129 Concepción, Chile

ARTICLE INFO

ABSTRACT

The goal of this paper, which follows a corporate governance approach, is to assess whether within country changes in governance (e.g. in legal and regulatory systems and financial development) and changes in corporate ownership concentration can predict a change in the value of Latin American firms. Using fixed-effect panel data models with a representative sample of firms for the period from 1997 to 2013, we observe that the investors' rights and their legal protection as well as the rule of law are associated with a premium in the firm market value. Contrary to what was expected, in immature financial markets, as found in Latin America, firms take advantage of both the asymmetries of information and the multiple market frictions to be overvalued. So, as the financial system develops, firm value drops. At the firm-level, results confirm the hypothesis of the expropriation of minority shareholders.

© 2016 Elsevier Inc. All rights reserved.

1. Introduction

In the last decades, law and finance literature has demonstrated that the legal environment together with the regulatory quality and the government effectiveness in protecting investors' rights can explain many of the major differences in the valuation of companies across countries.

In this line, financial literature has confirmed that governance structures in emerging markets do not behave as in developed economies such as the USA and other Anglo-Saxon countries (Claessens et al., 2002; Claessens & Yurtoglu, 2013; De Jong et al., 2008; Klapper and Love, 2004; Morey et al., 2009). Consequently, the major goal of this paper is to study under a corporate governance approach how country-level and ownership structure impact the firm market value in a sample of Latin American companies.

Emerging markets provide a challenge to existing models and beg the creation of new financial models (Bekaert and Harvey, 2002). About country-level governance systems and their impact on firm value, just a few papers have been developed for emerging markets (Chari et al., 2010; Gibson, 2003; Klapper and Love, 2004; López and Crisóstomo, 2010; Mitton, 2004; Morey et al., 2009). Indeed, in this study we consider the legal and regulatory systems, as well as the development of financial system as determinants of firm value. These kinds of variable are essential because issues such as corruption, rule of law, and legal enforcement, among others, are issues of social demand in Latin America. Recent scandals at political and corporate level show that we cannot disconnect these variables from corporate governance and firm value.

In the same vein, it is widely known that at the firm-level the corporate ownership structure in most of the emerging markets plays a more important role as a governance device than in industrialized economies (Buchuk et al., 2014; De Jong et al., 2009). Thus, we opt in this paper for using the ownership concentration as a measure of an internal governance device which determines firm value.

The major contributions of this paper are primarily to close a gap in the empirical literature by analyzing the determinants of firm value for a sample of Latin American companies. Although several papers have studied emerging markets, they have limitations either in the scope and/or the scale of their proposed analyses. They intend to use samples of firms from different countries but they lack representativeness for further extrapolation of the Latin American

* Corresponding author.
  E-mail addresses: psaonaho@slu.edu (P. Saona), psanmartin@ucsc.cl (P. San Martín).

region (Lins (2003) uses a sample of 18 emerging markets, with 4 of them from Latin America; Garay and González (2008) is just focused on Venezuelan firms; Klapper and Love (2004) used a sample of 14 countries but, out of them, only Brazil and Chile belong to Latin America; similarly, Durnev and Kim (2005) and Morey et al. (2009) employ just a handful of Latin American companies from samples of 27 and 21 emerging markets, respectively; a similar scenario is observed in Chua et al. (2007)'s study, among other works. None of these works is able to extract conclusions and policy recommendations for the specific case of the Latin American context. Moreover, empirical literature opts for using either firm-level or country-level determinants of firm value, but rarely both which does not allow for verification of the interaction between the firm- and country-level factors (De Jong et al., 2008; Morey et al., 2009). Thus, contributing to the previous literature, we explore jointly the firm- and the country-level drivers of firm value. Other papers do not properly treat the endogeneity in multi-country or standalone country studies (Attig et al., 2009; Balasubramanian et al., 2010; Black et al., 2012; Mitton, 2004; Shan et al., 2015; Shleifer and Vishny, 1986), and therefore caution must be taken in any interpretation regarding causality. We, on the other hand, employ a firm-level invariant effect model with a panel data analysis and deal efficiently with the endogeneity problem.

Additionally, we intend to contribute to the literature by building up our arguments on local characteristics of Latin American markets. We believe that, given the particular characteristics of emerging markets, certain relationships applicable to the Anglo-Saxon context could be reinforced or even reversed (e.g. high ownership concentration, low development of financial markets and weak law enforcement). Therefore, we suggest that some insights from the current theoretical frameworks are not transferable across countries, and consequently much remains to be done to understand the impact of different institutional features on firm value.

The main findings indicate that at the country-level determinants, improvements in the legal and regulatory systems press up the market value of the firm. However, contrary to what was expected, when the financial markets become more developed in Latin America, firm value declines as a consequence of suppression of non-competitive profits. At firm-level determinants, the ownership concentration is an essential driver of firm value supporting both the monitoring and the expropriation hypotheses. All these findings suggest that first a good regulatory system is associated with a premium in the firm market value; second, more developed financial markets reduce the monopoly power of firms; and third, moral hazard problems such as the expropriation of minority shareholders still need to be addressed in Latin America.

The paper develops the literature review and the research hypotheses in the Section 2. Section 3 articulates the methodology applied in the empirical analysis. The main findings are presented in Section 4 and finally, in Section 5, the major conclusions are summarized.

2. Literature review and research hypotheses

The theoretical literature provides many definitions of corporate governance and from different approaches. Although there is no single and all-embracing definition, all of them are built upon two pillars. First, as a set of behavioral patterns, or in other words, the actual behavior of corporations in terms of, for instance, the way they are managed or how their financial decisions are made; and second, as a normative framework which defines the way firms should be governed (Claessens and Yurtoglu, 2013). From this existing notion of corporate governance, in terms of the scope of this work, we will understand corporate governance as the set of internally and externally generated mechanisms (e.g. procedures, policies, rules, norms, and institutions, among others) through which firms operate when ownership is separated from management in order to ensure the maximization of the shareholders' wealth.

2.1. Country-level determinants of firm value

Demirgüç-Kunt and Levine (2004) categorize these firm exogenous variables in regulatory variables, macroeconomic and financial system control variables, and institutional variables. In terms of the purpose of this work, we just categorize the country-level determinants into legal and regulatory systems and financial development systems. Claessens and Yurtoglu (2013) suggest that the current challenges of corporate governance are highly determined by the development of both the financial markets and the legal systems. Since this work is based on a corporate governance approach, we cannot detach these two groups of variables in the theoretical and empirical analysis.

2.1.1. Legal enforcement and regulatory system
Demirguç-Kunt and Maksimovic (1998) and later on Demirgüç-Kunt and Levine (2004) find that better legal enforcement and efficient regulatory systems are associated with lower levels of corruption, which make financial systems perform with much less friction. Naceur and Omran (2011) study the influence of bank regulation on the value of Middle East and North Africa commercial banks. They find that regulatory and institutional variables create a positive association between legal enforcement and the efficiency of the regulatory system and firm value.

The legal and regulatory system involves a number of dimensions such as: (a) the root of the legal system, which defines critically the way to behave and understand life in society; (b) the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, association, and media. This particular point is very relevant because the voices raised asking for freedom to elect public leaders in the history of Latin America are not a few. In fact, most of the countries in the region have experienced totalitarian governments at some point of their recent history; (c) the general protection of property rights (particularly those of creditors and shareholders) which gives guarantees to the financial markets' participants; (d) the enforcement of the law; (e) corruption, which seems to be an endemic problem in Latin America. In fact, corruption issues are extended not just at the political level but also overlapped at the corporate level. Recent corporate and government scandals in the region reveal the need for the eradication of corruption; (f) transparency and disclosure of corporate information, among others.

In cross-country analyses, many of these aspects are qualitative and consequently not easily captured and codified (Claessens and Yurtoglu, 2013). In this sense, La Porta et al. (2006), having analyzed provisions in security laws for almost fifty countries, find strong evidence that laws mandating disclosure and facilitating private enforcement through liability rules benefit stock markets and firm value.

Accordingly to these arguments we hypothesize that:

H1. The better the regulatory and legal system across countries, the higher the market value of the firms will be.

2.1.2. Financial development of capital markets
The positive influence of the development of a country's financial sector on the level and growth rate of its per capita income has been widely accepted in the literature (Rajan and Zingales, 1998). The role of financial institutions in capital markets is to serve as a middleman between saving and borrowing units by reducing the

transaction costs. The financial development enhances the allocation of capital, liquidity, the firms' access to more sophisticated financial instruments, the flow of information, and a reduction in the cost of external financing, better enabling firms to exploit current growth opportunities (Love, 2011). For a sample of developed and developing countries, Raddatz (2006) provides evidence that higher financial development translates into a greater number of real growth opportunities and positive net present value projects due to the lower cost of external financing.

When financial markets are not well developed, market anomalies and opportunistic behavior arise, affecting negatively firm value. Statistics of the World Bank show that the financial depth indicators in Latin America measured as the credit to the private sector as a share of the GDP are lower than in any other region around the world with the exception of the sub-Saharan Africa region. Additionally, although it is recognized that market capitalization has increased substantially over the last decades in Latin America, the number of listed firms has declined systematically from 2000, suggesting that across the region there is a need for further depth and development of financial markets.

Lin and Tai (2013) report that analysts would recommend poorly governed firms to their clients in an emerging market where information asymmetry tends to be high and shareholder rights are not well protected by legal systems. They also state that improved governance by developed financial systems not only reduces agency problems within firms, but also enhances information quality produced by analysts. Consequently, our hypothesis on the financial development on Latin America suggests that:

H2. More developed financial markets positively affect firm value.

2.2. Firm-level determinant of firm value

As a consequence of the separation between ownership and control, managers have the propensity to engage in self-serving behavior such as perquisite consumption, empire building, and shirking of effort (Jensen and Meckling, 1976). The literature describes several governance mechanisms to alleviate agency problems, the vertical conflict between shareholders and managers as well as the horizontal agency problem between majority and minority shareholders. The firm-level governance system to be analyzed in this study corresponds to the role of the corporate ownership concentration as a disciplining device.

2.2.1. Corporate ownership structure

The way in which the ownership is shared among the stockholders might alleviate or aggravate the agency problems. Thus, it has been widely argued that concentrated ownership structures solve some agency problems through direct supervision of managers (Ang et al., 2000). Therefore, the vertical agency conflict might be efficiently mitigated through a higher ownership concentration which supports the positive relationship between ownership concentration and firm value, as postulated by the monitoring hypothesis (Jensen and Meckling, 1976; Shleifer and Vishny, 1986). Nevertheless, a highly concentrated ownership structure might cause firm value to decrease as highlighted by the expropriation hypothesis. The expropriation–also named the horizontal agency problem–occurs when controlling-majority shareholders use their decision power in their own best interest, which does not necessarily correspond to that of minority shareholders (de Miguel et al., 2004, 2005). As a result, there is a redistribution of wealth from minority to majority shareholders, which triggers a negative change in the firm market value as the majority shareholder's ownership increases.

The manner in which the ownership structure is shaped in firms across countries also depends on the characteristics of the institutional systems (Richter and Weiss, 2013). For instance, the Law and Finance approach argues that the weaker protection of investors' rights in civil-law countries fosters concentrated shareholdings of the equity capital to deal with the risk of being expropriated (La Porta et al., 1999, 1998). Similarly, Omran et al. (2008) state that ownership concentration is an endogenous response to poor legal protection of investors. For instance, the empirical work of Crisóstomo et al. (2014) shows that in financial systems where the rights of minority shareholders are poorly protected, such as in Brazil, block ownership is able to reduce the intensity of financial constraints and consequently increase the firm value as stated by the monitoring hypothesis.

Contrary to the dominant Anglo-Saxon evidence, recent corporate scandals in the region show that firms with relative widespread ownership structures are exposed to risk of expropriation. An anecdotal example is the La Polar case, which took place in Chile in 2011 and confirms that managers can behave opportunistically when the firms have diluted ownership structures. The configuration of the corporate ownership structure as a governance device can be a double-edged sword which might improve or dilute the firm market value depending on whether the dominating effect is the monitoring hypothesis or the expropriation hypothesis. Therefore,

H3. The concentration of the ownership structure can impact positively or negatively on firm value, depending on whether the monitoring or the expropriation effect dominates, respectively.

3. Methodology, baseline model, and variables definition

3.1. Methodology

We are interested in assessing whether a within country change in governance as well as a change in ownership concentration at firm level can predict a change in firm value. Our database combines time series with cross-sectional data, allowing the formation of panel data. In the empirical estimation of panel structures two problems could arise, namely the constant and unobservable heterogeneity and the problem of endogeneity (Baltagi, 2013). The constant and unobservable heterogeneity refers to specific, time-invariant characteristics of each firm (e.g. firm culture, business strategy, internal policies etc.). Since they are unobservable, they become part of the random component in the estimates. The endogeneity problem takes place when improved valuation might drive an impact on governance measures (Durnev and Kim, 2005; Love, 2011). We follow Black et al. (2014) and proceed, on the one hand, by applying panel data with fixed effect (FE) specifications to tackle the unobservable heterogeneity problem, and, on the other, by computing the governance measures at the beginning of the year and firm value at year-end in order to address the endogeneity problem.[1]

Although prior research has focused on cross-sectional data, we seek to improve on these findings following Black et al. (2014) and using FE as time-demeaned specification as $x_{it}^{dm} = (x_{it} - \bar{x}_i)$ where x_{it} corresponds to the vector of independent variables. With this transformation, the FE estimator is consistent even if the firm effects are correlated with country-level variables and other firm-level variables.

We use the well-known Hausman specification (as reported at the bottom of each estimation) which compares the fixed versus random effects under the null hypothesis that the indi-

---

[1] Despite this transformation to avoid reverse causation (e.g. marginal changes in firm valuation drive changes in firm- and country-level corporate governance); according to Ararat et al. (2014), Balasubramanian et al. (2010) and Black et al. (2006) there is only weak empirical evidence that firm characteristics predict country-level corporate governance measures.

vidual effects are uncorrelated with the other regressors in the model. As seen in all the estimations, the test strongly rejects the equivalence between random effects and fixed effects of all coefficients together, suggesting that the difference in coefficients is systematic and that consequently firm-level fixed effects exist. Prior multi-country studies rely on cross-sectional OLS estimates (Gugler et al., 2013). Therefore, in addition to the Hausman specification, we also used the Breush-Pagan contrast to test whether the estimated variance of the residuals are dependent on the values of the independent variables (e.g. heteroskedasticity). In all the cases (although not reported), the test rejected the absence of firm specific effects, meaning that pooled OLS estimates will be inconsistent. This also can be used as evidence of the assumption of time-invariant firm effects.

A quasi-experimental approach with an exogenous shock to governance may also be used for stronger identification. However, as suggested by Black et al. (2014), in a multi-country setting like ours, such an assumption is not realistically available since shocks impacting all the countries in a comparable extent are virtually unobservable. Instrumental variables (IV) may also be used if there are valid instruments that are correlated with the endogenous regressor but uncorrelated with the error term. However, Larcker and Rusticus (2010) indicate that when the instrument is only weakly correlated with the regressor, IV methods can produce highly biased estimates when the instrumental variable is even slightly endogenous. In those cases, IV estimates are more biased and more likely to provide the wrong statistical inference than OLS estimates that make no correction for endogeneity. Consequently, we decided not to use either IV approach in this paper.

Since we use micropanel data in which the cross-section dimension far exceeds the time-series dimension (i.e. we have many more firms than years), we used a Fisher-type (Choi, 2001) test which has as null hypothesis that all the panels contain a unit root to test the stationarity of the variables in the model.[2]

3.2. Sample and variables definition

The dataset for the empirical analysis was obtained from different sources. The audited financial statements and stock quotations at the end of each fiscal year were gathered from the *Thomson Reuters* database. Like in other empirical studies on corporate governance, all financial firms were excluded from the analysis because the very nature of their business and its regulatory system might bias the findings. We likewise excluded firms with negative equity (e.g. companies technically in bankruptcy) and firms with lack of information for the empirical analysis. Country-level information was obtained from the updated data set of Beck et al. (2000) publicly available at the World Bank web page, which provides information about financial development by country and year.[3] Worldwide Governance Indicators (WGI) concerning the legal and regulatory systems by country and year were obtained from the updated work of Kaufmann et al. (2011) whose data set is also publicly available.[4] The final sample comprises 769 firms from Argentina, Brazil, Chile, Colombia, Mexico, and Peru. The empirical analysis ranges the period 1997–2013 with a total of 7168 observations and an average of 9.3 continuous observations per firm (see Table 1).

Table 1
Composition of the panel data.

Country	Observations	Firms	Avg. Obs. per Country
Argentina	977	91	10.7
Brazil	1760	232	7.6
Chile	1280	108	11.9
Colombia	535	66	8.1
Mexico	1762	177	10.0
Peru	854	95	9.0
Total	7168	769	9.3

The table describes the composition of the panel data used in the empirical analysis by country.

The empirical analysis used the following variables related to the literature review (details on their construction can be found in the Appendix A).

The country-level variables are:

Legal enforcement and regulatory system: We include the following variables, resulting in a total of six dimensions of governance which go from approximately −2.5 (weak) to 2.5 (strong) (Kaufmann et al., 2011): i) Voice and Accountability (*VA*) which is the process by which governments are selected, monitored, and replaced; ii) Political Stability and Absence of Violence/Terrorism (*PS*) which measures the perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism; iii) Government Effectiveness (*GE*) which corresponds to the quality of public and civil services, and the degree of their independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies; iv) Regulatory Quality (*RQ*) which measures the perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development; v) Rule of Law (*RL*) which reflects the confidence of the agents in the rules of society and whether they abide by them, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence; and finally vi) the Control of Corruption (*CC*) which measures the perceptions of the extent to which public power is exercised for private gain, including both petty and major forms of corruption, as well as "capture" of the state by elites and private interests.

Financial development: Six measures of financial development are used (Beck et al., 2000). The first three are associated with the development of the banking system such as (i) Deposit Money Bank Assets to GDP (*DBAGDP*); (ii) Private Credit by Deposit Money Banks to GDP (*PCBGDP*); and (iii) Bank Credit to Bank Deposits (*BCBD*). The other three variables measure the development of the capital markets: (i) Stock Market Capitalization to GDP (*SMKGDP*); (ii) Stock Market Total Value Traded to GDP (*SMKVTGDP*); and (iii) the Stock Market Turnover Ratio (*SMKTO*).

Dummy variables: International Financial Reporting System (*IFRS*), industry-level, country-level and year-level variables are included in the models as control variables too.

The firm-level variables are:

Firm value: this corresponds to the logarithmic transformation of the market to book ratio (*FV*) as a proxy for Tobin's Q. For robustness purpose we used as an alternative variable the market to equity ratio (*FV*1).

Corporate ownership concentration: this is measured by the level of ownership concentration held by the controlling shareholder (*OWN*) (Espinosa, 2009; Saona and Vallelado, 2005).

Firm size: we use the natural logarithm of total assets to measure the company size (*SIZE*) (de Miguel et al., 2004; Lins, 2003; McConnell and Servaes, 1990; Saona, 2014).

---

[2] We used the Fisher-type test because it does not require strongly balanced data. This test for panel data unit roots follows a meta-analysis perspective. That is, this test conduct unit-root tests for each panel individually, and then combine the *p*-values from these tests to produce an overall test.

[3] The latest update took place in November 2013. Information can be downloaded from the permanent URL http://go.worldbank.org/X23UD9QUX0.

[4] The latest update took place in September 2014. Information can be download from www.govindicators.org.

Profitability: it is measured as the return on assets (*ROA*) (Haugen and Baker, 1996; Yang et al., 2010).

Firm risk: it is measured thought the alternative Altman Z-Score built for developing countries (*Z*) (Altman, 2005).

3.3. Model

Our general firm fixed-effect model is:

$$FV_{it} = \beta_0 + \beta_1 OWN_{it-1} + \beta_2 LEGSYS_{it-1} + \beta_3 FINDEV_{it-1} + \sum_{k=1}^{K} \delta_k C_{it}$$

$$+ \sum_{j=1}^{J} \gamma_j D_{it} + \varepsilon_i + \varepsilon_{it} \tag{1}$$

where FV_{it} represents firm value for the *i* firm at the *t* period. *OWN* is the ownership concentration, *LEGSYS* and *FINDEV* are country-level variables which represent the different alternative measures of the development of the legal and regulatory systems and financial development, respectively. *C* represents the vector of *K* firm-level control variables which (*Z*) include the firm size (*SIZE*), profitability (*ROA*), and firm's insolvency risk *D* is the vector of *J* country-level control dummy-variables which include the adoption of the International Financial Reporting System (*IFRS*), industry-level and country-level variables, and temporal variables. ε_i and ε_{it} are the individual effect and the stochastic error, respectively.

4. Results and discussion

4.1. Descriptive statistics

Table 2 displays the variables' mean values. It can be observed that the market value of a (*FV*) representative firm is about 60% greater that its book value

The corporate ownership structure as a firm-level governance device is highly concentrated in Latin America as referred to in previous literature (Paredes and Flor, 1993; Sáenz González and García-Meca, 2014). Shares in the hands of the controlling share-holder are more than one fourth of the total outstanding shares (*OWN*) (28.5%). High ownership concentration in emerging markets is the natural response to the lack of efficient corporate governance mechanisms to ensure the protection of the investors' rights.

Since the average indicator for the insolvency risk (*Z*) is higher than 2.6, we can say that a typical firm is operating in the safe zone with low bankruptcy risk (since firms with negative equity were removed from the sample).

All the other variables are basically indicators which measure the country-level determinants of firm value. Although the countries in our sample share the same French civil-law legal origin, and most of the literature classifies the Latin American economies in the same category, the results tabulated in Table 2, Panel B, show that there are marked differences among them.

The country-level variables are classified basically in two big groups (see Table 2, Panels A and B). The first one is related to the financial development of capital markets (*FINDEV*) and the second group includes the legal enforcement and regulatory system variables (*LEGSYS*). The legal enforcement and regulatory system variables are basically six corporate governance indicators by country from Kaufmann et al. (2011): i) Voice and Accountability (*VA*); ii) Political Stability and Absence of Violence/Terrorism (*PS*); iii) Government Effectiveness (*GE*); iv) Regulatory Quality (*RQ*); v) Rule of Law (*RL*); and vi) Control of Corruption (*CC*). Despite the fact that the original values for each of these six indicators ranges from approximately −2.5 (weak) to 2.5 (strong) governance performance, in our sample such values are not that extreme. In addition

Table 2
Descriptive statistics.

Panel A		
Variable	Obs	Mean
FV	4244	1.604
FV1	7168	3.255
OWN	7168	0.285
SIZE	7168	6.518
ROA	7168	0.066
Z	7168	6.988
IFRS	7168	0.341
DBAGDP	7168	42.607
PCBGDP	7168	31.394
BCBD	7168	73.278
SMKGDP	7168	43.310
SMKVTGDP	7168	14.507
SMKTO	7168	28.331
VA	7168	0.463
PS	7167	−0.150
GE	7168	0.317
RQ	7168	0.551
RL	7168	0.075
CC	7168	0.285
LEGAL	7167	0.257
FINANCE	7168	38.904

Panel B: financial system and legal and regulatory systems variables by country

Variable	Argentina	Brazil	Chile	Colombia	Mexico	Peru
Financial Development (FINDEV):						
DBAGDP	26.440	77.002	37.145	37.525	31.273	24.242
PCBGDP	15.199	47.362	49.095	35.909	19.985	22.375
BCBD	69.879	88.004	151.724	154.929	71.309	85.312
SMKGDP	28.167	55.337	71.834	42.449	29.632	52.176
SMKVTGDP	2.698	30.866	12.484	4.782	8.140	3.460
SMKTO	11.065	58.768	10.224	10.791	28.746	7.173
FINANCE	23.448	57.339	32.507	50.582	29.085	34.739
Legal System (LEGSYS):						
VA	0.283	0.428	1.101	−0.252	0.140	0.010
PS	−0.113	−0.108	0.589	−1.566	−0.548	−0.903
GE	−0.086	−0.083	1.214	−0.086	0.225	−0.277
RQ	−0.537	0.128	1.472	0.242	0.354	0.394
RL	−0.574	−0.236	1.316	−0.527	−0.525	−0.659
CC	−0.416	−0.036	1.494	−0.361	−0.313	−0.296
LEGAL	−0.241	0.015	1.198	−0.425	−0.111	−0.288
Obs.	977	1760	1280	535	1762	854

Panel A and Panel B show the variables used in the empirical analysis. For each variable of the Panel A, it is shown the mean value. Panel B shows the mean values of the financial systems variables and regulatory system variables by country.

to that, we included a control dummy variable which measures the adoption of the International Financial Reporting System (*IFRS*). Based on this variable, we can observe that about 34% of the observations in our sample correspond to firms with IFRS standards.[5]

Taking the financial development variables as determinants of firm value, we have included six different indicators which measure the relative development of the financial markets. These indicators in turn might be broken down in two subgroups: i) development of the banking system and ii) development of the capital market as suppliers of funds.

The descriptive statistics show that the deposit money bank assets (*DBAGDP*) represent about 42.61% of the GDP for the whole sample; whilst the stock market capitalization (*SMKGDP*) corre-

---

[5] This is a consequence of the gradual adoption of the IFRS of the firms in our sample during the period of analysis. For instance, Brazil and Chile adopted the international accounting standards in 2010, Argentina in 2011, Mexico and Peru in 2012 and Colombia in 2015 (outside of our period of analysis).

Table 3
FE estimates with non-adjusted variables. Dependent variable is FV.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
$Own1_{(t-1)}$	−0.212***	−0.225***	−0.176***	−0.168***	−0.259***	−0.248***	−0.190***	−0.150**	−0.123**	−0.100	−0.194***	−0.145**	−0.127**	−0.248***	−0.216***
	(0.063)	(0.063)	(0.062)	(0.063)	(0.063)	(0.062)	(0.062)	(0.062)	(0.062)	(0.062)	(0.062)	(0.062)	(0.062)	(0.063)	(0.062)
SIZE	−0.160***	−0.154***	−0.177***	−0.179***	−0.145***	−0.146***	−0.119***	−0.191***	−0.180***	−0.156***	−0.131***	−0.189***	−0.149***	−0.142***	−0.111***
	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)
ROA	1.182***	1.158***	1.121***	1.166***	1.172***	1.129***	1.212***	1.167***	1.162***	1.086***	1.130***	1.168***	1.161***	1.137***	1.134***
	(0.135)	(0.135)	(0.135)	(0.135)	(0.134)	(0.133)	(0.134)	(0.136)	(0.135)	(0.134)	(0.134)	(0.136)	(0.134)	(0.134)	(0.133)
Z	0.006***	0.006***	0.006***	0.006***	0.006***	0.006***	0.006***	0.006***	0.006***	0.006***	0.006***	0.006***	0.006***	0.006***	0.006***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
IFRS	−0.021	0.015	0.011	−0.030	0.024	0.056	0.015	−0.056	−0.061	−0.015	0.060	−0.038	0.050	0.051	0.130***
	(0.039)	(0.040)	(0.040)	(0.039)	(0.040)	(0.039)	(0.039)	(0.041)	(0.039)	(0.038)	(0.040)	(0.040)	(0.040)	(0.040)	(0.041)
$DBAGDP_{(t-1)}$	−0.010***														
	(0.002)														
$PCBGDP_{(t-1)}$		−0.014***													
		(0.002)													
$BCBD_{(t-1)}$			−0.006***												
			(0.001)												
$SMKGDP_{(t-1)}$				−0.003***											
				(0.001)											
$SMKVTGDP_{(t-1)}$					−0.017***										
					(0.002)										
$SMKTO_{(t-1)}$						−0.015***									
						(0.001)									
$VA_{(t-1)}$							1.560***								
							(0.156)								
$PS_{(t-1)}$								0.023							
								(0.060)							
$GE_{(t-1)}$									0.492***						
									(0.112)						
$RQ_{(t-1)}$										0.703***					
										(0.071)					
$RL_{(t-1)}$											1.014***				
											(0.097)				
$CC_{(t-1)}$												0.248			
												(0.157)			
$LEGAL_{(t-1)}$													1.277***		1.138***
													(0.147)		(0.147)
$FINANCE_{(t-1)}$														−0.003***	−0.002***
														(0.000)	(0.000)
Intercept	1.475**	1.532**	1.985***	1.286**	1.101*	1.747***	0.859	1.844***	1.172*	1.397**	0.514	1.232**	1.461***	1.768***	1.970***
	(0.618)	(0.616)	(0.630)	(0.618)	(0.614)	(0.610)	(0.612)	(0.167)	(0.618)	(0.611)	(0.614)	(0.620)	(0.167)	(0.615)	(0.179)
Observations	4106	4106	4106	4106	4106	4,106	4,106	4,105	4,106	4,106	4,106	4,106	4,105	4,106	4,105
R^2	0.477	0.482	0.498	0.473	0.498	0.495	0.498	0.498	0.475	0.491	0.493	0.498	0.498	0.498	0.498
Number of iden	585	585	585	585	585	585	585	585	585	585	585	585	585	585	585
F-Test	64.52***	58.39***	58.34***	57.16***	60.47***	63.73***	62.56***	59.11***	57.78***	62.56***	63.15***	56.79***	63.79***	60.99***	64.50***
Hausman test	220.23***	194.71***	424.59***	101.79***	197.83***	306.31***	103.51***	116.19***	296.28***	119.44***	45.10**	187.52***	101.19***	174.03***	100.71***

The table shows the regression results with firm fixed-effects. A detailed definition of variables is in the Appendix. The F-test contrasts the joint significance of all of the variables considered in the analysis. The Hausman specification tests the hypothesis of firm fixed-effects. Standard errors are located beneath the regression coefficients in parenthesis. Country, industry, and time dummy variables are included (although not reported) in the models. *, ** and *** indicate significance at the 10, 5 and 1% levels, respectively.

sponds to 43.31% of the GDP. Although these average ratios are fairly similar, it is important to notice that their evolution along the period of analysis has been quite different. Deposit money bank assets, for instance, have increased substantially since 2002 and the market capitalization has dropped from 2008, right after the sub-prime financial crisis. The civil-law regime which characterizes the legal systems in Latin American, has favored funds privately supplied through bank debt. Consequently, one can expect the banking system to have a relatively greater size than the capital markets in these emerging economies.

Although not tabulated, a correlation matrix was computed to observe any relatively high correlation among the independent variables which might drive autocorrelation problems. We did not observe relatively high correlations, except in the case of the legal and regulatory system variables and in the case of financial development variables, as expected. Subsequently, these sets of variables were entered into the models individually.

4.2. Multivariate analysis

The starting point of the empirical analysis was to check whether the panel data and the individual time series are stationary. Using a Fisher-type test (Choi, 2001), we found no evidence of a unit root in the series under consideration. To do so, we repeated the test performing the augmented Dickey–Fuller test as well as the Phillips–Perron test that the variables follow a unit-root process. In all the cases, we found that the variables were generated by a stationary process. These tests are in accordance with most of the literature which assumes stationarity in the non-financial industry.

Table 3 displays the regressions between the independent variables and firm value (*FV*). In all the regressions we can observe that the independent variables are jointly significant, according to the F test.

4.2.1. Country-level determinants

Table 3 offers details about the impact of the country-level variables on firm value. The first six columns include variables which describe the development of the financial system (e.g. development of the banking system measured by *DBAGDP*, *PCBGDOP*, and *BCBD*; and the development of the capital markets measured by *SMKGDP*, *SMKVTGDP*, and *SMKTO*). The higher the number for these variables, the more developed the financial system is. The average value of these variables by country and year is used to create a composite index for the development of the financial system (*FINANCE*). The next six columns include governance indicators about the legal and regulatory systems (e.g. *VA*, *PS*, *GE*, *RQ*, *RL*, and *CC*). The higher the number of these variables, the more developed the legal and regulatory system is. We also created a legal and regulatory system index (*LEGAL*) computed as the sample average of these variables by country and year. The last three models include estimates with *LEGAL* and *FINANCE* variables.

The last three models in Table 3 summarize the major findings by entering the governance indexes for the legal and regulatory system (*LEGAL*) and for the financial system (*FINANCE*). These findings might be used as robustness checks since we still observe that improvements in the legal and regulatory structures cause a large and positive impact on firm value, and that more developed financial systems drive competitive profits by reducing the overvalued market to book ratio used as a proxy for firm value.

Concerning the variables which measure the impact on firm value caused by the legal and regulatory system (*VA*, *PS*, *GE*, *RQ*, *RL*, and *CC*), we observe that all of them but political stability (*PS*) and control of corruption (*CC*) show a positive and strongly statistically significant coefficient. This finding indicates that the legal bodies mandating disclosure and private enforcement through liability rules, and granting efficient government and higher regulatory

quality significantly benefit the value of the firm. Consequently, we accept the hypothesis H1 which suggests a positive relationship between the improvements of the legal and regulatory systems and *FV*.

Estimates show that all variables which measure the development of the financial system impact negatively on firm value at the standard level of statistical significance. Contrary to what was hypothesized, the results reject the fact that more developed financial systems positively affect firm value in emerging markets. These findings suggest that firm value seems to be negatively impacted by more developed banking systems and capital markets where more complex and sophisticated financial instruments and services can be supplied, where banks can efficiently exercise a monitoring role on the performance of the firm and where the markets channel more informative contents. This might be explained by claiming that in the Latin American markets, firms have taken advantage of the immature stage of development of their financial systems characterized by the opacity, large asymmetries of information, and inefficient markets in order to realize abnormal returns, which are not perceived as such by the participants in these markets. Consequently, when the financial markets achieve a higher stage of development, such overvaluation is reduced impacting negatively on the *FV* variable. Consequently, as the stock markets become more developed, dynamic and transparent, the participants of these markets might scrutinize firms more efficiently. In such a process, firms are less likely to get abnormal returns, supporting the negative relationship between the financial development variables and the firm's market value. Out of the six measures of the financial development (*DBAGDP*, *SMKGDP*, *SMKVTGDP*, and *SMKTO*), the stock market total value traded over GDP (*SMKVTGDP*) is the one with the strongest impact on firm value (coefficient equal to −0.017) whilst the stock market capitalization (*SMKGDP*) is the one with the lowest impact on firm value (coefficient of −0.003). Therefore, these findings reject our empirical hypothesis H2.

At country-level, although *IFRS* is used as a control variable which indirectly measures the efficiency of the legal and regulatory system, we observe that the adoption of the international financial reporting system is significant only in model 15 of Table 3 (in further estimations its significance power becomes stronger). Consequently, we have to proceed cautiously with the interpretation of this result. The international accounting standards as a governance mechanism are aimed to standardize the financial information and improve the quality of the accounting reports by reducing the opacity of the accounting numbers and improving firm value (Soderstrom and Sun, 2007).

4.2.2. Firm-level determinants

Table 3 also assesses the impact of the corporate ownership concentration (*OWN*) as a governance system on firm value. In all except one of the estimates (model 10), the sign for the *OWN* variable is negative and statistically significant. Our findings support the intuition that the concentration of ownership is too high to be able to exercise efficient monitoring in Latin American firms. We observe that firm value is systematically eroded as a result of the wealth expropriation of minority shareholders by the controlling one. Although concentrated ownership in emerging markets, and particularly in Latin America, has surged as a response to the lack of governance, it seems to be that this mechanism is not efficient enough to maximize the value of all existing shareholders. Apparently, controlling shareholders get private benefits at the expense of minority shareholders, and this eventually pushes down firm value. According to the coefficient estimates, a one percent increase in the ownership concentration causes a drop in firm value which goes from 0.123% to 0.259% as observed in models 9 and 5, respectively.

Among the control variables, we included the firm size (*SIZE*), the profitability (*ROA*) and the insolvency risk (*Z*). The main results displayed in Table 3 show that the physical dimension of the firm (*SIZE*) negatively affects its market value. It seems to be that larger and consequently more complex firms are more difficult to be monitored. The decision making process in large firms is perhaps more bureaucratic and time consuming. Larger firms are also more mature, diversified, and sometimes are operating in non-profitable industries which impact negatively on firm value. On the contrary, smaller firms are more dynamic and able to quickly adjust their financial decisions to market shocks. Moreover, smaller firms have more growth opportunities than large firms, which in turn impacts positively on their value. In addition to this, it is worth noting that more profitable firms (*ROA*) show relatively higher firm values than less profitable firms. The economic impact of the coefficient for *ROA* variable is remarkably high–it is in between 1.086 (model 10) and 1.212 (model 7) in Table 3–which indicates that the investment decisions and their capacity to generate income are quite important determinants of the value of Latin American firms. The last control variable is the insolvency risk (*Z*), and according to its construction, the insolvency risk increases as the variable *Z* decreases. Therefore, the positive sign of the *Z* variable must be interpreted as a negative impact of the default risk on the value of the firm.

4.2.3. Comparative analysis by institutional system

This part of the empirical analysis offers a comparison by institutional context. In this case, the sample was split into two big groups depending on the relative efficiency of their legal and regulatory systems. In order to do so, we compared the value of the *LEGAL* variable by country as seen in Table 2, Panel B. Only Chile and Brazil had a positive value whilst the other countries had a negative average, meaning that for our period of analysis and sample, Chile and Brazil had relatively better institutional environments than Argentina, Colombia, Mexico, and Peru. Therefore, we re-estimated the regressions taking into consideration these two groups of countries. The results are displayed in Table 4. In this table we observe that the ownership concentration negatively affects firm value in countries with relatively poor legal environment (Argentina, Colombia, Mexico, and Peru). In the context of Brazilian and Chilean firms, the *OWN* variable is not significant. Apparently, at least for the sample of firms in these two countries, firm value is not contingent on the concentrated ownership structure, ceteris paribus. Once controlled by the legal environment, the potential expropriation risk of minority shareholders by controlling shareholders seems to be negligible as the governance is improved by the legal structures. This finding can be verified by the dominant role of the external governance systems. As we can see, the coefficient of the *LEGAL* variable is comparatively higher for the subsample of Brazilian and Chilean firms than for the rest of the countries in the sample. From this we can conclude that the marginal contribution to firm value as a consequence of improvements in the legal and regulatory systems is higher in Brazil and Chile than in Argentina, Colombia, Mexico, and Peru.

Similarly, the analysis of the *FINANCE* variable suggests that firm value for the set of countries with weaker legal environments suffers most from improvements in the financial system. In other words, firm value in those countries with comparatively weaker legal and regulatory systems seems to have a higher overvaluation. Subsequently, market improvements aiming to increase competition, transparency, and relevance of financial markets, press down such abnormal overvaluation of firms. However, such an impact is not perceived in the set of countries with comparatively better legal and regulatory systems such as Brazil and Chile where the *FINANCE* variable is not statistically significant.

Profitability (*ROA*) as well as insolvency risk (*Z*) enter both subsamples significantly and in the same direction as discussed above.

Table 4
FE estimates by relative efficiency of legal and regulatory system. Dependent variable is FV.

Variables	Brazil + Chile (1)	Other Countries (2)
$OWN_{(t-1)}$	0.074	−0.522***
	(0.059)	(0.115)
SIZE	−0.108***	−0.001
	(0.025)	(0.046)
ROA	1.393***	0.448*
	(0.129)	(0.238)
Z	0.005***	0.006***
	(0.000)	(0.000)
IFRS	0.031	0.100
	(0.055)	(0.070)
$LEGAL_{(t-1)}$	2.181*	1.937***
	(1.210)	(0.212)
$FINANCE_{(t-1)}$	0.001	−0.007***
	(0.001)	(0.001)
Intercept	0.005	2.574***
	(0.345)	(0.378)
Observations	2289	1816
R^2	0.579	0.539
Number of iden	310	275
F-Test	51.99***	35.48***
Hausman test	31.80*	76.54***

The table shows the regression results with firm fixed-effects. A detailed definition of variables is in the Appendix. The F-test contrasts the joint significance of all of the variables considered in the analysis. The Hausman specification tests the hypothesis of firm fixed-effects. Standard errors are located beneath the regression coefficients in parenthesis. Country, industry, and time dummy variables are included (although not reported) in the models. *, ** and *** indicate significance at the 10, 5 and 1% levels, respectively.

Comparatively talking, firm value of Brazilian and Chilean firms is much more sensitive to marginal changes of the accounting rate of return (e.g. see coefficients of 1.393 and 0.448 in the first and second models, respectively). Nevertheless, there is no large difference between subsamples in the sensitivity of firm value relative to changes in the insolvency risk. Finally, once estimates are controlled by the legal and regulatory environment, firm size seems to be significant only in the case of Brazilian and Chilean firms.

4.2.4. The impact of subprime crisis

The next step in the empirical analysis is to assess the impact of the subprime crisis on the determinants of firm value. We want to measure whether the explicative pattern of independent variables changed after the subprime crisis. In fact, previous literature seems to show that economic crises are suitable events to assess the performance of corporate governance systems (Baek et al., 2004; Erkens et al., 2012; Lemmon and Lins, 2003; Mitton, 2002; van Essen et al., 2013). For instance, Mitton (2002) argues that corporate governance becomes more critical in explaining cross-firm differences in performance during a financial crisis for two reasons. First, also supported by Johnson et al. (2000), it seems that during recession periods the controlling shareholders would be more prone to expropriate rent from minority shareholders as a consequence of lower return in their investments. Second, the disclosure of information in periods of crises seems to be higher, uncovering the weaknesses of the financial systems.

The World Bank statistics corroborate these statements, showing that the Latin American firms decrease their value during economic recession periods. For instance, the cross-firm market capitalization in the region went back from 68% in 2007 to 30% in 2008 as a share of the GDP.

The results tabulated in Table 5 are quite interesting. First of all, we can observe that, for the pooled sample, the concentration of ownership structure in the hands of the majority shareholder in the post-financial crisis period (from year 2008) is not a compo-

Table 5
FE estimates for pre- and post-subprime crisis period. Dependent variable is FV.

Variables	Pre (1)	Post (2)
OWN$_{(t-1)}$	−0.213** (0.107)	−0.052 (0.095)
SIZE	0.013 (0.046)	−0.139*** (0.041)
ROA	0.661*** (0.228)	0.990*** (0.171)
Z	0.006*** (0.000)	0.004*** (0.000)
IFRS	0.103 (0.110)	0.120*** (0.044)
LEGAL$_{(t-1)}$	1.476*** (0.182)	2.506*** (0.322)
FINANCE$_{(t-1)}$	−0.010*** (0.001)	0.004*** (0.001)
Intercept	3.567*** (0.399)	0.474 (0.370)
Observations	1,572	2,533
R^2	0.655	0.353
Number of iden	350	235
F-Test	62.91***	24.97***
Hausman test	52.82***	28.40**

The table shows the regression results with firm fixed-effects. A detailed definition of variables is in the Appendix. The F-test contrasts the joint significance of all of the variables considered in the analysis. The Hausman specification tests the hypothesis of firm fixed-effects. Standard errors are located beneath the regression coefficients in parenthesis. Country, industry, and time dummy variables are included (although not reported) in the models. *, ** and *** indicate significance at the 10, 5 and 1% levels, respectively.

nent which destroys value anymore, since the *OWN* variable enters the model insignificantly. A deeper analysis of the *OWN* variable revealed that its mean value decreased from 30.72% to 15.42% in the period after the financial crisis. We can infer from this that as a consequence of the recession, majority shareholders diluted their power perhaps as a consequence of getting rid of a considerable part of their investment; which eventually constrained their capacity to expropriate the wealth of minority shareholders. At country level, the *LEGAL* variable achieves even greater economic significance

after the financial crisis than before as a driver of firm value. The opportunistic behavior of market agents which triggered the financial recession seems to be better constrained in the period after the subprime crisis. Results reveal that the coefficient estimates of the *LEGAL* variable are comparatively higher in the post-crisis period than in the pre-crisis period, meaning that marginal changes in firm value are higher in the post-crisis period as a consequence of improvements in the legal and regulatory systems than in the pre-crisis period.

Last but not least, changes in firm value caused by improvements in financial system (*FINANCE*) react differently after the financial crisis. Only for that particular period of analysis we can accept our research hypothesis of a positive impact on firm value when the financial markets become more developed.

In summary, the corporate governance-firm value relationship for Latin American firms seems to show a pattern more in line with the current theoretical arguments in the post financial recession period.

4.2.5. Robustness checks

As firm value measured as Tobin's Q has been claimed to be a conflicting proxy, we proceed by checking the robustness of our major results by computing the market to equity ratio (*FV*1) as an alternative measure of firm value (Adam and Goyal, 2008; Ararat et al., 2014). This measure represents the value of all future cash flows to equity holders. An empirical advantage of the *FV*1 ratio over the *FV* ratio is that its construction does not require information on the market value of debt, nor does it require the estimation of replacement values. Although firms in technical bankruptcy might be concerned with the construction of *FV*1, since we removed from the sample all firms with negative equity, we are not subject to this major drawback in the estimates. Similar logarithmic transformation as in *FV* was applied in *FV*1.

Robustness checks are reported in Table 6, which basically replicates the last three models of Tables 3–5. As can be observed, there are no substantial changes in the estimates relative to those reported in the previous tables. Perhaps, the major difference is the loss of explicative power of the *OWN* variable. Although the

Table 6
Robustness checks. FE estimates. Dependent variable is FV1.

Variables	Overall Sample			Brazil+Chile	Other Countries	Pre	Post
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
OWN$_{(t-1)}$	−0.045* (0.057)	−0.019 (0.057)	−0.027* (0.050)	−0.095 (0.064)	−0.081 (0.069)	−0.034 (0.082)	−0.060 (0.061)
SIZE	−0.456*** (0.015)	−0.465*** (0.015)	−0.454*** (0.015)	−0.523*** (0.018)	−0.198*** (0.028)	−0.652*** (0.022)	−0.173*** (0.026)
ROA	0.947*** (0.104)	0.943*** (0.104)	0.934*** (0.104)	0.701*** (0.133)	1.367*** (0.154)	1.376*** (0.184)	0.757*** (0.114)
Z	0.000*** (0.000)	0.000*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.000*** (0.000)	0.001*** (0.000)	0.001*** (0.000)
IFRS	0.060* (0.032)	0.051* (0.032)	−0.023 (0.032)	−0.013 (0.061)	0.030 (0.042)	0.082 (0.099)	0.076*** (0.028)
LEGAL$_{(t-1)}$		0.001** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001 (0.001)	0.002*** (0.001)	0.001* (0.000)
FINANCE$_{(t-1)}$	−0.798*** (0.104)		−0.692*** (0.105)	−1.211 (0.038)	−1.063*** (0.129)	−0.450*** (0.136)	−1.485*** (0.195)
Intercept	5.173*** (0.101)	4.807*** (0.604)	5.332*** (0.104)	6.255*** (0.180)	2.829*** (0.211)	7.345*** (0.197)	4.120*** (0.177)
Observations	6,443	6,444	6,443	4,099	2,344	2,843	3,600
R^2	0.405	0.405	0.409	0.440	0.428	0.575	0.135
Number of iden	769	769	769	452	317	494	275
F-Test	174.75***	167.22***	170.22***	123.65***	68.09***	197.38***	34.21***
Hausman test	4391.68***	1466.68***	4589.47***	1112.11***	189.03***	1679.63***	663.26***

The table shows the regression results with firm fixed-effects. A detailed definition of variables is in the Appendix. The F-test contrasts the joint significance of all of the variables considered in the analysis. The Hausman specification tests the hypothesis of firm fixed-effects. Standard errors are located beneath the regression coefficients in parenthesis. Country, industry, and time dummy variables are included (although not reported) in the models. *, ** and *** indicate significance at the 10, 5 and 1% levels, respectively.

negative relation is still present, it is only statistically significant in the first and third models computed for the whole sample. When the sample is split into groups by institutional systems (e.g. models 4 and 5) and into specific models for the pre and post financial recession periods (e.g. models 6 and 7), firm value seems to be impervious to changes in the corporate ownership structure. This loss of significance might be the consequence of the inherent measure of our alternative proxy of firm value ($FV1$) which is focused on equity only and not on assets, which at the end of the day, are the source of value. Alternatively, we also used the capital expenditure over the net value of property, plant, and equipment ratio as a proxy of firm value (Adam and Goyal, 2008), in order to assess the impact of corporate ownership concentration. Results for this variable are not tabulated, but available upon request. In this case, most of the variables showed similar relationships but ownership concentration was even more insignificant. Thus, we may conclude that as long as the measure of firm value comprises both the investment portfolio in assets and the leverage position of the company, the ownership concentration becomes significant; otherwise it loses most of its explicative power.

In Table 6 we can also observe that country-level variables still hold the same relations; although with some very minor loss of significance. While the directions of relationships were held with the institutional variables when capital expenditure measure was used as a dependent variable, the coefficients were barely significant. What might explain this loss of significance power using capital expenditure is that this is also more a proxy of other variables, such as investment capacity, rather than firm value.

Nevertheless, we believe that those results reported with FV and $FV1$ variables are quite consistent supporting the general robustness of our major findings.

5. Conclusions

The goal of this paper is to assess whether changes in governance within a country (e.g. legal and regulatory system and financial development) and changes in corporate ownership concentration can predict a change in the value of Latin American firms. At the firm-level, our results confirm that as the level of ownership concentration increases, firm value decreases as supported by the expropriation hypothesis.

Country-level governance variables show dissimilar influence on firm value. For instance, contrary to what was expected, the development of the financial system impacts negatively on firm value. In immature financial markets like in Latin America, firms take advantage of both the asymmetries of information and the multiple market frictions to be overvalued. As market competition increases as a consequence of financial development, the market value of the firm drops. On the other hand, we conclude that as the regulatory quality improves, firm value increases. We observe that investors' rights legal protection as well as the rule of law are the most significant legal drivers of firm value. Thus, better conditions for the market participants enhance firm growth and, subsequently, the growth of the economies and the societies as a whole.

This study has both corporate governance and policy level implications. At the corporate governance level, we provide evidence that a good regulatory system which efficiently protects the rights of the shareholders is associated with a premium in the market value of the firm. This fact generates higher market confidence which allows firms to undertake profitable investment options. Despite this positive view of the efficiency of regulatory systems in Latin America, we also observe that expropriation of minority shareholders by the controlling shareholders still occurs. Consequently, it is suggested that policy makers undertake measures to further improve the rights of minority shareholders. Moral hazard problems, such as the expropriation of minority shareholders, need to be addressed in Latin America. Finally, and in the same line, we observe that there is a demand for improvements in the financial systems. Despite the recognized advances in the development of capital markets in Latin America in general, and in some countries in particular, there is still a lack of competition which allows firms to be overvalued. Therefore, measures to further develop the financial systems are needed to alleviate these market imperfections.

Appendix A.

Firm Value:

$$i. FV = \frac{MkCptz_{it} + TD_{it}}{TA_{it}}$$

where $MkCptz_{it}$ corresponds to the market capitalization of the firm i in year t. TD_{it} is the total liabilities and TA_{it} is the firm's total assets.

$$ii. FV = \frac{MkCptz_{it}}{CE_{it}}$$

where CE_{it} is the total common equity.

Corporate ownership structure:

OWN corresponds to the percentage of outstanding shares in the hands the controlling shareholder.

Firm Size:

$$SIZE = Ln(TA_{it})$$

Profitability:

$$ROA = \frac{EBT_{it}}{TA_{it}}$$

where EBT_{it} is the pretax income.

Insolvency Risk:

$$Z = 6.56WC_{it} + 3.26RE_{it} + 6.72EBIT_{it} + 1.05BvE_{it} + 3.25$$

where WC_{it} is the working capital over total assets, RE_{it} is the retained earnings over total assets, $EBIT_{it}$ is the earnings before interest and taxes, and BvE_{it} is the book value of equity over total liabilities.

IFRS:

$$IFRS = \begin{cases} 1, & if the company uses IFRS \\ 0, & otherwise \end{cases}$$

where $IFRS$ is the International Financial Reporting System.

Legal and Regulatory Systems:

All the following legal system variables were obtained from Kaufmann et al. (2011) where the indexes range from approximately -2.5 (weak) to 2.5 (strong) governance performance, although for our sample these variables do not have such extreme values.

i) *VA* measures the Voice and accountability.
ii) *PS* measures the Political stability and absence of violence/terrorism
iii) *GE* measures the Government effectiveness.
iv) *RQ* measures the Regulatory quality
v) *RL* measures the Rule of law
vi) *CC* measures the Control of corruption

Bank Concentration: *BankConc* is the market share of the three largest banks by country.

Financial Development:

All the following financial development variables were obtained from Beck et al. (2000).

i) *DBAGDP* is the claims on domestic real nonfinancial sector by deposit money banks as a share of GDP, calculated using the following deflation method: $\frac{0.5\left[\frac{F_t}{P_{et}}+\frac{F_{t-1}}{P_{et-1}}\right]}{\left[\frac{GDP_t}{P_{at}}\right]}$; where F is deposit money bank claims, P_e is end-of the period Consumer Price Index (CPI), and P_a is average annual CPI.

ii) *PCBGDP* is the Private credit by deposit money banks and other financial institutions as a share of GDP, calculated using the following deflation method: $\frac{0.5\left[\frac{F_t}{P_{et}}+\frac{F_{t-1}}{P_{et-1}}\right]}{\left[\frac{GDP_t}{P_{at}}\right]}$; where F is the credit to the private sector, P_e is end-of the period Consumer Price Index (CPI), and P_a is average annual CPI.

iii) *BCBD* is the private credit by deposit money banks as a share of demand, time and saving deposits in deposit money bank.

iv) *SMKGDP* which is the value of listed shares to GDP, calculated using the following deflation method: $\frac{0.5\left[\frac{F_t}{P_{et}}+\frac{F_{t-1}}{P_{et-1}}\right]}{\left[\frac{GDP_t}{P_{at}}\right]}$; where F is the stock market capitalization, P_e is end-of the period CPI, and P_a is average annual CPI.

v) *SMKVTGDP* is the total shares traded on the stock market exchange to GDP.

vi) *SMKTO* is the ratio of the value of total shares traded to average real market capitalization, the denominator is deflated using the following method: $\frac{\frac{T_t}{P_{at}}}{0.5\left[\frac{M_t}{P_{et}}+\frac{M_{t-1}}{P_{et-1}}\right]}$; where T is total value traded, M is the stock market capitalization P_e is end-of the period CPI, and P_a is average annual CPI.

References

Adam, T., Goyal, V.K., 2008. The investment opportunity set and its proxy variables. J. Financ. Res. 31, 41–63.
Altman, E.I., 2005. An emerging market credit scoring system for corporate bonds. Emerg. Markets Rev. 6, 311–323.
Ang, J.S., Cole, R.A., Lin, J.W., 2000. Agency costs and ownership structure. J. Finance 55, 81–106.
Ararat, M., Black, B., Yurtoglu, B.B., 2014. Corporate governance, business groups, and market value: time-series evidence from Turkey. Northwestern Law & Econ Research Paper No. 13-19; ECGI—Finance Working Paper. Available at SSRN: http://ssrn.com/abstract=2277768 or http://dx.doi.org/10.2139/ssrn.2277768.
Attig, N., El Ghoul, S., Guedhami, O., 2009. Do multiple large sharholders paly a corporate governance role? Evidence from East Asia. J. Financ. Res. 32, 395–422.
Baek, J.-S., Kang, J.-K., Suh Park, K., 2004. Corporate governance and firm value: evidence from the Korean financial crisis. J. Financ. Econ. 71, 265–313.
Balasubramanian, N., Black, B., Khanna, V., 2010. The relation between firm-level corporate governance and market value: a case study of India. Emerg. Markets Rev. 11, 319–340.
Baltagi, B.H., 2013. Econometric Analysis of Panel Data, 5th ed. John Wiley & Sons Ltd., Chichester, UK.
Beck, T., Demirgüç-Kunt, A., Levine, R., 2000. A new database on the structure and development of the financial sector. World Bank Econ. Rev. 14, 597–605.
Bekaert, G., Harvey, C.R., 2002. Research in emerging markets finance: looking to the future. Emerg. Markets Rev. 3, 429–448.

Black, B., de Carvalho, A.G., Gorga, É., 2012. What matters and for which firms for corporate governance in emerging markets? Evidence from Brazil (and other BRIK countries). J. Corp. Finance 18, 934–952.
Black, B., de Carvalho, A.G., Khanna, V., Kim, W., Yurtoglu, B., 2014. Methods for multicountry studies of corporate governance: evidence from the BRIKT countries. J. Econom. 183, 230–240.
Black, B., Jang, H., Kim, W., 2006. Predicting firms' corporate governance choices: evidence from Korea. J. Corp. Finance 12, 660–691.
Buchuk, D., Larraín, B., Muñoz, F., Urzúa, F., 2014. The internal capital markets of business groups: evidence from intra-group loans. J. Financ. Econ. 112, 190–212.
Chari, A., Ouimet, P.P., Tesar, L.L., 2010. The value of control in emerging markets. Rev. Financ. Studies 23, 1741–1770.
Choi, I., 2001. Unit root tests for panel data. J. Int. Money Finance 20, 249–272.
Chua, C.T., Eun, C.S., Lai, S., 2007. Corporate valuation around the world: the effects of governance, growth, and openness. J. Bank. Finance 31, 35–56.
Claessens, S., Djankov, S., Fan, J.P.H., Lang, L.H.P., 2002. Disentangling the incentive and entrenchment effects of large shareholdings. J. Finance 57, 2741–2771.
Claessens, S., Yurtoglu, B.B., 2013. Corporate governance in emerging markets: a survey. Emerg. Markets Rev. 15, 1–33.
Crisóstomo, V.L., López, F., Vallelado, E., 2014. Nonfinancial companies as large shareholders alleviate financial constraints of Brazilian firm. Emerg. Markets Rev. 18, 62–77.
De Jong, A., DeJong, D., Hege, U., Mertens, G., 2009. Blockholders and leverage: when debt leads to higher dividends. ECGI—Finance Working Paper No. 261/2009. Available at SSRN: http://ssrn.com/abstract=1461492 or http://dx.doi.org/10.2139/ssrn.1461492.
De Jong, A., Kabir, R., Nguyen, T.T., 2008. Capital structure around the world: the roles of firm- and country-specific determinants. J. Bank. Finance 32, 1954–1969.
de Miguel, A., Pindado, J., de la Torre, C., 2004. Ownership structure and firm value: new evidence from Spain. Strategic Manage. J. 25, 1199–1207.
de Miguel, A., Pindado, J., de la Torre, C., 2005. How do entrenchment and expropriation phenomena affect control mechanisms? Corp. Gov. Int. Rev. 13, 505–516.
Demirgüç-Kunt, A., Levine, R., 2004. Financial Structure and Economic Growth: A Cross-country Comparison of Banks, Markets, and Development, 1st ed. Massachusetts Institute of Technology, Massachusetts.
Demirguç-Kunt, A., Maksimovic, V., 1998. Law, finance, and firm growth. J. Finance 53, 2107–2137.
Durnev, A.R.T., Kim, E.H., 2005. To steal or not to steal: firm attributes, legal environment, and valuation. J. Finance 60, 1461–1493.
Erkens, D.H., Hung, M., Matos, P., 2012. Corporate governance in the 2007–2008 financial crisis: Evidence from financial institutions worldwide. J. Corp. Finance 18, 389–411.
Espinosa, C., 2009. Estructura de propiedad y desempeño de la firma: El caso chileno. Acad. Rev. Latinoam. Adm. 43, 41–62.
Garay, U., González, M., 2008. Corporate governance and firm value: the case of Venezuela. Corp. Gov. Int. Rev. 16, 194–209.
Gibson, M.S., 2003. Is corporate governance ineffective in emerging markets? J. Financ. Quant. Anal. 38, 231–250.
Gugler, K., Mueller, D.C., Peev, E., Segalla, E., 2013. Institutional determinants of domestic and foreign subsidiaries' performance. Int. Rev. Law Econ. 34, 88–96.
Haugen, R.A., Baker, N.L., 1996. Commonality in the determinants of expected stock returns. J. Financ. Econ. 41, 401–439.
Jensen, M.C., Meckling, W., 1976. Theory of the firm: managerial behaviour: agency cost and ownership structure. J. Financ. Econ. 3, 305–360.
Johnson, S., Boone, P., Breach, A., Friedman, E., 2000. Corporate governance in the Asian financial crisis. J. Financ. Econ. 58, 141–186.
Kaufmann, D., Kraay, A., Mastruzzi, M., 2011. The worldwide governance indicators: methodology and analytical issues. Hague Int. Rule Law 3, 220–246.
Klapper, L.F., Love, I., 2004. Corporate governance, investor protection, and performance in emerging markets. J. Corp. Finance 10, 703–728.
La Porta, R., Lopez-De-Silanes, F., Shleifer, A., 1999. Corporate ownership around the world. J. Finance 54, 471–517.
La Porta, R., Lopez-De-Silanes, F., Shleifer, A., 2006. What works in securities laws? J. Finance 61, 1–32.
La Porta, R., Lopez-De-Silanes, F., Shleifer, A., Vishny, R., 1998. Law and finance. J. Political Econ. 106, 1113–1155.
Larcker, D.F., Rusticus, T.O., 2010. On the use of instrumental variables in accounting research. J. Account. Econ. 49, 186–205.
Lemmon, M.L., Lins, K.V., 2003. Ownership structure, corporate governance, and firm value: evidence from the East Asian financial crisis. J. Finance 58, 1445–1468.
Lin, J.-C., Tai, V.W., 2013. Corporate governance and analyst behavior: evidence from an emerging market. Asia Pacific J. Financ. Studies 42, 228–261.
Lins, K.V., 2003. Equity ownership and firm value in emerging markets. J. Financ. Quant. Anal. 38, 159–184.
López, F., Crisóstomo, V.L., 2010. Do leverage, dividend payout, and ownership concentration influence firms' value creation? An analysis of Brazilian firms. Emerg. Markets Finance Trade 46, 80–94.
Love, I., 2011. Corporate governance and performance around the world: what we know and what we don't. World Bank Res. Obs. 26, 42–70.
McConnell, J.J., Servaes, H., 1990. Additional evidence on equity ownership and corporate value. J. Financ. Econ. 27, 595–612.

Mitton, T., 2002. A cross-firm analysis of the impact of corporate governance on the East Asian financial crisis. J. Financ. Econ. 64, 215–241.

Mitton, T., 2004. Corporate governance and dividend policy in emerging markets. Emerg. Markets Rev. 5, 409–426.

Morey, M., Gottesman, A., Baker, E., Godridge, B., 2009. Does better corporate governance result in higher valuations in emerging markets? Another examination using a new data set. J. Bank. Finance 33, 254–262.

Naceur, S.B., Omran, M., 2011. The effects of bank regulations, competition, and financial reforms on banks' performance. Emerg. Markets Rev. 12, 1–20.

Omran, M.M., Bolbol, A., Fatheldin, A., 2008. Corporate governance and firm performance in Arab equity markets: does ownership concentration matter? Int. Rev. Law Econ. 28, 32–45.

Paredes, R., Flor, L., 1993. Estructura de propiedad: ¿Maximizan ganancias las empresas en chile? Trimest. Econ. LX (4, 885–908.

Raddatz, C., 2006. Liquidity needs and vulnerability to financial underdevelopment. J. Financ. Econ. 80, 677–722.

Rajan, R.G., Zingales, L., 1998. Financial dependence and growth. Am. Econ. Rev. 88, 559–586.

Richter, A., Weiss, C., 2013. Determinants of ownership concentration in public firms: the importance of firm-, industry- and country-level factors. Int. Rev. Law Econ. 33, 1–14.

Sáenz González, J., García-Meca, E., 2014. Does corporate governance influence earnings management in Latin American markets? J. Bus. Ethics 121, 419–440.

Saona, P., 2014. Internal corporate governance mechanisms as drivers of firm value: panel data evidence for Chilean firms. Rev. Managerial Sci. 8, 575–604.

Saona, P., Vallelado, E., 2005. Ownership structure and growth opportunities as determinants of bank debt: evidence from Chilean companies. Manage. Res. 3, 119–134.

Shan, X., Duchi, L., Jianbai, H., 2015. Corporate social responsibility, the cost of equity capital and ownership structure: an analysis of Chinese listed firms. Aust. J. Manage. 40, 245–276.

Shleifer, A., Vishny, R.W., 1986. Large shareholders and corporate control. J. Political Econ. 94, 461–488.

Soderstrom, N.S., Sun, K.J., 2007. IFRS adoption and accounting quality: a review. Eur. Account. Rev. 16, 675–702.

van Essen, M., Engelen, P.-J., Carney, M., 2013. Does good corporate governance help in a crisis? The impact of country- and firm-level governance mechanisms in the european financial crisis. Corp. Gov. Int. Rev. 21, 201–224.

Yang, C.-C., Lee C.-f. Gu, Y.-X., Lee, Y.-W., 2010. Co-determination of capital structure and stock returns—a LISREL approach: an empirical test of Taiwan stock markets. Quart. Rev. Econ. Finance 50, 222–233.