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# Corporate governance and cost of equity: empirical evidence from Latin American companies

Emanuele Teti, Alberto Dell'Acqua, Leonardo Etro and Francesca Resmini

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## Abstract

**Purpose** – This paper aims to investigate the extent to which corporate governance (CG) systems adopted by Latin American listed firms affect their cost of equity capital. Several studies on the link between the two aforementioned dimensions have been carried out, but none in the context of Latin American firms.

**Design/methodology/approach** – A CG index is created by taking into account the peculiarities of each country and the recommendations given by the corresponding CG institutes. In particular, to assess the level of CG quality, three sub-indexes have been identified: “Disclosure”, “Board of Directors” and “Shareholder Rights, Ownership and Control Structure”.

**Findings** – The results indicate a negative relationship between CG quality and the cost of equity. In particular, the “Disclosure” component is the one mostly affecting the cost of equity.

**Research limitations/implications** – This study contributes to the literature by adding knowledge on the relationship between CG and cost of capital considering, for the first time, the overall Latin American market.

**Practical implications** – The paper proves that institutional investors all over the world are disposed to pay a premium to invest in firms with effective CG standards; moreover, this premium is higher in emerging countries such as those analyzed in this paper, rather than in developed countries.

**Originality/value** – To the authors' knowledge, this is the first paper empirically investigating the relationship between CG and cost of capital in Latin America.

**Keywords** Disclosure, Corporate governance, Board of directors, Ownership, Cost of capital, Latin America

**Paper type** Research paper

## Introduction

The relationship between corporate governance (CG), firm value and the cost of capital has always been at the center of several studies, as effective CG practices are usually associated with higher firm value and profitability (Lemmon and Lins, 2003). In fact, good CG standards can reduce agency problems by limiting opportunistic behavior of managers, monitoring their actions and enhancing the quality of firms' information flows. Nonetheless, the way in which firm-level CG protection of investors has an effect on firm value is still unclear (Hail and Leuz, 2006). It can be that “the valuation effect reflects first levels of expropriation and/or different investment opportunities [. . .]” (Chen *et al.*, 2009). However, effective CG can also reduce the riskiness and, therefore, the market premium required by investors, and ultimately decrease the cost of capital. The relationship between good CG practices and the cost of capital is still questionable, as it depends on how CG differences lead to quantifiable variation in market risk across companies and countries (Chen *et al.*, 2009).

This paper investigates the extent to which CG systems adopted by Latin American listed firms affect their cost of equity. Indeed, several studies regarding the link between the two aforementioned dimensions have been carried out (Chen *et al.*, 2009; Durnev and Kim,

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2005; Klapper and Love, 2004). So far, no study analyzing the specific relationship between CG and cost of capital of the Latin American firms has been conducted. The need for studying this subject in the Latin American context has become more pressing due to the adoption of an enriched governance framework (contained in the White Paper on Corporate Governance in Latin America) and the emerging requests for measuring the related results.

We fill this gap by analyzing a comprehensive and completely new data set and specific CG measures designed for Latin American firms by means of a CG index, created for the purpose and based on the official financial statements of the analyzed companies.

We find a negative relationship between CG and the cost of equity. In particular, we indicate that the factor affecting the cost of equity the most is “Disclosure” and the factor affecting to a smaller extent is the “Board of directors”. We also prove that the “Shareholder Rights, Ownership and Control Structure” component does not have a significant influence on the cost of equity. From our analysis, it would emerge that firms of emerging countries, and Latin American ones particularly, should pay higher attention to the CG issues in value creation. Furthermore, the novelty of this paper consists in its unique data set, as, while some other studies have been conducted on the relationship between CG and cost of capital (or firm value), this is, to our knowledge, the very first paper examining an important geographical and economic area such as Latin America.

The remainder of this paper is structured as follows. The second section analyzes the CG practices currently in use in Latin America. The third section reviews the previous related literature. The fourth section presents the data sample and research methodology and puts forward the hypotheses of the work. The fifth section discusses the results of the paper. The last section concludes the paper by summarizing the main findings and offering some suggestions for future research.

### Corporate governance in Latin America

Good CG is of crucial importance in the private sector, for the economy to grow and the welfare to enhance thanks to investment growth, firm performance and capital market efficiency (Renders *et al.*, 2010). These benefits are listed in the “White Paper on Corporate Governance in Latin America”, drafted by “The Latin American Roundtable on Corporate Governance”. The White Paper uses as a conceptual framework, the “OECD Principles of Corporate Governance”, to analyze, discuss and give recommendations regarding the importance of good CG practices for Latin American countries. This document has contributed to the foundation of the “Latin American Companies Circle”, created in 2005 and supported by the OECD. The Circle is composed of 15 leading companies that should be taken as example by other firms in the transition toward good CG practices (OECD, 2012). Indeed, the companies in the Circle showcase how good practices could lead to benefits for the firm and provide important lessons regarding the importance of board of directors’ composition, shareholders’ relations and high level of information disclosure.

Collected information provides evidence that the impact of voluntary adoption or compliance with the Codes of Best Practices has led to limited enhancement in the CG quality of companies. Indeed, companies tend to comply with legal requirements only (Sundaramurthy and Lewis, 2003). Thus, even though several initiatives have been taken, CG in Latin America still needs improvements (Garay and Gonzales, 2008). In fact, the evidence indicates that there is slow movement regarding encouraging legal reforms aimed to protect investors and make emerging markets more attractive to them (Chong and Lopez-de-Silanes, 2007). Yet, some countries are moving toward relevant enhancements.

The situation of the analyzed countries, as for CG, is then briefly examined as follows.

### *Brazil*

In Brazil, shareholders have been concerned for several years about investors' protection; however, it was difficult to drive changes in the regulatory and legal framework. The problem was tackled in 2000, when the BOVESPA (Brazilian Stock Exchange) launched three new listing segments ("Novo Mercado", "Level 1" and "Level 2") with more stringent CG requirements (Braga-Alves and Shastri, 2011). In particular, the "Novo Mercado" requires the stock capital of the listed firms to be composed only by common shares and prohibits non-voting shares. Moreover, to protect minorities in case of changes in the control of the company for constituents of "Novo Mercado" and "Level 2", full tag-along rights are extended to all shareholders. These rights are not present in the traditional Brazilian stock market, as this requirement was valid only for voting shareholders. Furthermore, in 2010, changes in the requirements related to the board composition also occurred, with a mandatory chairman/CEO separation and the introduction of a code of conduct (to be drafted taking as framework the IBCG Code of Best Practices). Also, new rules regarding transparency were issued, requiring information on board nominees and remuneration to be disclosed.

### *Mexico*

In Mexico, CG standards have been improved in recent years as well, thanks to new requirements set by regulators. In particular, starting from 2005, according to the Mexican Securities Law, it is mandatory for the board to be composed of 25 per cent independent directors. In particular, the Universidad Anáhuac, which is one of the two organizations evaluating the Mexican Index of Corporate Governance, has introduced more stringent standards to better assess the board independence. Moreover, as a consequence of the revision of the Best Practices Code in 2010 (which, together with the Security Market Law introduced new board practices), listed companies (SABs) are now required to disclose their compliance with the Code.

### *Peru*

Since 2002, when the Corporate Governance Code was first issued in Peru, the compliance of companies has not been positive. Consequently, to stimulate companies to adopt the new norms, the Bolsa de Valores Lima (BVL, Lima Stock Exchange) launched the "Good CG Index" in 2008. This index has the aim to encourage firms to self-evaluate themselves, to assess their level of CG goodness against the code's principles. Moreover, the "Corporate Governance Award (the Key Award)" was introduced by the BVL to assess the best performing firms on an annual basis.

### *Chile*

In Chile, starting from 2009, when some companies and securities laws were amended, it became mandatory to include at least one independent director in the board. This norm is applied for all listed companies, with the exception of very small listed companies that have concentrated ownership. Moreover, the chairman of the Directors' Committee must be an independent director.

### *Colombia*

CG practices in Colombia are strictly related to the growth rate of the State, which is the strongest in the whole of Latin America at the moment. This growth put Colombia in an advantaged position. Economic development, together with improved CG practices, has attracted foreign investors to the country; in fact, shares owned by foreign investors passed from 1 per cent in 2006 to 26 per cent in 2014. However, the country has one of the highest levels of corruption and narco-terrorism and thus suffers from many civil problems. Some relevant policies were applied just before the financial crisis to give confidence to the country and breath to firms by improving their economic performances. Among these

political actions, the “Transparency Pacts” signed by the main political representatives has reinforced the CG of firms, in addition to the implementation of programs to fight corruption. Some studies have, however, shown that in Colombia, there is a positive influence of large blockholders on firms’ valuation and performance, even though the relationship is not monotonic (Gutierrez and Pombo, 2005).

We summarize the main issues related to CG in Latin American countries in Table I, which reports the relevant CG laws, regulations and Best Practice Codes of each country analyzed in this paper (Brazil, Mexico, Peru, Chile, Colombia).

### Literature review

This paper aims to establish whether more effective CG results in reduction of firm cost of capital. It also investigates which of the sub-aspects of CG have higher impact on the cost of equity. Underpinning these research questions, there is the well-known agency theory, which states that there are conflicts between shareholders and managers inside the firm due to their different objectives. The stronghold of the agency theory is the assumption that principals and agents have divergent interests. According to it, the principal can reduce the divergence by fixing suitable incentives for the agent, and by supporting monitoring costs aimed to limit opportunistic actions carried out by the agent (Hill and Jones, 1992). Moreover, the principal can also pay the agent and spend resources to be sure that the agent itself will not take some actions able to disadvantage the principal. However, some level of conflict remains. Effective CG, together with investors’ legal protection at a country level, is able to reduce these conflicts, thus increasing the value of the firm and ultimately reducing the cost of equity (La Porta *et al.*, 2000). In fact, shareholders will be willing to have lower expectations in terms of return in those companies in which CG is able to mitigate agency costs and therefore in which the rights of shareholders themselves are more protected (Khanchel El Mehdi, 2007; Garay and Gonzales, 2008). Besides, the evidence has shown that “good” CG practices are not universal but depend on country characteristics (Black *et al.*, 2012). CG can act in three main ways to mitigate agency costs and thus reduce the cost of capital. First, it can decrease the risk of expropriation by managers. The risk of expropriation not only depends on firm-specific factors but also on market variables (Durnev and Kim, 2005). In particular, it has been demonstrated that the

<b>Table I Corporate governance laws, regulations and Best Practices Codes</b>			
<i>Country</i>	<i>Law</i>	<i>Regulation</i>	<i>Best Practices Code</i>
Brazil	Corporation Act (Law 6404/76) Art. 153,154, 155,157,158, 159 Civil Code, Art 1010, 1011, 1013, 1016	Instruction 358 CVM; Instruction 480 CVM, 2009: Art. 42, 43 Novo Mercado Rules, 2000	Best Practices Code, 2009 2.1, 2.2, 2.3.2
Chile	Ley 18.045 Securities Markets Act, 1981, Art 10, 55-57 Ley 18.046 Corporations Act, 1981, Art 7, 39, 40-43, 45, 46 Amended by Ley No 19.705, 2000 and Ley N° 20.382, 2009	Decree 587, 1980 SVS General Rule No. 30 and 118 Circular 1956	
Colombia	Law No. 964, 2005, Art 44 Law No. 222, 1995, Art. 22,23, 24, 25 Commercial Code, 1971, Art 185, 200	Decree 663, Art 72 Circular Basica Juridico, 7.1 Decree 2555, 2010, Art. 3.1.9.1.3, 5.2.4.1.5 Decree 2955, 2010, Art 2.6.13.1.7., y 2.6.13.1.8 Issuers Circular, 2003, Anexo S	Best Practices Code, 2007 Medida No. 17, 18, 19, 20
Mexico	Securities Market Law (LMV), 2005 Art. 26, 28, 29, 30, 32- 35, 41, 125		Best Practices Code, 2010 Practice 7, 21, 22
Peru	Companies Law, 1997, Art. 171, 173, 175, 176, 177, 180, 348, 351, 354, 373, 376, 379 Securities Market Law, 1996, Art 12, 32, 34, 41, 43, 51	CONASEV Regulations, No 359- 1993 and No 009-2006	Best Practices Code, 2002 Principle II.B, II.D, V.A, V.B, V.C, V.E, V.F

role of CG is more important in periods of market crisis, when managers can conduct expropriation more easily and largely than in robust periods (Johnson *et al.*, 2000). In negative periods, the market risk can increase and, without appropriate CG practices, could give rise to higher return on equity, as required by shareholders who bear a higher risk. Second, CG can protect against agency costs by decreasing the cost of monitoring usually carried out by external investors. The lower requirement of monitoring can be converted into lower expected returns from the shareholders, as they support a lower risk (Lombardo and Pagano, 2002). Finally, effective CG can be useful to limit information asymmetry. The literature shows that in firms with effective CG standards, insider trading is lower, while where CG is weak, for example in family businesses, insider trading is more hostile (Crespi and Martin-Oliver, 2015; Hung and Trezevant, 2003; Bhattacharya and Daouk, 2002).

Another aspect that must be considered is that most previous studies on the subject focus on the relationship between CG and firm value, rather than cost of capital, as this study does. Since a long time, scholars have debated the best indicators to be compared to CG. For instance, Morey *et al.* (2009) have found that improvements in CG result in considerably higher firm valuations. However, the use of cost of equity, in place of the firm value, generates some advantages. Differently from firm value, the required return rate is based on the current risk of the operations of the firm (Drobetz *et al.*, 2004; Botosan and Plumlee, 2002). Moreover, the cost of equity reacts in a more accurate way to annual changes in the governance of the firm, and it is not affected by exogenous factors, which instead influence profitability and future growth (Hail and Leuz, 2006). Therefore, the choice of cost of equity, rather than firm value, appears to be a more appropriate one, as it is not biased by variation in growth opportunities (Botosan 1997; Healy *et al.*, 1999; Botosan and Plumlee, 2002).

The literature on the relationship between CG and firm value or cost of equity is sufficiently wide, even though poor evidence is offered for the countries analyzed in this paper (Dittmar and Mahrt-Smith, 2007; Masulis *et al.*, 2007). The negative relationship with cost of equity or the positive relationship with firm value, as measured in different ways, is proved by different contributions (Chen *et al.*, 2010; Core *et al.*, 2006). Gompers *et al.* (2003) find that shareholders' rights are positively correlated with profits, firm value and sales growth, and negatively correlated with capital expenditures and corporate acquisitions. Dittmar and Mahrt-Smith (2007) as well as Masulis *et al.* (2007) observe that ineffective CG standards result in decrease of shareholder value, as a consequence of the erroneous capital budgeting practices by managers, or because of devaluation of cash resources. Bebchuk *et al.* (2004) construct an "entrenchment index" and find that increases in this index are associated with reduction in firm value (measured by Tobin's Q) and lower or negative abnormal returns during the period 1990-2003. Brown and Caylor (2006) observe a positive association between firm performance and a CG score by identifying six CG provisions. Schauten *et al.* (2008) analyze the association between CG quality and excess cash value in listed European firms, distinguishing between common-law and civil-law countries, finding that CG is positively associated with excess cash value. Lei and Song (2005) show that better ratings in the CG index are associated with higher firm value. Mande *et al.* (2012) find that a reduction in agency costs by means of more effective CG practices increases the propensity of companies to use equity rather than debt.

Even though studies on developing countries are limited, the main literature would indicate that the positive relationship between CG and firm value (negative relationship with cost of equity) is not only confirmed but reinforced in these contexts (Chen *et al.*, 2009). In fact, it seems that good CG is able to guarantee better results in countries with weak legal settings, as the improvements that can be obtained are even larger than those achievable in countries with a more effective legal background. The literature fails to identify an association between effective CG and cost of equity in less developed countries, and no study has shown evidence of the same in the Latin American market. This paper tries to make a contribution in this direction.



## Data and methodology

### *The sample composition*

Our sample is composed of the firms included in the Morgan Stanley Capital International (MSCI) Emerging Markets Latin America Index, which captures large- and mid-cap representations across five emerging markets in Latin America. With 137 constituents, the index covers approximately 85 per cent of the free float-adjusted market capitalization in each country (MSCI, 2015). Starting from the total number of firms, financial service and utility industries are excluded from the sample, due to their peculiarities regarding CG and cost of equity estimation. This was also a consequence of the privatization process taking place in the utility industries in the past decade. Thus, the resulting sample is composed of 90 firms for a total number of 270 observations, taking into account the period from 2011 to 2013. Of these, 53.3 per cent are from Brazil, 25.6 per cent Mexico, 12.2 per cent Chile, 5.6 per cent Colombia and 3.3 per cent Peru. Even though the number of observations is limited, the sample essentially covers 100 per cent of the population. Table II summarizes the composition of the sample by country weights and by sector weights and their corresponding market capitalization.

### *The cost of equity estimation*

The cost of equity is computed for every firm in the sample for the period of analysis (2011-2013). There is no consensus on the most appropriate method to estimate the cost of equity in Latin American countries. Even though the majority of the literature is in favor of models that embed the country risk in the discount rate, other academics believe that it is better to consider it directly through adjustments in the cash flows generated by the firm. James and Koller (2000) as well as Bruner *et al.* (2003) believe that country risk adjustments in the discount rate could result in overestimations for some countries and underestimations for others, because these risks are extremely volatile and subject to continuous changes. According to Copeland *et al.* (2000), country risks in emerging markets can be included through cash flows adjustments, obtained considering a weighted average of the probability that every scenario has to occur. For each scenario, it is necessary to consider macroeconomic variables such as inflation, gross domestic product growth, exchange rates and interest rates. Copeland *et al.* (2000) suggest using this method within the application of the global-capital asset pricing model (CAPM) and thus assuming that markets are perfectly integrated and investors are globally diversified.

In this study, we adopt the lambda approach. The reason for this choice is that this approach allows each firm to have an exposure to country risk that is different from its exposure to other market risks.

According to the lambda approach, we define the extent of a company's exposure to country risk to be lambda ( $\lambda$ ). Similar to beta, a lambda will be scaled around 1.00, with a lambda of 1.00 indicating a company with average exposure to country risk and a lambda above or below 1.00 indicating above or below average exposure to country risk. The rationale behind this choice is that this approach allows each company to have an

**Table II** Sector weights and market cap

<i>Sector</i>	<i>Sector weights (%)</i>	<i>Market cap (th USD)</i>	<i>Market cap (%)</i>
Consumer discretionary	28.89	791.469	8.98
Materials	23.33	2.211.807	25.10
Information technology	15.56	209.988	2.38
Industrials	13.33	798.753	9.07
Health care	7.78	94.991	1.08
Energy	5.56	1.448.375	16.44
Consumer staples	3.33	2.299.323	26.10
Telecommunication services	2.22	956.323	10.85

exposure to country risk that is different from its exposure to all other market risks (Damodaran, 2009).

The cost of equity for a firm in an emerging market can then be written using the following formula:

$$K_e = R_f + \beta(\text{Mature Market Equity Risk Premium}) + \lambda(\text{Country Risk Premium})$$

All data are denominated in US dollars to ease the comparability of the results.

The estimation of the country risk premium is carried out using the composite estimate. This indicator multiplies the bond default spread times the relative volatility of equity market in a country, to the volatility of the bond market used, as indicated by the following formula:

$$\text{Country risk premium} = \text{Country Default Spread} * (\sigma \text{ Equity} / \sigma \text{ Country Bond})$$

To estimate lambda, the revenue approach is used, based on the belief that a firm that has a smaller percentage of its revenues from a certain market should be less exposed to that country risk. Lambda is calculated according to this formula (Damodaran, 2003):

$\lambda_j$  = per cent of revenue in country for company j/per cent of revenue in country for average company in the market.

Table III reports the average estimates of the cost of equity for the countries in the sample for the period from 2011 to 2013, and Table IV summarizes the main descriptive statistic indicators.

### Hypotheses

Two linear regression models are used to test the hypothesis on how the CG index affects the cost of equity. Thus, the cost of equity is set as the dependent variable and the explanatory variables are the CG indexes and the other aforementioned control variables.

First, we aim at identifying whether a relationship between the CG practices and the cost of capital of Latin American firms exists (first hypothesis). The rationale behind this hypothesis is that companies with better CG standards should have lower cost of capital, thus demonstrating that institutional investors all over the world should be disposed to pay a premium to invest in these firms. We also aim at establishing whether a relationship between each of the three sub-indexes (Disclosure; Board of Directors; Shareholder Rights, Ownership and Control Structure) and cost of capital of firms can be detected (second hypothesis). The rationale is that some CG aspects should weigh more than others. In particular, due to the endemic transparency issues distinguishing firms from emergency countries, disclosure should play a key role.

Accordingly, the first hypothesis is set as follows:

- H1. There is a negative relationship between the CG quality expressed by the CG index and the cost of equity capital for Latin American firms.

Table III Average cost of equity capital estimates by country (2011-2013)					
Year	Brazil	Chile	Colombia	Mexico	Peru
2011	0.1368	0.1153	0.1254	0.1260	0.1147
2012	0.1357	0.1085	0.1187	0.1158	0.1236
2013	0.1415	0.1094	0.1167	0.1042	0.1122

Table IV Descriptive statistics for the cost of equity capital (2011-2013)								
Year	Mean	SD	Minimum	1st quartile	Median	3rd quartile	Maximum	Skewness
2011	0.1307	0.1487	0.0682	0.0867	0.0896	0.1232	0.2175	0.7732
2012	0.1266	0.1341	0.0845	0.0769	0.1074	0.1215	0.1968	0.5413
2013	0.1261	0.1251	0.0749	0.0868	0.0952	0.1143	0.1997	0.7937



The following regression model is then used to test *H1*:

$$COE_{i,t} = \beta_0 + \beta_1 CG_{i,t} + \beta_2 PB_{i,t} + \beta_3 ROA_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEV_{i,t} + \beta_6 INFL_{i,t} \quad (1)$$

where  $COE_{i,t}$  is the cost of equity capital for firm *i* at time *t*,  $CG_{i,t}$  is the aggregate CG index,  $PB_{i,t}$  is the price-to-book ratio,  $ROA_{i,t}$  is the return on assets,  $SIZE_{i,t}$  is the firm size,  $LEV_{i,t}$  is the leverage and  $INFL_{i,t}$  is the inflation rate.

A negative relation is also expected between CG, price-to-book value, return on assets (ROA) and size to the cost of equity, while a positive relation is expected between leverage and inflation to the cost of equity. The second hypothesis is defined as follows:

*H2*. There is a negative relationship between the CG quality expressed by the CGA, CGB and CGC indexes and the cost of equity capital for Latin American firms.

A second regression model is used to test *H2*:

$$COE_{i,t} = \beta_0 + \beta_1 CGA_{i,t} + \beta_2 CGB_{i,t} + \beta_3 CGC_{i,t} + \beta_4 PB_{i,t} + \beta_5 ROA_{i,t} + \beta_6 SIZE_{i,t} + \beta_7 LEV_{i,t} + \beta_8 INFL_{i,t} \quad (2)$$

where CG is substituted by  $CGA_{i,t}$ ,  $CGB_{i,t}$  and  $CGC_{i,t}$ , which indicate the three sub-indexes of the CG index (Disclosure; Board of Directors; and Shareholder Rights, Ownership and Control Structure).

Moreover, as for the first linear regression, price-to-book value, ROA and size are expected to be negatively related to the cost of equity, while a positive relation is expected for leverage and inflation.

### *The corporate governance index*

For the analyzed sample, a CG index is constructed, embedding the most relevant aspects influencing the CG quality for Latin American firms. The data for the construction of the CG index are hand-picked from the annual financial reports of each firm and from the Orbis database. The process is carried out for all the firms in the sample for the years 2011, 2012 and 2013, for a total of 270 observations.

The index is purposely created by taking into account the peculiarities of each country and the recommendations given by the corresponding corporate governance institutes (CGIs). Moreover, both the "White Paper on Corporate Governance in Latin America" and the "Practical Guide to Corporate Governance", drafted together by the International Finance Corporation, the Organization for Economic Co-operation and Development (OECD) and the Global Corporate Governance Forum, offer several points useful for the construction of the index.

Unlike previous CG indexes, often built considering six proxies, our innovative index provides for three main sub-indexes, each including five indicators. In particular, to assess the level of CG, the following three sub-indexes are identified:

1. Disclosure;
2. Board of Directors; and
3. Shareholder Rights, Ownership and Control Structure.

Each of the three sub-indexes contains five indicators. Below is shown the whole structure of the CG index:

1. Disclosure (maximum 6 points)
  - Does the firm provide statements according to US generally accepted accounting principles (US GAAP), International Accounting Standards Board (IASB) or International Financial Reporting Standards (IFRS)?
  - Does the firm use the Big Four international auditing firms?
  - Does the firm disclose executive compensation information?
  - Has the firm received qualified auditing opinions on its financial statement?

- Are documents and information available in other languages?
2. Board of directors (maximum 5 points)
    - Are the roles of the CEO and board chairman performed by different individuals?
    - Does the board contain between five and nine directors?
    - Is there a permanent auditing committee?
    - Are more than half of the board members external to the firm?
    - Do directors have common terms of at most two years?
  3. Shareholder right, ownerships and control structure (maximum 5 points)
    - Do controlling shareholders hold less than 70% of voting rights?
    - Is the proportion of non-voting shares lower than 20% of the firm's equity?
    - Do the firms issue only shares with voting rights?
    - Does a controlling shareholder have proportionate voting rights (that is equal to or inferior to its ownership percentage)?
    - Is there an institutional investor with at least 5% of the firm's equity?

To obtain the final rating, each observation is assigned a score of one in case the firm meets the governance standard, and zero otherwise. This procedure is adopted for each of the 15 indicators. Consequently, the maximum score obtainable by each category is 5 and by the total CG index is 15. The higher the score, the higher the CG quality.

Given that the index is tailor-made to the Latin American countries' characteristics, a brief explanation of the CG index variables needs to be given.

*Disclosure.* The fact that Latin American countries adopt international accounting standards is an element of key importance for foreign investors, because it allows international performance comparisons. In this case, some of the firms in the sample are a part of the American Depositary Receipt program. Consequently, the Securities and Exchange Commission (SEC) requires them to disclose financial information under US GAAP. Thus, they are automatically given a score of one.

Other indicators pertain to the level of disclosure: among these, the firm is audited by one of the biggest international auditing firms ("Big Four"); the firm discloses information regarding executive compensation; and whether or not annual reports and documents are made available in languages other than the national one.

*Board of directors.* The board independence is fundamental; therefore, firms with CEO and chairman separation are awarded with a score of one. The ideal number of directors has been determined following the Codes of Best Corporate Governance Practices issued by the institutions of the involved countries. The number of board members is determined by the law, but only Brazil, Colombia and Mexico set the maximum board size.

As per the law of the countries included in the sample, an auditing committee is required in firms, but it is not specified whether this committee should be permanent or temporary. For this reason, firms with permanent committees are given a score of one. This score is given also to firms where half of the members of the board are external and where members have a common term of two years at maximum.

*Shareholders' rights, ownership and control structure.* The firms where controlling shareholders have less than 70 per cent of voting rights are those with a lower probability for minority shareholders to be expropriated. Moreover, if less than 20 per cent of a firm's equity is composed of non-voting shares, this would not lead to a control and ownership separation. CGIs of Latin American countries require listed firms to issue shares, granting one vote for each share ("One share, one vote") and proportionate voting rights. The last indicator for the CG index concerns whether an institutional investor holds at least 5 per

cent of the equity of the firm. Indeed, if this is the case, there would be a stricter control over both controlling shareholders and managers, and wealth transfers would be deterred.

### Control variables

To test the robustness of the model, the following control variables with related hypotheses are included, consistent with the previous literature on the subject (Rajan and Zingales, 1995; Frank and Goyal, 2009):

- *Price to book ratio (PB)*: The higher the price to book ratio, the lower the cost of equity.
- *Return on assets (ROA)*: The higher the ROA, the lower the cost of equity.
- *Firm size (SIZE)*: Larger firms are expected to have lower cost of equity because they usually face lower risk.
- *Leverage (LEV)*: The higher the leverage, the higher the cost of equity capital.
- *Inflation rate (INFL)*: It is used to control for macroeconomic conditions that vary in time. The rates are based on the consumer price indexes and are taken from the World Bank Database. A positive relationship with the cost of equity is expected.

It must be observed that the selected control variables are all statistically significant, and thus, their explanatory power is large. The adjusted *R*-square shows that the model has a good predictive power, as about 40 per cent of the variability of the cost of equity is explained by the set of the five explanatory variables considered.

Table V summarizes the descriptive statistics for all the variables included in the analysis. The data are drawn from Worldscope and Datastream and are all expressed in US dollars.

## Results

### Descriptive statistics

Table VI summarizes the average CG index results.

The table also reports the results divided into the three sub-indexes: Disclosure; Board of Directors; and Shareholder Rights, Ownership and Control Structure, which are named CGA, CGB and CGC, respectively.

The results indicate that Latin American countries in the sample are still far from high CG quality standards, in line with what the literature states (Garay and Gonzales, 2008). Firms in Chile, Mexico and Peru have slightly higher CG index scores. This result is in line with expectations, because during the past few years, CGIs of the abovementioned countries, in particular Chile and Mexico, have put in place some actions to address firms to better CG practices. Moreover, it can be affirmed that for the period 2011-2013, there is no big evidence of improvements in the CG index. Table VII summarizes the main descriptive statistic indicators for all the CG indexes.

### Results for H1

First, the results referring to *H1* are presented.

No significant correlation is found between the identified variables (Table VIII provides the results of the Pearson correlation matrix). Although weak, a negative correlation is identified

Table V Descriptive statistics for control variables								
Index	Mean	SD	Minimum	1st quartile	Median	3rd quartile	Maximum	Skewness
PB	1.9222	0.9455	0.6900	1.2900	1.8900	2.2300	4.9000	0.7612
ROA	0.1176	0.0392	0.0695	0.0937	0.1026	0.1379	0.2852	0.9763
SIZE	8.6392	1.4086	6.5800	7.0000	9.0000	10.0000	11.4900	-0.2795
LEV	0.3698	0.1835	0.0194	0.2448	0.3722	0.4722	0.9015	0.4036
INFL	5.5181	1.2028	3.1600	4.1700	6.5600	6.5600	7.6543	-0.5037

**Table VI** Average CG index results by country for the period 2011-2013

Year	Brazil	Chile	Colombia	Mexico	Peru
<i>CG index</i>					
2011	8.87	10.23	9.32	11.04	10.21
2012	8.87	11.54	9.70	11.52	10.21
2013	9.23	11.83	9.70	11.52	10.79
<i>CGA index</i>					
2011	2.57	2.95	2.50	3.32	2.84
2012	2.57	3.26	3.04	3.68	3.27
2013	2.91	3.83	3.04	3.68	3.27
<i>CGB index</i>					
2011	2.47	2.93	2.39	2.90	2.81
2012	2.47	2.93	2.39	3.18	3.54
2013	2.47	3.79	2.39	3.18	3.54
<i>CGC index</i>					
2011	3.00	3.85	2.70	3.50	3.91
2012	3.00	3.85	2.70	3.66	3.91
2013	3.12	3.98	2.70	3.66	3.91

**Table VII** Descriptive statistics for CG index and its sub-indexes

Year	Mean	SD	Minimum	1st quartile	Median	3rd quartile	Maximum	Skewness
<i>CG index</i>								
2011	10.33	1.97	6.00	8.96	11.00	13.04	14.00	-0.96
2012	11.16	1.82	6.00	9.74	11.57	13.40	14.00	-0.12
2013	11.58	1.75	7.00	9.84	11.68	13.52	14.00	-0.79
<i>CGA index</i>								
2011	3.68	0.91	2.00	3.23	3.85	4.2	5.00	-1.02
2012	3.72	0.96	2.00	3.27	3.90	4.25	5.00	-0.98
2013	3.79	1.03	2.00	3.33	3.97	4.59	5.00	-1.01
<i>CGB index</i>								
2011	2.86	0.82	1.00	2.51	3.02	3.53	5.00	0.77
2012	3.02	0.79	1.00	2.65	3.48	4.31	5.00	0.56
2013	3.48	0.89	1.00	3.05	3.75	4.45	5.00	0.92
<i>CGC index</i>								
2011	2.99	0.71	2.00	2.62	3.21	3.81	5.00	-0.89
2012	3.32	0.54	2.00	2.91	3.57	4.23	5.00	-1.09
2013	3.64	0.59	2.00	3.19	3.91	4.63	5.00	-0.78

**Table VIII** Pearson correlation matrix between independent variables

Index	SIZE	ROA	PB	LEV	CG	INFL
SIZE	1					
ROA	0.4221	1				
PB	0.3230	-0.1142	1			
LEV	-0.0179	-0.0865	-0.1734	1		
CG	0.2341	0.1304	0.1515	-0.1949	1	
INFL	-0.1041	0.0746	-0.1595	-0.1695	0.1116	1

between leverage and all the other independent variables, and between inflation and size, price-to-book value and ROA, all the other correlations being positive. For the first linear regression, the results are estimated using three different models: Model 1 includes only the control variables; Model 2 includes only the CG variable; and Model 3 includes both the control variables and the CG variable.

A two-sided *t*-test is conducted to test the null hypothesis, which is rejected in case the corresponding *p*-value is lower than or equal to the significance levels of 1 per cent, 5 per

cent and 10 per cent (indicated in the tables by \*\*\*, \*\* and \*, respectively). Furthermore, the *F*-test is run to understand whether the CG variable inclusion increases the explanatory power of the model.

Table IX summarizes the output for the first model of the first linear regression, which is conducted to understand whether the selected control variables have a good explanatory power.

The variables' coefficients are in line with the expectations, and the control variables are proven to affect the cost of equity. In particular, the cost of equity is negatively related to the price-to-book value, ROA and size, and positively with leverage and inflation.

Table X summarizes the output of the second model of the first linear regression, which studies the association between cost of equity and CG index.

As expected, CG index is negatively associated with the cost of equity: improvements in the governance quality are associated with lower costs of equity. In this model, the CG coefficient is  $-0.0119$ , and it is statistically significant at 1 per cent confidence interval. This would mean that, taking, for example, the year 2013, an increase of CG from the 25th percentile (CG = 9.84) to the 75th percentile (CG = 13.53) would lead to a decrease of around 4 per cent ( $= 0.0119 \times (13.53 - 9.84)$ ) of the average cost of equity.

Table XI summarizes the output for the third model of the first linear regression, which embeds both the control variables and the CG index.

Also, when adding the control variables to this model, the CG remains significantly and negatively associated with the cost of equity. Moreover, considering the analysis of

**Table IX** Linear regression 1 output (Model 1)

<i>Indicator</i>	<i>Coefficients</i>	<i>Standard error</i>	<i>t statistics</i>	<i>P-value</i>
Intercept	0.0282**	0.0221	1.2749	0.0206
PB	-0.0141***	0.0030	-4.7372	0.0028
ROA	-0.0902**	0.0364	-2.4748	0.0153
SIZE	-0.0313**	0.0014	-2.1767	0.0323
LEV	0.1630***	0.0177	9.2127	0.0012
INFL	0.0080*	0.0006	1.2920	0.0919
<i>Regression statistics</i>				
<i>R</i> -multiple	0.453268			
<i>R</i> <sup>2</sup>	0.408720			
Adjusted <i>R</i> <sup>2</sup>	0.403287			
Standard error	0.106805			
Observations	270			
<i>F</i> -test	167.2496305			
<i>P</i> -value	0.00129			

**Table X** Linear regression 1 output (Model 2)

<i>Indicator</i>	<i>Coefficients</i>	<i>Standard error</i>	<i>t statistics</i>	<i>P-value</i>
Intercept	0.2279	0.0062	6.4985	0.0045
CG	-0.0119***	0.0106	-10.3639	0.0032
<i>Regression statistics</i>				
<i>R</i> -multiple	0.408263			
<i>R</i> <sup>2</sup>	0.324941			
Adjusted <i>R</i> <sup>2</sup>	0.322952			
Standard error	0.009207			
Observations	270			
<i>F</i> -test	186.6888182			
<i>P</i> -value	0.0032			

variance between the first and the third model, the  $p$ -value is less than any commonly used significance level. The null hypothesis must then be rejected, and the CG index is significant in explaining the cost of equity variability.

Table XII reports the output of the second linear regression.

The analysis of the new variables' coefficients and significance offers more information with respect to the previous model. Not only does the model confirm the expected positive and negative relationships between the control variables and the cost of equity, it also shows which of the three components of CG mostly affects the cost of equity. Based on the outcome on significance level, Disclosure is the most significant variable affecting the cost of equity, and the coefficient  $-0.0198$  indicates that higher level of information disclosure by firms determines lower levels of cost of equity. As for the other two variables, CGB and CGC, we can observe that the Board of Directors' composition affects the cost of equity only when considering a confidence level of 10 per cent, and the variable regarding Shareholder Rights, Ownership and Control Structure does not affect the cost of equity.

**Table XI** Linear regression 1 output (Model 3)

<i>Indicator</i>	<i>Coefficients</i>	<i>Standard error</i>	<i>t statistics</i>	<i>P-value</i>
Intercept	0.0244***	0.0216	4.3797	0.0005
PB	-0.0105***	0.0026	-4.0946	0.0012
ROA	-0.1093***	0.0310	-3.8550	0.0002
SIZE	-0.0239*	0.0012	-1.9767	0.0564
LEV	0.1158***	0.0168	6.9011	0.0073
INFL	0.0061**	0.0005	2.1690	0.0329
CG	-0.0112*	0.0008	-6.0270	0.0571
<i>Regression statistics</i>				
<i>R</i> -multiple	0.467733			
$R^2$	0.436507			
Adjusted $R^2$	0.431918			
Standard error	0.005709			
Observations	270			
<i>F</i> -test	204.039808			
<i>P</i> -value	0.00712			

**Table XII** Linear regression 2 output

<i>Indicator</i>	<i>Coefficients</i>	<i>Standard error</i>	<i>t statistics</i>	<i>P-value</i>
Intercept	0.0279**	0.0216	5.1937	0.0378
PB	-0.0115***	0.0026	-3.1495	0.0097
ROA	-0.1193***	0.0310	-6.5460	0.0002
SIZE	-0.0239*	0.0012	-4.9349	0.0514
LEV	0.1158***	0.0168	5.1021	<0.0001
INFL	0.0061**	0.0005	3.2469	0.0265
CGA	-0.0198***	0.0023	-4.6786	0.0043
CGB	-0.0085*	0.0054	-3.1324	0.0890
CGC	-0.0001	0.0876	-1.0070	0.7540
<i>Regression statistics</i>				
<i>R</i> -multiple	0.435432			
$R^2$	0.403407			
Adjusted $R^2$	0.402718			
Standard error	0.008709			
Observations	270			
<i>F</i> -test	199.1347808			
<i>P</i> -value	0.00161			



## Results for H2

In this sub-section, the results for H2 are described.

The results relate the analysis of the following equations, where only one CG sub-index is considered at a time:

$$COE_{i,t} = \beta_0 + \beta_1 CGA_{i,t} + \beta_2 PB_{i,t} + \beta_3 ROA_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEV_{i,t} + \beta_6 INFL_{i,t} \quad (3)$$

$$COE_{i,t} = \beta_0 + \beta_1 CGB_{i,t} + \beta_2 PB_{i,t} + \beta_3 ROA_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEV_{i,t} + \beta_6 INFL_{i,t} \quad (4)$$

$$COE_{i,t} = \beta_0 + \beta_1 CGC_{i,t} + \beta_2 PB_{i,t} + \beta_3 ROA_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEV_{i,t} + \beta_6 INFL_{i,t} \quad (5)$$

Tables XIII–XV report the output for these three regressions.

The results are in line with the output of the previous model (2). CGA is statistically significant at each confidence level, CGB is statistically significant only at 10 per cent confidence level and CGC is not statistically significant at any confidence level.

The results of the entire analysis conducted on the sample of Latin American firms confirm the expected relationships between the cost of equity and price-to-book value, ROA, firm size, leverage and inflation. Furthermore, a negative relationship is found between CG and the cost of equity. In particular, the component affecting the cost of equity the most is “Disclosure”, and the “Board of directors” composition affects the cost of equity to a smaller

Table XIII Equation 3 output				
Indicator	Coefficients	Standard error	t statistics	P-value
Intercept	0.0244*	0.0608	4.9722	0.0535
PB	-0.0125***	0.0075	-4.5942	0.0012
ROA	-0.1193***	0.0597	-3.9983	0.0002
SIZE	-0.0439*	0.0113	-1.6505	0.0564
LEV	0.1058***	0.0871	6.0502	0.0073
INFL	0.0041**	0.0014	2.1603	0.0329
CGA	-0.0132***	0.0049	-4.3119	0.0031
<i>Regression statistics</i>				
R-multiple	0.487733			
R <sup>2</sup>	0.466507			
Adjusted R <sup>2</sup>	0.461918			
Standard error	0.009283			
Observations	270			
F-test	202.0800128			
P-value	0.00132			

Table XIV Equation 4 output				
Indicator	Coefficients	Standard error	t statistics	P-value
Intercept	0.0231**	0.0793	4.3797	0.0425
PB	-0.0098***	0.0089	-4.0946	0.0017
ROA	-0.1129***	0.0924	-3.8550	0.0003
SIZE	-0.0248*	0.0345	-1.9767	0.0640
LEV	0.1138***	0.0824	6.9011	0.0056
INFL	0.0071**	0.0013	2.1690	0.0189
CGB	-0.0077*	0.0050	-3.0270	0.0871
<i>Regression statistics</i>				
R-multiple	0.417342			
R <sup>2</sup>	0.396219			
Adjusted R <sup>2</sup>	0.391753			
Standard error	0.004283			
Observations	270			
F-test	187.039808			
P-value	0.00128			

**Table XV** Equation 5 output

<i>Indicator</i>	<i>Coefficients</i>	<i>Standard error</i>	<i>t statistics</i>	<i>P-value</i>
Intercept	0.0268**	0.0236	4.3652	0.0497
PB	-0.0104***	0.0025	-4.1053	0.0012
ROA	-0.1106***	0.0341	-3.8617	0.0002
SIZE	-0.0233*	0.0014	-1.9414	0.0564
LEV	0.1245***	0.0184	6.9102	0.0073
INFL	0.0073**	0.0006	2.1705	0.0329
CGC	-0.0002	0.0007	-1.0357	0.8018
<i>Regression statistics</i>				
<i>R</i> -multiple	0.361542			
<i>R</i> <sup>2</sup>	0.335197			
Adjusted <i>R</i> <sup>2</sup>	0.332678			
Standard error	0.007694			
Observations	270			
<i>F</i> -test	171.18721			
<i>P</i> -value	0.00326			

extent. The “Shareholder Rights, Ownership and Control Structure” variable, instead, turns out not to have a significant influence on the cost of equity.

### Discussion and conclusions

This paper investigates the extent to which CG systems adopted by Latin American listed firms affect their cost of equity. For the purpose of the analysis, a CG index was specifically created by taking into account the peculiarities of each country and the recommendations given by CGIs.

The results indicate that a negative relationship exists between CG and the cost of equity. In particular, the component affecting the cost of equity the most is “Disclosure” and the one affecting to a smaller extent is the “Board of directors”. Conversely, the “Shareholder Rights, Ownership and Control Structure” factor turned out not to have a significant influence on the cost of equity. The results are only partially consistent with the previous related literature, indicating that disclosure is the most important variable affecting the cost of equity for emerging countries (Lima and Zoratto Sanvincente, 2012). However, other studies conducted in different countries affirm that this relationship cannot be considered significant at a global level for all the emerging economies.

Our results diverge from similar studies on developed economies where, according to Klein *et al.* (2005), there is no evidence that the board of directors’ independence affects the firm performance, which is instead associated with disclosure and shareholders’ rights. The reasons for these divergent results are the peculiarities of the different economies of the countries involved in the aforementioned studies. In fact, it would seem that in countries with weaker legal systems, the presence of a better CG framework, and specifically the independence of the board of directors, has a larger positive effect on firm performance, and ultimately on the cost of capital.

Furthermore, according to the results of our study, in Latin American markets, it is more important for investors to gather information about the firm, rather than on the composition of the board of directors and on the shareholder structure. A novelty of this paper is that this is the first contribution that tests the relationship between CG and cost of capital by considering the overall Latin American market. The CG index constructed in this paper could help future scholars to assess the relationship between quality of CG and other firm characteristics (performance, value and risk) or other specific features that incentivize firms to enhance governance practices. In addition, our paper contributes to the literature, as it focuses on an association between CG and cost of equity capital, while most previous studies identified a (positive) relationship between effective CG and firm value, rather than

cost of capital. Our study also proves that institutional investors all over the world are disposed to pay a premium to invest in firms with effective CG standards and that this premium is higher in emerging countries than in developed countries.

An important arising implication of the paper is that firms of emerging countries, and Latin American ones particularly, should pay higher attention to CG issues. In fact, the appropriate and efficient management of this matter is of key importance in the creation of firm value, specifically by reducing the denominator used to discount the cash flows of the investment projects. A more structured and attentive management of CG issues would ensure that firms generate higher shared value, and for that, CG should be soundly defended and supported.

A limitation of this paper is the restricted amount of observations constituting the data set. However, this represents the overall market of Latin American firms listed in local stock exchanges, excluding financial services and utility industries. We suggest conducting a similar analysis of other geographical areas distinguished by weak legal contexts to verify if more available data could be collected due to a larger initial population. Moreover, the analysis conducted in this paper could be extended in different ways to find larger evidence of the association between CG and the cost of equity capital. In particular, a statistical analysis could be carried out on the interactions among the three considered variables to express the quality of a company's CG. Indeed, it is likely that the "Disclosure", "Board of directors" structure and the "Shareholder Rights, Ownership and Control Structure" are factors that are often linked to each other.

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