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# Corporate Governance, Leverage and Firm Performance: Does Sovereign Rating Matter?

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# CORPORATE GOVERNANCE, LEVERAGE AND FIRM PERFORMANCE: DOES SOVEREIGN RATING MATTER?


## ABSTRACT

This paper investigates the impact of sovereign rating and corporate governance on the leverage and performance of Latin American companies. We performed a multilevel regression with 823 Latin American companies between 2004 and 2018 and verified the impacts of country, firm and time levels on leverage and performance variations. We found that Latin American companies are more leveraged and perform better when their respective countries have a better sovereign rating and when they adopt better board of directors and audit committee mechanisms. Sovereign rating assumes distinct roles depending on the presence or absence of governance variables. Rating and governance may be substitute mechanisms to protect investors. To the best of the authors' knowledge, this paper is the first to investigate the impacts of sovereign rating on firm leverage and performance in the Latin American scenario, which characterizes the originality of this investigation. The use of governance metrics – for example, the audit committee expertise and the dummy for Chairman as a former CEO – is innovative in Latin American studies. In addition, this study demonstrates that sovereign rating only affects leverage in the absence of governance constructs.



**Keywords:** Corporate Governance; Leverage; Sovereign Rating; Performance, Latin America.


## 1. INTRODUCTION

More than five decades ago, discussions about the firm theory gave rise to several theoretical approaches, such as the capital structure irrelevance on companies' value (Modigliani & Miller, 1958). Scholars have sought to understand how the capital structure can improve firm performance and, at the same time, mitigate agency conflicts considering market imperfections.

Jensen and Meckling (1976) highlighted the agency costs of external resources in a company's ownership structure. Contemporary studies have focused on improving corporate governance mechanisms, which, according to the Organization for Economic Cooperation and Development (OECD, 2016), are rules and practices that govern the relationship between managers and shareholders and affect interested parties, such as employers and creditors.

Many studies have focused on the impacts of leverage and good corporate governance practices on the performance and value of companies both at country (Buallay *et al.*, 2017; Ghouma *et al.,* 2018) and multi-country levels (Iqbal *et al.*, 2018; Wang & Esqueda, 2014). The different rules for corporate governance practices between countries have led to different instruments to create corporate governance quality indexes, which often consider protection of minority shareholders, transparency and disclosure of information, board structure, ownership and control structure, and managers' compensation (Shleifer & Vishny, 1997).

Authors in the financial literature have investigated separately the relationship between corporate governance and capital structure (Kieschnick & Moussawi, 2018; Ruiz, 2017; Uwuibge, 2014), and corporate governance and firm value/performance (Abdallah and Ismail, 2017; Akbar *et al.,* 2016; *Jara et al.,* 2018). However, in addition to the adoption of governance mechanisms, some external factors, like sovereign rating, can significantly influence companies' debt and value, which are still little discussed in the literature.

Studies on corporate finance have undervalued sovereign rating, which measures the political, economic and social stability of countries (Cantor & Parker, 1996). However, some authors have shown that rating has a significant effect on capital markets (Almeida *et al.,* 2017; Chen *et al.,* 2016; Ng & Ariff, 2019). To *et al.* (2018) pointed out that countries' upgrade and

downgrade announcements affect the availability of resources for companies' indebtedness and significantly affect their performance.

With the advance of globalization and formation of trading blocs, the modernization and integration of capital markets have boosted the flow of liquidity in the international financial system. Several studies have considered the rating issued by risk rating agencies – Standards & Poor's, Fitch Ratings, Moody's Investor – to investigate the debt structure and governance quality of companies (Kisgen, 2019; Krichene & Khoufi, 2016; Sajjad & Zakaria, 2018). According to White (2010), this rating shows borrowers' credit quality and ability to honor their commitments in due time.

The lack of empirical evidence on the implications of sovereign rating on corporate leverage and performance points out to a gap in the literature, considering that investors rely on rating agencies' reports to decide where to invest their resources. Therefore, this study investigates how changes in sovereign rating affect debt and performance, even with the adoption of good corporate governance practices, of listed Latin American companies from 2004 to 2018.

Latin American countries are environments of low legal protection for shareholders (La Porta *et al.,* 2000) and, in recent years, they have spared no effort to establish principles that favor the adoption of good corporate governance practices. Several studies have investigated the quality of corporate governance and its impacts on leverage and performance of companies in Argentina (Bebczuk, 2005), Brazil (Dal-Vesco & Beuren, 2016; Leal *et al.,* 2015; Ripamonti & Kayo, 2016), Chile (Lefort & González, 2008), Colombia (Cortes & Arenas, 2014; Váquiro *et al*, 2016), Mexico (Fassler, 2018; Reyna *et al.,* 2012), and Peru (Aguilar, 2016).

A 2017 International Monetary Fund report showed the economic evolution of Argentina, Brazil, Chile and Colombia after the 2008 crisis, indicating points of growth and decline (IMF, 2017). Based on this scenario, the rating agencies made several changes to the risk ratings of these countries. Bustillo *et al.* (2018) showed that on average Latin American countries underwent 36 Upgrade and Downgrade decisions between 2010 and 2017, which significantly affected the cost of corporate debt.

Thus, using a multilevel regression model, this paper contributes to the literature by presenting a new perspective on the impacts of sovereign rating on companies' leverage and performance in Latin America, considering that the rating agencies' reports assume a determining role in the decision-making of individual and institutional investors.

The remainder of the paper is organized as follows: Section 2 presents the theoretical framework. Section 3 presents the methodology and data used in the study. Section 4 presents the results and discussions, and the final Section 5 provides conclusions, limitations and suggestions for future research.

## 2. LITERATURE REVIEW

### 2.1 Corporate governance and firms leverage and performance

Agency problems and market frictions lead to the creation of good corporate governance practices, as governance can control managers' entrenchment behavior and avoid the expropriation of shareholders' rights (Shleifer & Vishny, 1997). Uwuibge (2014) and Kieschnick and Moussawi (2018) investigated how the adoption of good corporate governance practices influenced companies' capital structure in emerging markets, especially their leverage.

In Africa, Abor (2007) analyzed the impacts of corporate governance on financing decisions of Ghanaian listed companies from 1998 to 2003. Through a panel data regression, he found that capital structure is positively associated with the board size, board composition, and CEO/Chairman duality. In Nigeria, Uwuigbe (2014) pointed out a positive relation between

CEO/Chairman duality and capital structure, but a negative association between the latter and board size and composition.

In the United States, Kieschnick and Moussawi (2018) investigated the impacts of corporate governance on the capital structure choice of 1500 American companies from 1996 to 2016 based on the board of directors' composition, CEO/Chairman duality, and issuance of dual-class shares. The authors found that companies using dual-class shares tend to use more debt as they age.

In Latin America, Ruiz (2017) investigated the influence of shareholder concentration, board size and independence, audit committee, and CEO/Chairman duality on the leverage of 575 listed companies in Brazil, Chile, and Mexico from 2006 to 2014. The results showed that (a) a higher level of shareholding concentration reduces debt, (b) board independence increases debt to increase control over managers' behavior, and (c) the audit committee reduces firm leverage.

Empirical evidence has shown that corporate governance plays an important role in mitigating agency conflicts, and managers are sometimes forced to leverage companies to maintain their firms' scale, aligning their interests with those of shareholders and creditors. In this context, companies in Latin America are expected to use leverage as an instrument to control managerial actions, which will be tested by the following hypothesis:

**H1:** There is a positive relationship between corporate governance and firm leverage in Latin America.

In addition to studies on governance and capital structure, there are also studies that investigate the impact of corporate governance on firm performance in emerging countries (Abdallah & Ismail, 2017; Anmann *et al.,* 2011; Arslan *et al*., 2014; Essen *et al.*, 2012; Yang & Zhao, 2014).

Anmann *et al.* (2011) developed two corporate governance indexes using 64 attributes in 22 developed countries between 2003 and 2007. They found a positive relationship between their governance indexes and companies' value and concluded that governance practices mitigated the conflict between shareholders and managers and increased firm performance. Likewise, Abdallah and Ismail (2017) investigated the effects of corporate governance on the performance of 581 companies located in seven countries in the Gulf Cooperation Council (GCC) from 2008 to 2012. They observed that the low level of shareholding concentration supported the positive effect of governance quality on performance.

Klapper and Love (2002) showed that governance mechanisms partially compensated investors for the problems of effective application of laws in countries with a civil law system, which is the case of Latin American nations. Based on a document prepared by the Economic Commission for Latin America and the Caribbean (ECLAC), several studies have pointed out the impact of corporate governance on firms' performance/value in Latin America.

Jara *et al.* (2018) studied 595 listed companies in Argentina, Brazil, Chile, Colombia, Mexico, and Peru from 2000 to 2015, and they concluded that a lower shareholding concentration increased companies' value and performance. Maranho and Leal (2018) carried out a meta-analytical study of 42 articles from Brazil, Chile, Colombia, Mexico, and Venezuela, and found that the adoption of good corporate governance practices improved the performance of Latin American companies.

As Latin American countries provide low legal protection to shareholders and adopt corporate governance mechanisms as a compensation to reduce agency problems and increase shareholder wealth, (Maranho & Leal, 2018) the second study hypothesis is the following:

**H2:** There is a positive relationship between corporate governance and firm performance in Latin America.

## 2.2 Sovereign rating and firm leverage

La Porta *et al*. (2000) and Klapper and Love (2002) found that investing in countries with a civil law system is a high-risk procedure, since these countries do not guarantee the protection of minority shareholders' interests. Before deciding where to allocate their investments, investors have investigated companies' governance mechanisms and risk-rating reports (Alsakka and Gwilym, 2010; Ng and Ariff, 2019; White, 2010). For more than half a century, due to the consolidation of the international financial system, the reports produced by the three main rating agencies – Standard & Poor's, Fitch Rating, and Moody's Investors Inc. – have assumed an important position in investment decisions in the global capital market (Cantor & Parker, 1996; Caselli *et al.,* 2016).

These reports have implications for the financial conditions of firms and countries due to the announcements of upgrade and downgrade in the credit rating, which indicates borrowers' ability and desire to honor their obligations in due time (Grandes *et al.*, 2016). With the increasing issuance of government bonds, rating agencies have also begun to classify the degree of risk of sovereign States by combining economic, social and political factors to determine their ability to honor their obligations (Almeida *et al.,* 2017; Ng & Ariff, 2019).

For a long time, the sovereign rating occupied little space in the financial literature, but the important role of rating agencies in the global market has attracted attention in the academy. According to Drago and Gallo (2017), the downgrade of a sovereign rating point out a government's financial difficulties and directly influences capital markets. In addition, this downgrade increases debt costs related to high interest rates and inflation, and the premium charged by international creditors to offset countries' risk. Afonso *et al.* (2014) reported that a downgrade announcement generates contagion in capital markets and causes bank credit rationing, which consequently hinders companies' access to debt and increases their financing costs.

Several studies have addressed the impacts of sovereign rating change on capital structure (Adelino & Ferreira, 2016; Cai *et al.*, 2019; Chen *et al.,* 2016; Demoussis *et al.* 2017; Grandes *et al.*, 2016). Adelino and Ferreira (2016) presented one of these impacts on corporate debt: domestic bank loans significantly reduced after the downgrade of a sovereign rating. This evidence indicates that companies based in countries whose banking sector and stock market are the main sources of corporate debt are more sensitive to shocks caused by sovereign rating changes, as their access to financing decreases.

In Latin American countries, Agnoli and Vilán (2008) highlight the essential role of the domestic banking sector in granting corporate loans that can further increase the effect of a downgrade in the rationing of resources to finance companies. Grandes *et al.* (2016) pointed out the impact of sovereign rating on firm leverage in the region. Based on these studies, and considering that the sovereign rating quality can increase the availability of capital from third parties, this study proposes the following hypothesis:

**H3:** There is a positive relationship between sovereign rating and firm leverage in Latin America.

## 2.3 Sovereign rating and firm performance

In addition to its impacts on capital cost, sovereign rating change have affected firm performance from different perspectives. The downgrade of a sovereign rating, for example, has implications for stock prices and companies' operating performance (Ng & Ariff, 2019; Pacheco, 2012; To *et al.*, 2018). According to Almeida *et al.* (2017), when a country's sovereign rating is downgraded, firms rated below the sovereign ceiling strategically select projects that do not require a high level of financing due to the high cost of debt.

Chen *et al*. (2016) pointed out that the impacts of downgrade announcements in the capital market directly affects companies, since investors lose confidence in the country, and

its market value significantly decreases. Using a sample of 45,993 firms located in 120 countries, To *et al.* (2018) showed that the downgrade of a sovereign rating negatively affected the return on assets. In Portugal, through an events study, Pacheco (2012) found a significant reaction of companies' market value to rating changes.

The downgrade of sovereign rating can negatively affect companies' value and performance by reflecting market shocks in the stock price and by reducing the investment level that leads to a lower return on assets. The above-mentioned authors carried out event studies focusing only on the effect of downgrade announcements. However, an increase in the rating may be a positive sign for market valuation and better performance of companies, so the implications of any decision (either downgrade or upgrade) taken by agencies should be considered. In this scenario, the study proposes the following hypothesis:

**H4:** There is a positive relationship between sovereign rating and firm performance in Latin America.

## 3. DATA AND METHODOLOGY

The initial study sample included 906 non-financial companies listed on the stock exchanges of Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Peru, and Venezuela from 2004 to 2018. Then, Bolivia, Ecuador, and Venezuela were excluded for not having any corporate governance data in the period, which resulted in a final sample of 823 companies.

Financial, corporate governance and sovereign rating data were collected from the Thomson Reuters database between 2004 and 2018, to allow the observation of the impacts of the 2008 crisis on Latin American companies. In addition, Argentina, Brazil, and Peru achieved the investment grade in rating agencies during the period.

We adopted the following dependent variables: financial leverage (LEV), return on assets (ROA), and Tobin's Q. Other studies also adopted these variables: Iqbal *et al.* (2018), Kieschnick and Moussawi (2018), Krichene and Khoufi (2016), and To *et al.* (2018). Based on the literature, the following independent and control variables were selected. Table1 describes their metrics, signal expected and the based authors.

**Table 1**
Summary of variables

| Variable | Acronym | Metric | Signal Expected | Based researches |
|---|---|---|---|---|
| ***Dependent variables*** | | | | |
| **Leverage** | LEV | Total Debt/Total Assets | | Kieschnick & Moussawi (2018) |
| **Return on Assets** | ROA | Net Profit/Total Assets | | Iqbal *et al.*(2018) |
| **Tobin' Q** | Q_Tobin | (Market value + Total Debt) / Total Assets | | Abdallah & Ismail (2017) |
| ***Explanatory variables*** | | | | |
| **Board size** | (BSIZE) | Number of board members | -/+ | Bansal & Sharma (2016) |
| **CEO/Chair Duality** | (DCEOC) | Dummy variable assumes 1 if the chairman is also the CEO, 0 otherwise | +/- | Kieschnick & Moussawi (2018); Yang & Zhao (2014) |
| **CEO/Board Duality** | (DCEOB) | Dummy variable assume 1 if the CEO is also a board member and 0, otherwise. | +/- | Ararat *et al.* (2017) |

| | | | | |
|---|---|---|---|---|
| **Chairman of the Board is a Former CEO** | (CBFCEO) | dummy variable 1 if the chairman is a former CEO and 0, otherwise | +/- | Quigley & Hambrick (2012) |
| **Audit Committee** | (AUDC) | Dummy variable assumes 1 if there is an audit committee and 0, otherwise | + | Bansal & Sharma (2016) |
| **Audit Committee Independence** | (AUDIND) | Percentage of independent members on the audit committee. | + | Arslan *et al.* (2014); Bansal & Sharma (2016) |
| **Audit Expertise** | (AUDEXP) | Dummy variable, 1 if committee members have expertise in finance and 0, otherwise. | + | Ghafran & O'Sullivan, (2017); |
| **Sovereign Rating** | (RATS) | Annual average of Standard & Poor's, Moody's and Fitch Rating scores, transformed from 0 to 21. | + | Afonso *et al.* (2012); Almeida *et al.*(2017) |
| ***Control Variables*** | | | | |
| **Firm Size** | FSIZE | Ln (Total Assets) | + | Abdallah & Ismail (2017) |
| **Market-to-Book** | MTB | Market value / Net Equity | + | Ararat *et al.* (2017), |
| **Company Risk** | RISK | Company Beta | - | Iqbal *et al.*(2018) |
| **Current Liquidity** | CL | Current Assets / Current Liabilities | + | Kieschnick & Moussawi (2018) |

Following Bernardo *et al.* (2018), we used three-level linear hierarchical regressions with repeated measures, considering that data require the observation of the behavior of leverage and performance of each firm in each country over time. The models were specified using the maximum likelihood (ML) without predictors to observe the proportion of variation between firms and countries. The first level is the linear function for the mean leverage and performance $Y_{ikt}$ assumed over time t in each firm i and in each country k, as highlighted in equation (1):

$$Y_{ikt} = \beta_{0ik} + e_{ikt} \qquad \sim ND\ (0, \sigma_e^2) \qquad (1)$$

where $\beta_{0ik}$ determines the mean leverage and performance assumed over time t (years) for firm i in country k, and $e_{tik}$ is the random error term and represents the variation of a firm's leverage and performance over time, including the variation of omitted factors, assuming a normal distribution with zero mean and variance $\sigma^2$.

In the second level, the study considered the mean leverage and performance ($\beta_{0ik}$) of the whole period for each firm i and each country k, estimated by equation (2):

$$\beta_{0ik} = \beta_{00k} + \mu_{ik} \qquad \sim ND\ (0, \sigma\mu^2) \qquad (2)$$

At this level, we verified the mean leverage and performance assumed over the entire period for all firms in country k, captured by the expression $\beta_{00k}$ of equation (2) and the random error term $\mu_{ik}$, , which also assumes a normal distribution with mean zero and variance $\sigma^2$. In this model, we considered each coefficient of equation (1) as a dependent variable.

The third level is a linear function for the mean leverage and performance for all companies in the entire analysis period in each country $\beta_{00k}$, as outlined in equation (3):

$$\beta_{00k} = \beta_{000} + \varepsilon_{ik} \qquad \sim ND\ (0, \sigma_\varepsilon^2) \qquad (3)$$

where $\beta_{000}$ represents the leverage and performance assumed during the study period for all firms in all countries, plus the random effect $\varepsilon_{ik}$ of firm i and country k.

Equation (4) summarizes the three levels, where $Y_{ikt}$ is the sum of leverage and performance of the general average $\beta_{000}$, plus the random effects of country $\varepsilon_{ik}$, the random effect of firm i in country k $\mu_{ik}$, and the random error over time $e_{tik}$.

$$Y_{ikt} = \beta_{000} + \varepsilon_{ik} + \mu_{ik} + e_{tik} \quad (4)$$

After estimating the models at each level, we verified the relationship between sovereign rating and financial leverage in equation (5) including the control variables, as highlighted in hypothesis 3. In equation (6), we included the corporate governance variables to test hypothesis 1. In equation (7), we verified how sovereign rating influenced companies' debt in the presence of governance variables.

$$LEV_{ikt} = \beta_{000} + \varepsilon_{ik} + \mu_{ik} + \beta_1 RATS_{k,t} + \beta_2 CONT_{i,k,t} + e_{tik} \quad (5)$$

$$LEV_{ikt} = \beta_{000} + \varepsilon_{ik} + \mu_{ik} + \beta_1 GOV_{i,k,t} + \beta_2 CONT_{i,k,t} + e_{tik} \quad (6)$$

$$LEV_{ikt} = \beta_{000} + \varepsilon_{ik} + \mu_{ik} + \beta_1 GOV_{i,k,t} + \beta_2 RATS_{k,t} + \beta_3 CONT_{i,k,t} + e_{tik} \quad (7)$$

where $LEV_{ikt}$ is the financial leverage of firm i in country k in time t; $\beta_{000}$ is the general mean sum of leverage; $\varepsilon_{ik}$ is the random effect of country k; $\mu_{ik}$ is the random effect of firm i in country k. $RATS_{k,t}$ is the sovereign rating of country k in time t; $GOV_{i,k,t}$ represents the set of the seven corporate governance variables of firm i in country k in time t; $CONT_{i,k,t}$ is the set of control variables of firm i in country k in time t; and $e_{tik}$ is the random error term, which represents the leverage variation of firm i in country k over time.

To investigate the relationship between sovereign rating and performance, we replaced the dependent variable in the previous models by $Perform$, which represents return on assets (ROA) and Tobin's Q for firm i in country k in time t. In equation (8), we included the sovereign rating as an explanatory variable to test hypothesis 4. Using the model in equation (9), we investigated the impacts of corporate governance on performance, as highlighted in hypothesis 2. We included sovereign rating in equation (10) to investigate its effects on performance in the presence of corporate governance variables.

$$Perform_{ikt} = \beta_{000} + \varepsilon_{ik} + \mu_{ik} + \beta_1 RATS_{k,t} + \beta_2 CONT_{i,k,t} + e_{tik} \quad (8)$$

$$Perform_{ikt} = \beta_{000} + \varepsilon_{ik} + \mu_{ik} + \beta_1 GOV_{i,k,t} + \beta_2 CONT_{i,k,t} + e_{tik} \quad (9)$$

$$Perform_{ikt} = \beta_{000} + \varepsilon_{ik} + \mu_{ik} + \beta_1 GOV_{i,k,t} + \beta_2 RATS_{k,t} + \beta_3 CONT_{i,k,t} + e_{tik} \quad (10)$$

## 4. RESULTS AND DISCUSSIONS

### 4.1. Descriptive statistics

Table 2 shows the means of all variables for each country and standard deviations for the full sample. Brazil and Mexico had a mean leverage (LEV) equal to 0.28 and 0.25 respectively, while the full sample had 0.23. The mean leverage of Argentina, Chile, Colombia, and Peru ranged between 0.15 and 0.20. The mean return on assets (ROA) of the full l sample was 9.7%, and companies from Argentina (11.13%), Mexico (10.96%), and Peru (11.65%) registered higher mean ROA. The average Tobin's Q for Brazil and Mexico were 1.76 and 1.69, respectively, and for the full sample, 1.55, indicating that companies in these countries increased their value during the period analyzed.

The results for the explanatory variables provide an overview of the corporate governance quality in Latin America. On average, firms' board of directors (BSIZE) comprised about 9 members, with Argentina and Mexico having an average of 13 members. On average,

in 46% of companies, the CEO was also a member of the board (DCEOB), while in 23% the officer was also chairman of the board (DCEOC). In 27% of firms, the chairman of the board was a former CEO (CBFCEO).

On average, 49% of the companies had an audit committee (AUDC), 63% of audit members were independent (AUDIND), and 32% of auditors were experts (AUDEXP), that is, they had a degree in Administration and/or Accounting. Approximately 98% of Mexican and Brazilian companies had an audit committee, and between 82% and 98% of their auditors were independent. Mexico had the highest number of experts in audit committees, with 72%.

Concerning the sovereign rating (RATS), the three agencies classified the countries only one level above the investment grade, with a mean of 13. However, two countries were rated in the speculative grade in the period. Argentina occupied the lowest positions, with a mean of 6 – proportional to CCC + –, while Brazil was one level below the investment grade, with a mean of 12 – equivalent to BB +.

**Table 2**
Descriptive statistics by country and full sample

| | | Argentina | Brazil | Chile | Colombia | Mexico | Peru | Full Sample | |
|---|---|---|---|---|---|---|---|---|---|
| **Variable** | **Obs.** | **Mean** | **Mean** | **Mean** | **Mean** | **Mean** | **Mean** | **Mean** | **St. Dev.** |
| **LEV** | 10,242 | 0.2 | 0.28 | 0.2 | 0.18 | 0.25 | 0.19 | 0.23 | 0.18 |
| **ROA** | 10,175 | 0.111 | 0.0869 | 0.0865 | 0.0818 | 0.1096 | 0.1165 | 0.097 | 0.09 |
| **Q_Tobin** | 9,010 | 1.46 | 1.68 | 1.48 | 1.31 | 1.6 | 1.22 | 1.51 | 0.76 |
| **FSIZE** | 10,270 | 18.68 | 20.08 | 19.37 | 19.52 | 20.6 | 18.92 | 19.66 | 2.11 |
| **MTB** | 8,525 | 2.35 | 2.81 | 2.27 | 1.7 | 2.62 | 1.63 | 2.38 | 1.99 |
| **RISK** | 9,968 | 0.91 | 0.81 | 0.58 | 0.72 | 0.64 | 0.86 | 0.75 | 0.51 |
| **CL** | 10,216 | 1.53 | 1.69 | 1.85 | 1.76 | 1.93 | 1.85 | 1.77 | 1.18 |
| **BSIZE** | 5,297 | 13.02 | 7.35 | 8.2 | 8.14 | 13.65 | 8.47 | 8.59 | 4.21 |
| **CBFCEO** | 4,558 | 0.21 | 0.29 | 0.16 | 0.041 | 0.36 | 0.22 | 0.27 | 0.44 |
| **DCEOC** | 4,793 | 0.56 | 0.5 | 0.07 | 0 | 0.78 | 0.45 | 0.46 | 0.5 |
| **DCEOB** | 4,916 | 0.2 | 0.26 | 0.14 | 0.01 | 0.39 | 0.21 | 0.24 | 0.43 |
| **AUDC** | 4,635 | 0.96 | 0.33 | 0.46 | 0.98 | 0.99 | 0.6 | 0.49 | 0.5 |
| **AUDIND** | 2,618 | 46.53 | 54.28 | 59.74 | 82.22 | 98.02 | 36.15 | 63.04 | 39.9 |
| **AUDEXP** | 4,358 | 0.5 | 0.26 | 0.16 | 0.29 | 0.72 | 0.2 | 0.32 | 0.47 |
| **RATS** | 12,345 | 6.02 | 12.16 | 17.8 | 12.6 | 14.62 | 13.24 | 13.17 | 3.4 |

**Notes:** Variables: LEV, Leverage; ROA, Return on Assets; Tobin' Q; BSIZE, Board size; DCEOC, CEO/Chair Duality; DCEOB, CEO/Board Duality; CBFCEO, Chairman of the Board is a Former CEO; AUDC, Audit Committee; AUDIND, Audit Committee Independence; AUDEXP, Audit Expertise; RATS, Sovereign Rating; FSIZE, Firm Size; MTB, Market-to-Book; RISK, Company Risk; CL, Current Liquidity

We conducted a variance inflation factor (VIF) test, which presented mean values lower than 10 and confirmed the absence of multicollinearity. Wald and Wooldridge tests showed that there was no problem with autocorrelation or heteroscedasticity. We performed the One-way ANOVA test to verify whether the means between countries differed for each dependent variable. With a p-value lower than 5%, the results pointed out to significant differences between countries in means for leverage, return on assets, and Tobin's Q.

### 4.2 results of null models

Table 3 presents the regression results of the null models, which, based on random intercepts, calculate the mean variation of leverage and performance of companies. These models did not include the explanatory variables and showed the degree of influence of each

level – country, time, and firm – in the variation of the dependent variables through the variance decomposition captured by the interclass correlation index (ICC).

The country level was responsible for a 3.22% variation in the leverage of Latin American companies, indicating that this change in debt was associated with the country where firms were based in. The firm level result of 62.71% pointed out the great influence of corporate intrinsic characteristics in the variation of leverage, while the time level contributed with 35.07%.

Regarding performance, the country level influenced the variation in ROA by 1.16% and in companies' Tobin's Q by 5.10%, showing a greater effect of the latter on their market value. The firm level affected the mean variation of ROA and Tobin's Q by 33.42% and 61.90%, respectively, indicating again the greater importance of companies' own characteristics in the market value. Finally, the time level was responsible for variations of 65.42% in ROA and of 30% in Tobin's Q, highlighting that the performance of Latin American companies improved over time. Table 3 shows that the results of the maximum likelihood (LR) tests for the models were highly significant at 1% level, indicating that the multilevel model is the most suitable for this analysis.

**Table 3**
Capital structure and performance of Latin American companies - null model

| | **LEV** | **ROA** | **Q_Tobin** |
|---|---|---|---|
| **Observations** | 10242 | 9898 | 9010 |
| **Intercepts** | 0.22*** | 0.35*** | 1.48*** |
| **Estimators (variance) Random Effects Parameters** | | | |
| **Country** | 0.001 | 0.0001 | 0.0305 |
| **Company** | 0.0202 | 0.0032 | 0.3399 |
| **Time** | 0.0026 | 0.0023 | 0.0027 |
| **Total** | 0.0186 | 0.0043 | 0.3731 |
| **Interclass Correlation Coefficient (ICC)** | | | |
| **Level 3 (Country)** | 3.22% | 1.16% | 5.10% |
| **Level 2 (Firm)** | 62.71% | 33.42% | 61.90% |
| **Level 1 (Time)** | 35.07% | 65.42% | 30% |
| **Total** | 100.00% | 100.00% | 100.00% |
| **LR Test (Chi2)** | 7607.6*** | 3899.8*** | 8804.3*** |

**Notes**: LEV, Leverage; ROA, Return on Asset; ***Significant at 1 percent level

To investigate the impacts of sovereign rating and corporate governance on the leverage (LEV) and performance (ROA and Tobin's Q) of Latin American companies, we performed three multilevel regressions. Firstly, we verified the rating impacts on debt and performance; secondly, it analyzed the effects of corporate governance variables; and thirdly, we performed the last regression including all the variables to verify how sovereign rating behaves in the presence of governance variables.

Table 4 shows the regression results for leverage. Confirming hypothesis 3 of the study, Model 1 presented a statistically positive relationship at the level of 5% between sovereign rating (RATS) and leverage (LEV), which indicates that Latin American firms increased their debt levels in periods of good credit risk rating of their countries. Demoussis *et al.* (2017) highlighted an interconnection between rating changes and the availability of bank credit. Almeida *et al.* (2017) found that the downgrade of sovereign ratings reduces leverage.

Regarding governance variables, the regression of Model 2 showed that the audit committee independence (AUDIND) and the CEO/Chairman duality (DCEOC) reduced

leverage, but when the chairman was a former CEO (CBFCEO), leverage increased. These results present a view of the agency problem, as CEOs use their powers to avoid using risky resources to finance their investments.

**Table 4**
Effects of Sovereign Rating and Corporate Governance on Firm' Leverage

| Variables | Model1 | Model2 | Model3 |
|---|---|---|---|
| **FSIZE** | **0.0207*** (0.0020)** | **0.0378*** (0.0056)** | **0.0375*** (0056)** |
| **MTB** | **0.0167*** (0.0009)** | **0.0188*** (0.0022)** | **0.0188*** (0.0022)** |
| **RISK** | 0.0154 (0.0104) | -0.0010 (0.0214) | -0.0011 (0.0214) |
| **CL** | **-0.0340*** (0.0016)** | **-0.0365*** (0.0045)** | **-0.0364*** (0.0045)** |
| **RATS** | **0.0021** (0.0011)** | | 0.0008 (0.0026) |
| **BSIZE** | | 0.0002 (0.0014) | 0.0001 (0.0014) |
| **AUDIND** | | **-0.0034** (0.0002)** | **-0.0003** (0.0002)** |
| **CBFCEO** | | **0.0469*** (0.0146)** | **0.0471*** (0.0146)** |
| **DCEOB** | | 0.0117 (0.0120) | 0.0120 (0.0119) |
| **DCEOC** | | **-0.0305** (0.0170)** | **-0.0306** (0.0170)** |
| **AUDC** | | -0.0116 (0.0204) | 0.0114 (0.0205) |
| **AUDEXP** | | 0.0014 (0.0088) | 0.0015 (0.0088) |
| **Const.** | **3.9904*** (0.7899)** | **10.6643*** (1.9323)** | **11.0381*** (2.2171)** |
| **Obs.** | 7341 | 1468 | 1468 |
| **Wald** | **1167.97*** ** | **307.20*** ** | **307.18*** ** |
| **LR Test** | **4892.26*** ** | **647.17*** ** | **648.12*** ** |

**Notes**: Variables: LEV, Leverage; ROA, Return on Assets; Tobin' Q; BSIZE, Board size; DCEOC, CEO/Chair Duality; DCEOB, CEO/Board Duality; CBFCEO, Chairman of the Board is a Former CEO; AUDC, Audit Committee; AUDIND, Audit Committee Independence; AUDEXP, Audit Expertise; RATS, Sovereign Rating; FSIZE, Firm Size; MTB, Market-to-Book; RISK, Company Risk; CL, Current Liquidity.
*,**,***Significant at 10, 5 and 1 percent levels, respectively

Akbart *et al.* (2016) stated that managers prefer equity because it is less risky; however, it does not benefit shareholders' wealth. In Latin America, the presence of a former CEO as the chairman increases leverage because managers align their actions with shareholders' interests (Fahlenbrach *et al.*, 2011). This behavior confirms hypothesis 1 of the study, since the adoption of good corporate governance practices increased the leverage of Latin American firms.

Model 3 showed that sovereign rating did not have a significant relationship with leverage in the presence of governance variables.

In general, these three models pointed out two important findings: (i) in the absence of information on corporate governance practices, the sovereign rating reflects companies' levels of debt, which explains why companies in well-classified countries are more indebted (Almeida *et al.,* 2017; Caselli *et al.*, 2016); (ii) on the other hand, the models that included corporate governance variables signaled their influence on leverage and their power to eliminate the significant impacts of sovereign rating on debt.

Table 5 presents the models with performance as dependent variable, alternating between ROA and Tobin's Q. This table shows the effects of sovereign rating and corporate governance on firm performance. The results of Models 1 and 4 in Table 5 show that the sovereign rating positively influenced the ROA and Tobin's Q of Latin American companies, confirming the hypothesis 4 of the study. To *et al.* (2018) reported a significantly positive reaction of the operating performance and market value of companies located in 120 countries with the announcement of changes in the sovereign rating, which indicates their strong relationship. Therefore, our results corroborated the literature, showing that companies increased their value and performed better when their countries had a better risk rating.

Models 2 and 5 presented the impacts of corporate governance variables on performance. Model 2 indicated a negative relationship between the board size (BSIZE) and the CEO/board member duality (DCEOB) with ROA at levels of 1% and 5%, respectively. At the same time, the existence (AUDC) and the independence of the audit committee (AUDIND) and its members' expertise (AUDEXP) positively affected the ROA of Latin American firms. Model 5 showed that the board size (BSIZE), the existence (AUDC) and the independence (AUDIND) of the audit committee increased Tobin's Q, but the presence of the CEO as a board member (DCEOB) and when the chairman was a former CEO decreased companies' value.

These results confirm hypothesis 2 and corroborate the agency theory, which considers that the market does not welcome the presence of the CEO as an active member of the board nor the chairman that was a former CEO (Ararat *et al.*, 2017; Arslan *et al.,* 2014; Quigley & Hambrick, 2012).

The findings of Models 3 and 6 showed that sovereign rating maintained its statistically positive relationship with firm performance even with the presence of corporate governance variables. However, their inclusion eliminated the significance of the audit committee's independence in Tobin's Q. As a justification, countries' creditworthiness acquired by the sovereign rating quality may assure investors of the reliability of accounting information disclosed by the companies based in these countries.

In general, the results call managers' attention to the importance of sovereign rating in their decisions. Krichene and Koufi (2016) emphasized that both governments and managers must take into account the reports issued by rating agencies, as they are determining factors in investors' decisions. We infers that sovereign rating may play an important role in firm leverage and performance and may attract foreign investments to Latin American countries. According to Almeida *et al.* (2017), in addition to reflecting the degree of economic and political stability of countries, sovereign rating also points out how valued and profitable firms are.

**Table 5**
Effects of Sovereign Rating and Corporate Governance on Firm' Performance

| Variables | ROA | | | Tobin's Q | | |
|---|---|---|---|---|---|---|
| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
| **FSIZE** | **0.0036*** (0.0010)** | **-0.0011*** (0.0026)** | **-0.0104*** (0.0026)** | **-0.1573*** (0.0067)** | **-0.1153*** (0.0131)** | **-0.1132*** (0.0129)** |
| **MTB** | **0.0059*** (0.0005)** | **0.009*** (0.0011)** | **0.090*** (0.0011)** | **0.2050*** (0.0031)** | **0.2563*** (0.0069)** | **0.2560*** (0.0069)** |
| **RISK** | -0.0055 (0.0049) | 0.002 (0.0108) | 0.0007 (0.0072) | **0.1603*** (0.0368)** | 0.0195 (0.0523) | 0.0087 (0.0514) |
| **CL** | **0.0085*** (0.0009)** | **0.010*** (0.0023)** | **0.0094** (0.0023)** | **-0.0318*** (0057)** | **0.0440*** (0.0141)** | **0.0430*** (0.0140)** |
| **RATS** | **0.0048*** (0.0005)** | | **0.0055*** (0.0013)** | **0.0102*** (0040)** | | **0.0293*** (0.0068)** |
| **BSIZE** | | **-0.0015** (0.0007)** | **-0.0017*** (0.0007)** | | **0.0092** (0.0044)** | **0.0094*** (0.0043)** |
| **AUDIND** | | **0.0002*** (0.0009)** | **0.0003** (0.0001)** | | **0.0005** (0.0005)** | 0.0004 (0.0005) |
| **CBFCEO** | | - 0.005 (0.0078) | -0.0043 (0.0077) | | **-0.0879** (0.0488)** | **-0.0858* (0.0486)** |
| **DCEOB** | | **-0.013** (0.0063)** | **-0.0146*** (0.0063)** | | **-0.0420** (0.0379)** | **-0.0371** (0.0371)** |
| **DCEOC** | | -0.001 (0.0089) | -0.006 (0.0089) | | 0.0820 (0.0545) | 0.0790 (0.0542) |
| **AUDC** | | **0.0260*** (0.0095)** | **0.0290*** (0.0095)** | | **0.0792** (0.0463)** | **0.0837** (0.0358)** |
| **AUDEXP** | | **0.0100** (0.0046)** | **0.0910** (0.0046)** | | -0.0071 (0.0298) | 0.0082 (0.0296) |
| **Const.** | **-0.0546*** (0.0243)** | **-0.296*** (0.0557)** | **0.2268*** (0.0601)** | **13.9290*** (2.602)** | **-3.3391*** (0.2847)** | **2.9273*** (0.2849)** |
| **Obs.** | 8150 | 1459 | 1458 | 8211 | 1429 | 1429 |
| **Wald** | **329.18*** ** | **140.02*** ** | **160.37*** ** | **4866.37*** ** | **1563.98*** ** | **728.21*** ** |
| **LR** | **3880.84*** ** | **542.65*** ** | **559.25*** ** | **4984.38*** ** | **340.11*** ** | **340.11*** ** |

**Notes**: Variables: LEV, Leverage; ROA, Return on Assets; Tobin' Q; BSIZE, Board size; DCEOC, CEO/Chair Duality; DCEOB, CEO/Board Duality; CBFCEO, Chairman of the Board is a Former CEO; AUDC, Audit Committee; AUDIND, Audit Committee Independence; AUDEXP, Audit Expertise; RATS, Sovereign Rating; FSIZE, Firm Size; MTB, Market-to-Book; RISK, Company Risk; CL, Current Liquidity.
*,**,***Significant at 10, 5 and 1 percent levels, respectively

Unlike prior studies that generally create an index that reflects the quality of corporate governance (Ghafran & O'Sullivan, 2017; Ng & Arrif, 2019), the investigation of the individual effects of each variable revealed the importance of existence, independence and expertise of the audit committee to improve firm performance and facilitate companies' access to the credit market. This study highlighted the importance of corporate governance because, when independent auditors issue their reports, managers are encouraged to seek projects and decisions that increase shareholders' wealth (Ararat *et al.*, 2017; Bansal & Sharma, 2016).

## 5. SUMMARY AND CONCLUSION

This study investigated the impacts of sovereign rating and corporate governance on the leverage and performance of Latin American firms from 2004 to 2018. The method consisted in a three-level hierarchical regression model with fixed and random coefficients, estimated by maximum likelihood (LR). Unlike other studies, which in general build governance quality indexes, this research analyzed governance attributes to grasp their individual effects, adopting variables underused in the governance literature.

The regression results of the null models showed that the firm level was responsible for a variation in leverage of 62.71% and in performance of 61.90%. The time level had a greater influence on the variation in ROA (65.42%). In all scenarios tested, the country level influenced the variation of Tobin's Q by 5.1%.

Our study confirmed all its hypotheses with the regression models. We showed that, in the absence of corporate governance mechanisms, sovereign rating is one of the factors that positively influences the leverage of Latin American firms. However, in the presence of governance attributes, the rating has no longer a significant relationship with leverage. We inferred that sovereign rating and governance may act in this study as substitute mechanisms in their relationship with leverage, as both of them originally act to raise investor confidence. Regarding performance, we concluded that the higher the sovereign rating – the credit risk of countries measured by rating agencies –, the higher the return on asset and value of companies.

Firms were less leveraged when there were more independent members in the audit committee and when the CEO was also the chairman of the board; in contrast, the leverage increased when the chairman was a former CEO, highlighting inherent agency conflicts. Regarding performance, the board size and CEO/board member duality reduced companies' ROA, while the audit committee structure significantly increased it. The presence of a former CEO as the chairman of the board displeased the market, since this variable had a negative relationship with Tobin's Q.

This study contributes to the literature by providing support to clarify the agency theory and information asymmetry, because it addressed factors controlled and non-controlled by managers that can influence management actions in Latin America. Governance mechanisms, such as existence, independence and expertise of an auditee committee, validate the quality of financial information disclosed by companies and make them reliable, which minimizes information asymmetry problems and improves performance.

From a practical point of view, this study can assist managers in choosing governance mechanisms that can increase the performance and value of their businesses in periods of high perception of sovereign risk, as well as guide their strategies to mitigate agency problems. In short, Latin American governments need to stabilize their economic and political environment to attract foreign investors and value their domestic companies.

This study had some limitations: the lack of corporate governance data that led to the exclusion of other Latin American countries – which may signal a delay in these States to adopt good governance practices – and the non-inclusion of the industry level effects in the analysis. Therefore, future research may deepen this study by incorporating the industry level or by exploring other governance attributes.

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