

Sovereign Rating, Macroeconomic Indicators and Firm Performance: Evidence from Latin America

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Abstract

The purpose of this paper is to investigate the relationship between sovereign rating, financial leverage, macroeconomic indicators and the performance of non-financial listed companies based in five Latin America emerging countries, from 2010 to 2017. Using a sample of 1,424 non-financial listed firms, the authors employed a panel data regression. The Chow, Breusch-Pagan and Hausman tests confirmed the fixed effects hypothesis. Return on asset, return on equity and Tobin's Q were used to measure firm performance. The evidence points that the sovereign rating quality increases return on assets and the market value of Latin American firms. Financial leverage, as well as gross domestic product, interest and inflation rates positively affect company performance, while corporate tax significantly decrease return on asset and Tobin' Q. The study found significant differences of the effects of sovereign rating, gross domestic product and corporate tax between the performance of companies based in Brazil and their pairs based in Argentina, Chile, Colombia and Mexico. The study provides empirical evidence on the implications of the sovereign rating and macroeconomic policies on companies' performance in Latin America, considering that few studies address these macroeconomic aspects in the corporate finance field. The empirical evidence has implications related to macroeconomic policies, as well as the consequences of the rating agencies report on managerial decisions

Keywords: Sovereign Rating, Macroeconomic Indicators, Leverage, Performance, Latin America.

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1. Introduction

Within the proposal of Modigliani and Miller (1958), studies on capital structure and performance investigate the existence of an optimal capital structure that increases the firm' value (Dada and Ghazali, 2016; Vätavu, 2015; Vithessonthi and Tongurai, 2015). The authors highlighted that there is no relevance between debt choice and firm investment, however, Modigliani and Miller (1963) emphasize that the tax benefits is also used to leverage companies' investments and, consequently, increase their value. In this context, several theories about the capital structure have emerged (Barclay and Smith, 2005; Harris and Raviv, 1991, Myers, 1977), as well as agency theory and ownership structure (Jensen and Meckling, 1976; Myers, 1986).

Jensen and Meckling (1976) emphasized the ownership structure theory to investigate the agency costs incurred by company due to the presence of third-party capital in debt structure. Myers and Majluf (1984) discussed the pecking-order theory arguing that companies follow a hierarchical order in which they prioritize retained earnings followed by debt before issuing shares as an investment strategy. Kraus and Litzenger (1973) and Myers (1984) evidenced the trade-off theory highlighting that companies use the tax benefits derived from debt to find a structure that increase the firm's value. Additionally, Baker and Wurgler (2002) approached the market timing, emphasizing that firms take advantage of a market window to get into debt during periods when stock prices are valued and when conditions are favorable.

Studies carried out in several countries provide empirical evidences on the capital structure theory where its determinants (Antoniou et al., 2008; Frank and Goyal, 2009; Güner, 2016) and its impacts on firms' performance are investigated (Dada and Ghazali, 2016; Vätavu, 2015; Vithessonthi and Tongurai, 2015). In addition to studies on the irrelevance of capital structure, other theorists argue that external aspects due to the environment influence both capital structure and company's value. In this perspective, several researches investigate separately the impact of sovereign rating (Almeida et al., 2017; Freitas and Minardi, 2013; Kisgen, 2009 and 2019; Sensoy, 2016) and macroeconomic indicators on firms' performance (Issah and Antwi, 2017; Bernardo et al., 2018; Vätavu, 2015; Zeitun et al., 2007).

However, few studies present an integrated view of the effects of sovereign rating and macroeconomic policies on the firm's financial performance. Vätavu (2015) points out that financial restriction increased in period of political crisis and low economic growth characterized by high inflation and interest rates. Consequently, companies face difficulties to fund themselves due to the illiquidity of the capital market that suffers from the evasion of foreign exchange. This factor is inherent in the default risks caused by the downgrade of a country's sovereign rating (Cantor and Packer, 1996; Rafay, Chen et al., 2018). In this context, this paper aims to investigate the effects of sovereign rating, macroeconomic policies on the performance of listed

companies based in five emerging countries in Latin America from 2010 to 2017.

According to the International Monetary Fund (2017), between 2010 and 2017 Argentina, Brazil, Chile, Colombia and Mexico experienced a period of strong economic growth, with an increase in the gross domestic product, low inflation and interest rates, in addition to having their credit risks classified as investment grade by rating agencies - Standard and Poor, Fitch and Moody's. That moment followed a political crisis characterized by rising inflation and interest rates with more than 30% in 2015 in Argentina and negative growth in the Gross Domestic Product in Brazil between 2015 and 2017.

As a complement, the precariousness of the political and economic conditions led the rating agencies to withdraw the investment grade of these countries, because in addition of being perceived as at-risk default they entered into a recession process. According to Bernardo et al., (2018), Latin American countries share the same conditions, so that a crisis in Argentina and Brazil directly affects the macroeconomic scenario of Chile, Mexico, Peru and Colombia. Considering that few studies investigate these aspects in the corporate finance field, this study collaborate the literature by highlighting empirical evidence on the impacts of sovereign rating and the macroeconomic indicators on the performance of Latin American companies.

2. Theoretical Framework

2.1 Financial Leverage and Firm Performance

Discussions around the relationship between capital structure and firm performance started with the proposition of Modigliani and Miller (1958) in which they highlighted the irrelevance of debt choice in companies' investment considering a perfect market, without taxes, no transaction costs and no bankruptcy costs. In a different perspective, Durand (1959) emphasized the existence of an optimal capital structure that may increase firms' value. Although Modigliani and Miller (1963) considered the possibility that companies could use tax benefits to reduce capital costs and financing their investments, questions about the determinant of an optimal structure that provides better performance gave rise to several theories that deal with the subject in different ways.

Kraus and Litzenberger (1973) presented the trade-off theory defending that companies take advantage of the tax benefits derived from debt in order to find an optimal structure capable of adding value to shareholders wealth. Myers and Majluf (1984) evidenced the pecking-order theory emphasizing that due to operating costs and the availability of foreign exchange, companies prioritize the following financing hierarchy: retained earnings, bank debt and stock issuance.

Additionally, based on the information asymmetry Jensen and Meckling (1976) developed the agency theory by demonstrating that the presence of third party resources in the capital structure generates conflicts of interest between creditors, shareholders and managers, which consequently influence the company value. The Market-Timing theory tested by Baker and Wurgler (2002) argues that managers take into consideration the movement of shares in the market to decide the opportune moment to raise funds.

An overview of these theories shows that there is no consensus on the optimal capital structure that maximizes firms' value. However, there is a large volume of empirical studies around the world that investigate the determinants of capital structure (Antonioni et al., 2008; Güner, 2016; Handoo and Sharma, 2014; Harris and Raviv, 1991), and its effects on companies' performance (Appiadjei, 2014; Dada and Ghazali, 2016; Le and Phan, 2017; Vätavu, 2015; Vithessonthi and Tongurai, 2015).

Using a sample composed of listed companies in Vietnamese stock exchange, Le and Phan (2017) found that leverage negatively and significantly influence firms' performance. Vithessonthi and Tongurai (2015) investigated the relationship in domestic and internationalized non-financial listed companies in Thailand from 2007 to 2009. They found that leverage is negatively related to the performance of firms oriented towards the local market and positively to internationalized firms. With a sample of 100 listed companies on the Nigerian Stock Exchange (NSE) from 2010 to 2014, Dada and Ghazali (2016) did not find a significant effect of leverage on firms' performance.

In Latin America, Bastos and Nakamura (2009) studied a sample of 297 companies based in Brazil, Mexico and Chile from 2001 to 2006. They found statistical evidence that showed a strong implication of the pecking order and trade-off theories on the capital structure. From the evidence presented, we can observe that there is no consensus on the influence of capital structure on companies' performance, in this context, a neutral, positive or negative relationship between leverage and firm performance is expected in Latin America, which will be verified by the following hypotheses:

H_{1.0}: There is no relationship between leverage and firm performance in Latin America.

H_{1.1}: There is a negative relationship between leverage and firm performance in Latin America.

H_{1.2}: There is a positive relationship between leverage and firm performance in Latin America.

2.2 Macroeconomic indicators and firm performance

In addition to the firm specific factors, the macroeconomic scenario characterized as external factors, which not

dependable on management actions also influence its performance (Zeitun et al., 2007). Several researchers demonstrated that government decisions materialized by monetary policies have significant impacts on different sectors of the economy through debt, credit availability, directly and indirectly affecting the activities of companies (Bernardo et al., 2018; Rafay et al., 2018; Vätavu, 2015). These studies that address the impacts of macroeconomic factors on corporate finance, consider variables such as inflation, gross domestic product, interest rate and exchange rate present empirical evidence that stock market and financial market conditions affect companies performance in periods of political and economic instability.

According to Zeitun et al., (2007), understanding the effect of macroeconomic factors on firm is an important factor in the development of appropriate strategies to maintain the market value and financial performance of companies during periods of stress. White (2010) points out that a scenario characterized by high inflation and interest rates, as well as low gross domestic product growth can lead to bankruptcy risks. Such factors are inherent in the rise of credit costs that influence financial performance and share price in the capital market (Ater, 2017; Issah and Antwi, 2017).

Issah and Antwi (2017) investigated the role of macroeconomic variables in the performance of companies based in the United Kingdom using return on assets (ROA) and return on equity (ROE). They found that the unemployment rate, GDP growth, interest rates and inflation significantly influence the performance of UK firms. Ater (2017) studied the effects of macroeconomic factors on the performance of the Nairobi listed firms and pointed out evidence that interest rates and inflation negatively influence the companies' value, while the GDP was positively impacted, indicating that better macroeconomic conditions increase firm value. Vätavu (2015) investigated the relationship between capital structure and performance of 196 listed companies in Romania from 2003 to 2010, considering the impacts of macroeconomic indicators. He found that in periods of high interest rates and inflation, firms are less leveraged and have poor performance.

In the Latin American scenario, some studies address the impacts of macroeconomic indicators on firms' capital structure and financial performance (Bernardo et al., 2018; Camargos et al., 2015; Martins and Terra, 2015; Zaniboni and Montini, 2017). Bernardo et al., (2018) investigated the influences of macroeconomic factors on the leverage of companies based in Brazil, Argentina, Chile, Colombia, Mexico and Peru from 2009 to 2014, and they found that inflation, GDP, interest rate and GDP per capita are significantly related. Over a 13-year period, Martins and Terra (2015) studied the impacts of macroeconomic variables on debt and the market value using a sample of 612 listed companies based in Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela. The authors found that GDP per capita and the inflation rate positively influence leverage, while the real interest rate influences negatively.

In view of the evidence presented, we inferred that companies based in Latin America are subject to variations in macroeconomic indicators, and their impacts may significantly affect their performance. In this sense, we suggest the following hypotheses:

H_{2.0}: There is no significant relationship between interest rates, inflation, GDP and firm performance in Latin America.

H_{2.1}: There is a significant relationship between interest rates, inflation, GDP and firm performance in Latin America.

2.3 Sovereign Rating and Firm Performance

In recent decades, the globalization of markets has intensified the flow of capital in the international financial system, providing access to cheaper financing sources for companies in need of capital and operating in illiquid markets. Jensen and Meckling (1976) emphasize that people are investing their resources, without being aware of the firms' financial conditions. In this context, the problem of information asymmetry became evident, which, due to the gap in the relationship between investors and creditors, favored the emergence of rating agencies in order to assess the credit quality of companies - Corporate rating - and countries - sovereign Rating (Rafay et al., 2018; Riaz et al., 2019; White, 2010).

The rating industry is controlled by three agencies - Standard and Poor's, Fitch Rating and Moody's Investors - that have established themselves in the international financial system, becoming protagonists in the production and disclosure of the corporate and sovereign risk rating, influencing the functioning of the global market of capital. According to Cantor and Packer (1996), rating agencies use different methodologies to generate a scale that provides information about a creditor's desire and ability to honor its obligations on time.

The importance of risk rating reports issued by agencies in the market has raised discussions in the literature. In this context, most of the authors investigate the impact of corporate rating change on capital structure and performance (Kisgen, 2019; Krichene and Khoufi, 2016; Sajjad and Zakaria, 2018; Shaheen and Javid, 2014; Shin et al., 2018). However, the few studies that investigate the implications of sovereign rating on companies are focus on the relationship with the market performance (Almeida et al., 2017; Chen et al., 2013; Chen et al., 2016).

Investigations that involving the sovereign rating address the relationship with countries' macroeconomic

conditions (Chen et al., 2013; Chen et al., 2016; Kaminsky and Schmukler, 2002) and firm performance (Afonso et al., 2012; Almeida et al., 2017; Riaz et al., 2019). In a study involving 3991 listed firms in 80 countries from 1990 to 2013, Almeida et al. (2017) analyzed the impacts of sovereign rating on corporate performance. Their empirical evidences show that the sovereign rating downgrade negatively related to the corporate performance.

In Latin America, several studies investigated the impact of sovereign rating variation issued by the agencies on capital markets (Ballester and Urteaga, 2017; Biglaiser and DeRouen, 2007; Freitas and Minardi, 2013; Rogers et al., 2013; Sensoy, 2016). Freitas and Minardi (2013) analyzed the reactions of the capital markets of Argentina, Brazil, Chile and Mexico to the rating variation announcements, they found that the impacts are more significant in the rating downgrade but there was no significant effect when an upgrade was announced.

The evidence found in the literature shows that sovereign rating significantly influences the macroeconomic conditions of countries and, consequently, affects firm performance. The study by Ballester and Urteaga (2017) on the interrelation between the positive and negative announcements of rating change in Latin America show that countries are subject to the same economic conditions to the point that a downgrade of Brazil and Argentina generate contagion in the other capital markets of the region.

In short, it appears that changes in the sovereign rating can significantly affect firm performance through the consequences on the capital market. Thus, we expect a significant relationship between sovereign rating and the performance of Latin American companies, as will be verified in the following hypotheses:

H_{3.0}: There is no significant relationship between sovereign rating and firm performance in Latin America.

H_{3.1}: There is a significant relationship between sovereign rating and firm performance in Latin America.

3. Methodology

3.1 Sample and data

To analyze the impacts of sovereign rating, macroeconomic indicators and leverage on the performance of Latin American companies, initially, a sample of 3,570 listed firms on the stock exchanges of Argentina, Brazil, Chile, Colombia and Mexico was collected from 2010 to 2017. Due to their particular accounting and capital structure, we excluded all companies belonging to the financial and insurance sectors. Then, we removed firms without information in the period under analysis, as well as those with negative total assets and equity. Thus, the final sample was composed of 1,424 firms.

Financial data for companies were extracted from Economática®, while the sovereign rating and macroeconomic data were collected from Thomson Reuters and World Bank databases respectively. The dependents, independents and controls variables used in this study, as well as their metrics, expected signs and their based studies are shown in Table 1.

Regarding the sovereign rating (RATS) variable, rating agencies disclosed a scale using a combination of alphabetical letters indicating a creditor risk level and ability to honor its obligations over time. In this scenario, Standard and Poors, Fitch Rating and Moodys Investors use a proportional rating notation that reflects the same degree of risk for countries. In order to facilitate the use in regressions, following Ballester and Urteaga (2017), and Freitas and Minardi (2012), we transformed the scale by assigning values between 1 and 21. We considered the last rating assigned to countries that had more than one rating change in the same year.

Table 1. Study variables

Variables		Symbol	Metrics	Expected Signal	Based Studies
Dependents	Performance	ROA	Net Income/Total Assets		Le & Phan, 2017; Nassar, 2016
		ROE	Net Income/Equity		Jiraporn & Liu, 2008; Le & Phan, 2017
		TOBIN_Q	(Total Debt+Market Value)/ Total Assets		King & Santor, 2008; Le & Phan, 2017
Independents	Leverage	LEV	Total Debt / Total Assets	-/+	Frank & Goyal, 2009
	Sovereign Rating	RATS	Assumes values ranging from 1 to 21 according to the scale of the three main rating agencies	+	Ballester & Urtega, 2017; Freitas & Minardi, 2012;
	Gross Domestic Product	GDP	GDP growth in the period	+	Chen <i>et al.</i> , 2013; Martins & Terra, 2015
	Interest Rate	INTR	Annual mean interest rate	-	Vätavu, 2015; Chen <i>et al.</i> , 2013
	Inflation Rate	INF	Annual mean of inflation rate	-	Zeitun, Tian & Keen, 2007
	Corporate Tax	TAX	Annual corporate income tax	-	Vätavu, 2015
Control	Growth	GROWTH	Percentage change in Net Operating Revenue over the year	+	Kayo & Kimura 2011; Le & Phan, 2017
	Tangibility	TANG	Fixed Assets/Total Assets	-	Krichene & Khoufi, 2016
	Investment	INV	Capital Expenses/Total Assets	+	Chakraborty, 2010; Le & Phan, 2017
	Cash Flow	CFL	Cash Flow/Total Assets	+	Le & Phan, 2017
	Firm Size	SIZE	Ln (Total Assets)	+	Kayo & Kimura, 2011
	Sector	SECTOR	Sector Classified by Economática		Kayo & Kimura, 2011

3.2 Econometric Model

To analyze the effects of sovereign rating, macroeconomic indicators and financial leverage on the performance of Latin American companies, following Vätavu (2015) we used a panel data regression with fixed effects. According to Hill, Griffiths and Judge (1999) it allows to observe the effects of omitted variables that do not vary between individuals and remain constant over time. To specify this model, we performed the Chow, Breusch-Pagan and Hausman tests that confirm the fixed effects hypothesis estimated by the following equation:

$$Y_{i,k,t} = \alpha + \beta \text{LEVERAGE}_{i,k,t} + \lambda \text{SRATING}_{k,t} + \gamma \text{MACROECONOMIC}_{k,t} + \delta \text{CONTROL}_{i,k,t} + \chi \text{SECTOR}_{i,k} + m_i + n_k + v_t + \mu_{i,k,t}$$

Where:

$Y_{i,k,t}$: ROA, ROE and Tobin's Q of firm i in country k and time t;

$\text{LEVERAGE}_{i,k,t}$: Financial leverage of firm i in country k and time t;

$\text{SRATING}_{k,t}$: Sovereign rating of country k at time t;

$\text{MACROECONOMIC}_{k,t}$: Macroeconomic variables of country k at time t;

$\text{CONTROL}_{i,k,t}$: Control variables of firm i in country k and time t;

$\text{SECTOR}_{i,k}$: Sector of firm i in country k

m_i : Fixed effect included in the model specification to control company-specific unobservable heterogeneity and time-invariant for each firm in each country;

n_k : Country fixed effect included in the model specification to control variant effects not observed for each country;

v_t : Fixed effect included in the model specification to control variant effects not observed over time;

$\mu_{i,k,t}$: The stochastic error term.

This equation was developed in three models to test the study hypotheses based on Vätavu (2015), Issah and Antwi (2017) that also investigated the impacts of leverage and macroeconomic factors on companies'

performance. It is worth mentioning that, considering the nested structure of the data, we considered employing the hierarchical model, but it proved to be inconsistent, since the temporal effects were not significant, and the coefficient of the random effects parameters was equal to zero.

4. Results and Discussions

4.1 Descriptive Statistics

Table 2 shows the descriptive statistics for the study variables. The results of the general sample indicate a mean return on assets (ROA) and return on equity (ROE) of 9.04% and 22.33% and a standard deviation of 6.04% and 18.08% respectively. Tobin's Q representing the market performance assumes a mean value equal to 1.76 and a standard deviation of 1.21.

Table 2. Descriptive statistics

Variables	Obs.	Mean	Std. Deviation	Min.	Max.
ROA	3,749	0.0904	0.0604	0.005	0.23
ROE	3,727	0.223	0.1808	0.010	0.72
Tobin_Q	3,632	1.76	1.21	0.05	4.48
LEV	3,648	0.2314	0.1624	0	0.52
RATS	7,760	12.69	3.15	5.33	18.5
GDP	7,717	2.41	2.96	-3.54	10.12
INTR	7,760	5.09	6.32	-11.38	14.05
INF	7,760	6.77	6.57	1.45	40.97
TAX	3,788	0.02	0.09	0.29	0.74
GROWTH	2,733	0.03	0.18	-0.30	0.44
TANG	3,747	0.29	0.24	0	0.97
INV	3,385	0.05	0.05	-0.01	0.17
CFL	3,762	0.08	0.06	0.01	0.23
SIZE	3,770	13.53	1.66	10.78	16.12

Regarding the independent variables, financial leverage (LEV) assumes a mean of 23.14% and a standard deviation of 16.24%, while the mean of sovereign rating for Latin American countries was 12.69 with a standard deviation of 3.15. Concerning macroeconomic variables, the mean of the gross domestic product (GDP) for the period was equal to 2.41% and a standard deviation of 2.96. The mean of inflation and interest rates were 6.57% and 6.32%, respectively. These results show the critical macroeconomic conditions of Latin American countries during the period considering in this study, characterized by low economic growth, with relatively high interest rates and inflation, in addition to being classified in the speculative grade by the rating agencies. The mean of corporate income tax paid in the region was 2.11% and a standard deviation of 9.2%. For the variables related to firms' characteristics, growth (GROWTH), tangibility (TANG), investment (INV) and cash flow (CFL) registered means of 3%, 29%, 5% and 8% respectively.

Table 3 shows the correlation coefficients between the dependent, independent and control variables of the study. In this, the correlation coefficients of the independent and control variables with the return on assets, return on equity and Tobin's Q are relatively low, possibly reflecting the absence of multicollinearity problem. However, we performed the VIF (Variance Inflation Factor) test, which confirm no problem of this nature, since the results of the model showed mean values less than 10. Additionally, we performed the Woodridge and Wald tests and found no first order autocorrelation and heteroscedasticity problem in the regressions. In fact, even without presenting such problems, we executed the models with White's robust standard error.

4.2 Sovereign Rating, Macroeconomic Indicators and Firm Performance

Therefore, we performed three regressions considering return on assets, return on equity and Tobin's Q as dependent variables, testing the effects of the sovereign rating, macroeconomic variables and leverage as independent variables, including control variables.

The results in Table 4 show that financial leverage (LEV) negatively influences return on assets (p-value <0.01). Like Vithessonthi and Tongurai (2015), we emphasized that a high level of corporate debt is associated with low profitability. The evidence indicates that the sovereign rating (RATS) positively affects the return on assets at the 5% level of significance, pointing out that the good risk rating of countries reflects the better performance of companies. Almeida et al. (2017) highlighted that an improvement in the quality of the sovereign rating reflects the good internal conditions of countries associated with the good performance of their companies. In this context, this empirically finding show that the sovereign rating quality affects firms' performance in Latin America.

Regarding macroeconomic variables, contrary to the expected signal inflation (INF) and interest rate (INTR) showed a statically positive relationship at the level of 1% and 10% respectively. These results can explain the

findings of Bernardo et al. (2018) where Latin American companies reduced their debt level in the periods when their countries register an improvement in GDP. In this study, considering an extreme macroeconomic scenario characterized by high inflation and interest rates, associated with a high level of corporate income tax (TAX), firms avoided debt in order to maintain the scale and increase the return on their assets, as Vătavu (2015) observed in Romania.

About the control variables, tangibility (TANG), investment (INV) and firm size (SIZE) negatively impact performance, indicating large companies are less profitable when they invest more and have a large volume of tangible assets, consistent with the findings of Le and Phan (2017). In contrast, cash flow (CFL) has a positive relation at 1% level of significance, indicating that an increase in the level of available cash flow would be associated with an improvement in their performance and a reduction in debt.

Table 3. Correlation coefficients

	ROA	ROE	TobinQ	LEV	RATS	GDP	INTR	INF	TAX	GROWTH	TANG	INV	FCX	TAM
ROA	1.00													
ROE	0.77	1.00												
TobinQ	0.54	0.53	1.00											
LEV	-0.03	0.28	0.041	1.00										
RATS	-0.18	-0.23	-0.08	0.03	1.00									
GDP	0.02	-0.03	0.06	-0.03	0.26	1.00								
INTR	-0.04	-0.01	-0.07	0.08	0.05	-0.25	1.00							
INF	0.16	0.22	0.13	-0.04	-0.65	-0.25	-0.25	1.00						
TAX	-0.19	-0.13	-0.51	-0.15	-0.03	-0.03	0.01	0.03	1.00					
GROWTH	0.091	0.093	0.13	0.02	-0.02	0.07	-0.09	-0.07	-0.04	1.00				
TANG	-0.03	-0.03	-0.02	0.08	0.15	0.11	-0.21	-0.05	-0.07	-0.01	1.00			
INV	0.15	0.15	0.23	0.15	-0.05	0.07	-0.07	0.05	-0.11	0.11	0.24	1.00		
CFC	0.84	0.53	0.53	-0.26	-0.15	0.03	-0.05	0.15	-0.18	0.07	-0.11	0.07	1.00	
SIZE	-0.02	0.10	0.06	0.39	0.03	0.03	0.08	-0.12	-0.33	0.04	0.06	0.17	0.12	1.00

With regard to return on equity (ROE), it can be seen that financial leverage (LEV), gross domestic product (GDP) and inflation (INF) affect it positively at the 1% level, meanwhile, the sovereign rating showed no statistically significant relationship. For the control variables, like Salim and Yadav (2012), cash flow (CFL) and growth opportunity (GROWTH), in this research, have a positive influence on the ROE of Latin American firms. In summary, these results indicate that in a period of high gross domestic product and high inflation, companies that have more cash flow and greater growth opportunities find less financial constraints to leverage and increase their return on equity.

Finally, the results of the regression with Tobin's Q as a dependent variable show that leverage and the sovereign rating (RATS) have a positive influence at the level of 1% and 5% respectively. Almeida et al. (2017) point out that the effects of a sovereign rating change by the agencies directly affect the capital market. In this context, the evidence found here shows that a positive variation in the sovereign rating in Latin America increases the market performance of companies. The positive impact of leverage indicates an imminent agency problem in companies, when it is considered that debt is also used as a monitoring mechanism for managers to avoid investment in projects with negative present value (Salim and Yadav, 2012; Vithessonthi and Tongurai, 2015).

In addition, all macroeconomic variables also had positive and significant impacts on firms' Tobin Q, indicating that the higher the gross domestic product, interest rates, inflation and corporate income taxes therefore, the more they are valued. This evidence indicates that in periods of good classification of sovereign risk and with growth in gross domestic product, even with rising inflation, taxes and interest rates, companies are able to maintain a balance between the level of debt to finance their investments and the increased of market performance. It should be noted that the strong effect of leverage on Tobin's Q can be considered a positive aspect for the market, since it signals the use of less risky resources to finance its investments, thus protecting shareholders' wealth. The results corroborate the study of Vătavu (2015), Frank, and Goyal (2009).

Regarding the control variables, cash flow (CFL) and investment (INV) had a positive and significant impact on Tobin's Q, showing that a greater volume of cash flows and investment positively influences the companies' market value, as found by Le and Phan (2017).

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Table 4. Regression for the impacts on firm performance – Full sample

Variables	Expected Signal	ROA	ROE	TOBIN_Q
LEV	(-/+)	-0.0093***	0.1503***	0.7197***
		-0.0035	-0.016	-0.2107
RATS	(+)	0.0130**	-0.0004	0.0335**
		-0.0002	-0.0008	-0.0171
GDP	(+)	0.0005	0.0017***	0.0166*
		-0.0002	-0.0006	-0.0096
INTR	(-)	0.004***	0.0004	0.0110***
		-0.002	-0.0006	-0.0042
INF	(-)	0.002*	0.0017***	0.0308***
		-0.0001	-0.0003	-0.0035
TAX	(-)	-0.0091*	-0.0484	0.6211***
		-0.005	-0.0305	-0.2638
TANG	(-)	-0.0086***	-0.0290***	-0.0599
		-0.0025	-0.0084	-0.1163
INV	(+)	-0.0156*	-0.0155	1.5771***
		-0.0091	-0.0291	-0.3557
CFL	(+)	0.7167***	1.4340***	4.3398***
		-0.0107	-0.0334	-0.4391
SIZE	(+)	-0.0013***	0.0009	0.0447
		-0.004	-0.0014	-0.0282
GROWTH	(+)	0.0014	0.0127**	0.0419
		-0.0023	-0.0059	-0.0737
Constant		0.007	-0.0126	0.2256
		-0.0077	-0.0224	-0.4024
Observations		2529	2523	2234
Mean VIF		1.4	1.4	1.41
R ²		0.7715	0.6435	0.3197
F Test		285.4***	118.62***	10.32***
Year		Yes	Yes	Yes
Sector		Yes	Yes	Yes
Country		Yes	Yes	Yes

Note: For the coefficient of each variable, the standard-robust error is shown (in parentheses). The sign (-) represents the expected negative relationship with the dependent variables; the (+) sign is the expected positive relationship. *, **, *** represent statistical significance at the levels of 10%, 5% and 1%, respectively. The term (Yes) indicates that the estimates have been analyzed.

Regarding the control variables, cash flow (CFL) and investment (INV) had a positive and significant

impact on Tobin's Q, showing that a greater volume of cash flows and investment positively influences the companies' market value, as found by Le and Phan (2017).

4.3 Comparison between Brazil and other Countries

To explore the difference in the impact of the sovereign rating, macroeconomic indicators and leverage on the performance of Brazilian companies in relation to their peers based in Argentina, Chile, Colombia and Mexico, the sample was divided into two sub-samples. Then, we performed separate regressions using return on assets (ROA), return on equity (ROE) and Tobin's Q (Tobin_Q) as dependent variables. The results are presented in Table 5 where in columns 1 and 2 the results for Brazil and the other countries for the return on assets, columns 3 and 4 for the return on equity and in columns 5 and 6 for Tobin Q.

According to that table, through column 1, it is observed that financial leverage (LEV) and corporate income tax (TAX) negatively impact the return on assets of Brazilian companies. Considering that during the period of the study Brazil experienced a moment of high interest rates, in addition to having one of the highest corporate taxes in the region, consequently the most indebted firms had a significant reduction in their returns. When considering the other countries in the sample together, in column 2, the sovereign rating (RATS), interest rate (INTR) and inflation (INF) had a positive impact on ROA, meanwhile, the relationship with the income tax was negative.

In this context, as well as Almeida et al. (2017), we emphasized that the sovereign rating is an important factor that indicates the level of return of companies based in Argentina, Chile, Colombia and Mexico. It is worth noting that, in general, corporate income tax has significantly reduced firm performance, corroborating the findings of Vátavu (2015).

The non-significance of the sovereign rating in the performance of Brazilian companies can be explained when considered that the country has gone through an economic crisis, which resulted in its classification in the speculative grade by rating agencies. This statement is in line with the research by Diniz et al. (2012) which involved 88 sovereign states, highlighting that countries with better macroeconomic indicators tend to have an improvement in their risk rating.

The results in columns 3 and 4 show the impacts of macroeconomic indicators, sovereign rating and leverage on performance as measured by the return on equity (ROE) of companies in Brazil and other countries. In this assessment, we found that financial leverage (LEV), gross domestic product (GDP) and inflation (INF) showed a positive relationship with ROE of Brazilian firms. When considering firms based in Argentina, Chile, Colombia and Mexico, in addition to leverage, inflation also positively influenced the return on equity. Additionally, we observed that in Brazil, the interest rate (INTR) significantly reduces ROE.

In the scenario with Tobin's Q as a dependent variable, we found a positive relationship with financial leverage, sovereign rating and gross domestic product for Brazilian firms, while it was negative for interest rates and inflation had a negative relationship. For Argentina, Chile, Colombia and Mexico together, in addition to financial leverage, gross domestic product and interest rates, the sovereign rating did not show a significant relationship with Tobin's Q, in contrast, all macroeconomic variables show evidence of positive and significant impacts on the market value of these companies.

The findings point to different aspects in the impact of the independent variables on performance between the two sub-samples. First, when considering the period of political and economic instability that resulted in the loss of investment grade in Brazil, the implications of risk rating reports in the international financial system makes the sovereign rating as an indicator how valued are firms. Second, the low variation in the sovereign rating of Chile, Colombia and Mexico during the period turn it less significant macroeconomic indicators to improve firm performance. It is worth noting that the opposite effect of interest and inflation rates on Tobin's Q shows how important the macroeconomic scenario is to maintain stability for better performing market.

Table 5. Comparison between Brazil and other countries (Argentina, Chile, Colombia and Mexico)

Variables	ROA		ROE		TOBIN_Q	
	Brazil	Others	Brazil	Others	Brazil	Others
LEV	-0.0099**	-0.0085*	0.1551***	0.1545***	0.4573***	0.5043***
	-0.004	-0.0051	-0.0243	-0.0216	-0.1775	-0.1993
RATS	0.0003	0.0014***	-0.0069	0.0014	0.0814**	0.0037
	-0.0008	-0.0003	-0.0045	-0.001	-0.0325	-0.0092
GDP	0.0002	-0.0004	0.0036**	-0.0006	0.0319***	0.0222**
	-0.0003	-0.0003	-0.0016	-0.001	-0.0119	-0.0089
INTR	0.0001	0.0004**	-0.0025**	0.0010**	-0.0220**	0.0092**
	-0.0003	-0.0002	-0.001	-0.0005	-0.0102	-0.0051
INF	0.0007	0.0003**	0.0041**	0.0019***	-0.0370***	0.0229***
	-0.0006	-0.0001	-0.002	-0.0004	-0.0139	(0.0030)
TAX	-0.0115*	-0.0108*	-0.1109	-0.0353	0.5977	0.4602**
	-0.0069	-0.006	-0.0775	-0.0227	-0.5281	-0.2265
TANG	-0.0039	-0.0128***	-0.0117	-0.0381***	-0.0129	0.009
	-0.028	-0.0046	-0.0137	-0.0118	-0.1383	-0.1362
INV	-0.0042	-0.0220*	-0.0309	-0.0055	1.6075***	1.1321***
	-0.0131	-0.0129	-0.0463	-0.0377	-0.4017	-0.286
CFL	0.7449***	0.6922***	1.4354***	1.4325***	4.7384***	4.2803***
	-0.014	-0.0159	-0.0616	-0.0403	-0.5219	-0.5009
SIZE	-0.0006	-0.0018***	0.0029	-0.0046**	-0.0111	0.0046
	-0.006	-0.0006	-0.0034	-0.0015	-0.0284	-0.0225
GROWTH	0.0067*	-0.0009	0.0242**	0.0063	0.1064	0.031
	-0.0035	-0.0035	-0.0108	-0.0086	-0.0791	-0.0645
Constant	0.0111	0.0118	0.7163	0.0087	0.0106	0.0751
	-0.0247	-0.0106	-0.2297	-0.0263	-0.0247	-0.3009
Observations	1080	1449	1076	1447	964	1270
Mean VIF	3.21	1.66	3.21	1.66	3.2	1.7
R ²	0.892	0.799	0.683	0.695	0.39	0.342
F Test	258.37***	218.19***	72.86***	71.91***	13.47***	5.03***
Year	Yes	Yes	Yes	Yes	Yes	Yes
Sector	Yes	Yes	Yes	Yes	Yes	Yes
Country	Yes	Yes	Yes	Yes	Yes	Yes

Note: For the coefficient of each variable, the standard-robust error is shown (in parentheses). The sign (-) represents the expected negative relationship with the dependent variables; the (+) sign is the expected positive relationship. *, **, *** represent statistical significance at the levels of 10%, 5% and 1%, respectively. The term (Yes) indicates that the estimates have been analyzed.

The results show that for Brazilian companies, an increase in corporate income tax associated with a high level of leverage is sufficient to destroy the return on assets. We find empirical evidence that the value of companies based in Argentina, Chile, Colombia and Mexico increases when the macroeconomic indicators and the sovereign rating present favorable results to the market. Like Diniz et al. (2012) the difference between Brazil and other countries is because Chile, Colombia and Mexico registered better economic indicators and classified in the investment grade during the period.

5. Summary and Conclusions

This study jointly analyzed the impacts of sovereign rating, macroeconomic indicators and financial leverage on firm performance from five emerging economies in Latin America, using a panel data linear regression. The evidence found shows that financial leverage negatively impacts the return on assets, and positively impacts the return on equity and Tobin's Q of Latin American companies. Gross domestic product, interest rates and inflation have a statistically positive relationship with firm performance. The results found in this study confirm that better quality of the sovereign rating increase return on assets and market value of companies in Latin America.

We found that an increase in the corporate income tax significantly reduces performance.

When comparing the relationship of macroeconomic variables, sovereign rating and leverage on the performance of firms in Brazil and other countries, no significant difference was found in the impacts of leverage. We observed a negative relationship of interest rates and inflation on the performance of Brazilian companies, while this relationship was positive for those based in Argentina, Chile, Colombia and Mexico.

Significant differences were found in terms of significance of the effects of gross domestic product and corporate income tax on return on equity and Tobin's Q in. The sovereign rating only had a significant relationship with return on assets of Brazilian companies, for those based in Argentina, Chile, Colombia and Mexico it was positive only with Tobin's Q.

The evidence found in this study shows that the sovereign rating, as well as the macroeconomic indicators are relevant factors and that influence firm performance in Latin America. We contributed the literature providing empirical evidence on the implications of sovereign rating and macroeconomic indicators on companies in the region, considering the few studies that address these aspects in the field of corporate finance.

This study had some limitations, among which we highlight the choice of only 5 countries in the region, since the lack of sufficient data in Economática® resulted in the omission of many companies. The use of the panel data regression to analyze variables together at the micro and macro level might hide possible effects not captured by the method. Future research may use other database and consider other countries such as Peru, Uruguay and Venezuela. Other methods, such as hierarchical regression and dynamic panel data models may provide different results.

References

- Afonso, A.; Furceri, D. & Gomes, P. (2012), "Sovereign Credit Rating and Financial Market Linkages: Application to European Data", *Journal of International Money and Finance*, 31(3), 606-638.
- Almeida, H., Cunha, I., Ferreira, M. A. & Restrepo, F. (2017), "The real effects of credit ratings: The sovereign ceiling channel", *The Journal of Finance*, 72(1), 249-290.
- Antoniou, A., Guney, Y. & Paudyal, K. (2008), "The Determinants of Capital Structure: Capital Market-Oriented versus Bank-Oriented Institutions", *Journal of Financial and Quantitative Analysis*, 43(1), <https://doi.org/10.1017/S0022109000002751>
- Appiadjei, E. A. (2014), "Capital structure and firm performance: Evidence from Ghana stock exchange", *Research Journal of Finance and Accounting*, 5(1)6, 37-43.
- Ater, D. K. (2017), "The joint Effect of Firm Growth, Macroeconomic Factors and Capital Structure on the Value of Nonfinancial Firms Listed on the Nairobi Securities Exchange", *International Journal of Economics, Commerce and Management*, 5(9), 618 – 628.
- Baker, M., & Wurgler, J. (2002), "Market timing and capital structure", *Journal of Finance*, 57(1), 32. <https://doi.org/10.1111/1540-6261.00414>
- Ballester, L. & González-Urteaga, A. (2017), "How credit ratings affect sovereign credit risk: Cross-border evidence in Latin American emerging markets", *Emerging Markets Review*, 30, 200-214. <https://doi.org/10.1016/j.ememar.2016.09.004>
- Barclay, M. J. & Smith, C. W., (2005), "The Capital Structure Puzzle: The Evidence Revisited", *Journal of Applied Corporate Finance*, 17(1), 8-17.
- Bernardo, J., Albanez, T. & Securato, R. (2018), "Macroeconomic and Institutional Factors, Debt Composition and Capital Structure of Latin American Companies", *Brazilian Business Review*, 15(2), 152–174. <https://doi.org/10.15728/bbr.2018.15.2.4>
- Biglaiser, G. & DeRouen, K. (2007), "Sovereign bond ratings and neoliberalism in Latin America", *International Studies Quarterly*, 51(1), 121–138.
- Camargos, M., Coutinho, S. & Xavier, G. (2015), "Influência de variáveis macro e microeconômicas nas emissões primárias de empresas brasileiras", *Revista Pretexto*, 16(1), 69-83.
- Cantor, R. & Packer, F. (1996), "Sovereign risk assessment and agency credit ratings", *European Financial Management*, 2(2), 247–256. <https://doi.org/10.1111/j.1468-036X.1996.tb00040.x>
- Chen, S., Chen, H. Y., Chang, C. & Yang, S.L. (2013), "How do sovereign credit rating changes affect private investment?" *Journal of Banking and Finance*, 37(12), 4820–4833. <https://doi.org/10.1016/j.jbankfin.2013.09.002>
- Chen, S., Chen, Y., Chang, C. & Yang, S.L. (2016), "The relation between sovereign credit rating revisions and economic growth", *Journal of Banking and Finance*, 64, 90-100.
- Chakraborty, I. (2010), "Capital structure in an emerging stock market: the case of India", *Research International Business Finance*, 24(3), 295–314.
- Dada, A. O. & Ghazali, Z. B. (2016), "The Impact of Capital Structure on Firm Performance: Empirical Evidence from Nigeria", *Journal of Economics and Finance*, 7(4), 23-30. <https://doi.org/10.9790/5933-0704032330>

- Diniz, T., Amaral, H. & Ferreira, B. (2012), “Avaliação do risco soberano: o impacto de variáveis econômicas, políticas e sociais”, *Economia Global e Gestão*, 17(3), 09-31.
- Durand, D (1959), “The cost of capital, corporate finance and the theory of investment: comment”, *American Economic Review*, 49(4), 639-655.
- Frank, M.Z. & Goyal V. K. (2009), “Capital Structure Decisions: Which Factors are Reliably Important?”, *Financial Management*, 38(1), 1-37.
- Freitas, A. de P. N. & Minardi, A. M. A. F. (2013), “The impact of credit rating changes in Latin American stock markets”, *Brazilian Administration Review*, 10(4), 439–461. <https://doi.org/10.1590/S1807-76922013000400005>
- Güner, A. (2016), “The Determinants of Capital Structure Decisions: New Evidence from Turkish Companies”, *Procedia Economics and Finance*, 38,84–89.
- Handoo, A. & Sharma, K. (2014), “A study on determinants of capital structure in India”, *IIMB Management review*, 26(3), 170-182.
- Harris, M. and A. Raviv, (1991), “The Theory of Capital Structure”, *Journal of Finance*, 46(2), 297- 355.
- Hill, R. C.; Griffiths, W. E & Judge, G. (1999), *Econometria*, Saraiva. São Paulo, SP.
- Hunjra, A., Chani, I., Javed, S., Naeem, S. & Ijaz, M.S. (2014), “Impact of Micro Economic Variables on Firms Performance”, *International Journal of Economics and Empirical Research*, 2(2), 65-73.
- International Monetary Fund. (2017), “World economic outlook October 2017”, Available at: <https://www.imf.org/external/pubs/ft/weo/2017/02/weodata/index.aspx> (accessed 16 March 2019).
- Issah, M., & Antwi, S. (2017), “Role of Macroeconomic Variables on Firms’ Performance: Evidence from the UK”, *Cogent Economics and Finance*, 5(1), 1405581. <https://doi.org/10.1080/23322039.2017.1405581>
- Jensen, M.C. & Meckling, W.H. (1976), “Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure”, *Journal of Financial Economics*, 3, 305-360.
- Jiraporn, P. & Liu, Y., (2008), “Capital structure, staggered boards, and firm value”, *Finance and Analytic’s Journal*, 64(1), 49–60.
- Kayo, E. K., and Kimura, H. (2011), “Hierarchical determinants of capital structure”, *Journal of Banking and Finance*, 35(2), 358-371. <https://doi:10.1016/j.jbankfin.2010.08>
- Kraus, A., & Litzenberger, H., (1973), “A state preference model of Optimal Financial Leverage”, *Journal Finance*, 9, 911–922.
- Krichene, A. F., & Khoufi, W. (2016), “The effects of credit rating grades’ changes on capital structure: S&P 500”, *International Journal of Engineering and Science*. 5(2), 48–57.
- Kisgen, D. J. (2009), “The Influence of Credit Ratings on Corporate Capital Structure Decisions”, *Journal of Finance*, 19(3), 65–73. [https://doi.org/S01694758\(98\)01289-7](https://doi.org/S01694758(98)01289-7)
- Kisgen, D. J. (2019), “The impact of credit ratings on corporate behavior: Evidence from Moody's adjustments”, *Journal of Corporate Finance*, 58, 567-582.
- Kaminsky, G. & Schmukler, L. (2002), “Emerging Market Instability: Do Sovereign Ratings Affect Country Risk and Stock Returns?” *World Bank Economic Review*, 16, 171-195. <https://doi.org/10.1093/wber/16.2.171>
- King, M.R., & Santor, E., (2008), “Family values: ownership structure, performance and capital structure of Canadian firms”, *Journal Bank and Finance*, 32(11), 2423–2432.
- Le, T. V. & Phan, D. (2017), “Capital Structure and Firm Performance: Empirical Evidence from Vietnamese Listed Firms”, *Research in International Business and Finance*, 42, 710-726. <https://doi.org/10.2139/ssrn.2312006>
- Margaritis, D. & Psillaki, M. (2010), “Capital Structure, Equity Ownership and Firm Performance”, *Journal of Banking and Finance*, 34, 621–63.
- Martins, C. & Terra, S. (2015), “Maturidade do endividamento, desenvolvimento financeiro e instituições legais: análise multinível em empresas latino-americanas”, *Revista de Administração*, 50(3), 381-394.
- Modigliani, F. & Miller, M. (1958), “The cost of capital, corporation finance, and the theory of investment”, *American Economic Review*, 48(3), 261-297.
- Modigliani, F., & Miller, H. (1959), “The cost of capital, corporation finance, and the theory of investment: Reply”, *American Economic Review*, 49(4), 655-669.
- Modigliani, F. & Miller, M. (1963), “Corporate Income Taxes and the Cost of Capital: A Correction”, *The American Economic Review*, 53(3), 433-443.
- Myers, S. (1977), “Determinants of Corporate Borrowing”, *Journal of Financial Economics*, 5, 147–175.
- Myers, S., (1984), “The capital structure puzzle”, *Journal of Finance*, 39(3), 575–592.
- Myers, S. C. and Majluf, N. S. (1984), “Corporate financing and investment decisions when firms have information that investors do not have”, *Journal of Finance and Economic*, 13, 187–221.
- Nassar, S. (2016), “The impact of capital structure on Financial Performance of the firms: Evidence from Borsa Istanbul”, *Journal of Business and Financial Affairs*, 5(2), 1–4. [doi:10.4172/21670234.1000173](https://doi.org/10.4172/21670234.1000173)

- Pandey, I.M., (2001), "Capital Structure and the Firm Characteristics: Evidence from an Emerging Market", *Indian Institute of Management Ahmedabad*, Working Paper No.2001-10-04. Available at: <http://dx.doi.org/10.2139/ssrn.300221>
- Rafay, A., Chen, Y., Naeem, M. & Ijaz, M. (2018), "Analyzing the Impact of Credit Ratings on Firm Performance and Stock Returns: An Evidence from Taiwan", *Iranian Economic Review*, 22(3), 767-786.
- Riaz, Y., Shehzad, T. & Umar, Z. (2019), "Pro-cyclical effect of sovereign rating changes on stock returns: a fact or factoid?", *Applied Economics*, 51(15), 1588-1601.
- Rogers, D., Silva, W., Neder, D. & Silva, R. (2013), "Rating de crédito e estrutura de capital: evidências da América Latina", *Revista Brasileira de Finanças*, 11(3), 311-341.
- Shin, A., Chen, Y., Naeem, M. & Ijaz, M. (2018), "Analyzing the Impact of Credit Ratings on Firm Performance and Stock Returns: An Evidence from Taiwan", *Iranian Economic Review*, 22(3), 767-786.
- Salim, M. & Yadav, R. (2012), "Capital Structure and Firm Performance: Evidence from Malaysian Listed Companies", *Procedia Social and Behavioral Sciences*, 65, 156-166.
- Sajjad, F. & Zakaria, M. (2018), "Credit Rating as a Mechanism for Capital Structure Optimization: Empirical Evidence from Panel Data Analysis", *International Journal of Financial Studies*, 6(1), 13. <https://doi.org/10.3390/ijfs6010013>
- Sensoy, A. (2016), "Impact of sovereign rating changes on stock market co-movements: the case of Latin America", *Applied Economics*, 48(28), 2600-2610.
- Shaheen, R. & Javid, A. Y. (2014), "Effect of Credit Rating on Firm Performance and Stock Return _ Evidence form KSE Listed Firms", *PIDE Working Papers*, 104, 1-43.
- Silva, B. A. & Silva, N. (2009), "Compartilhamento de risco na América Latina", *Economia Aplicada*, 13(4), 479-504. <https://doi.org/10.1590/S1413-8050200900040000>
- Vătavu, S. (2015), "The Impact of Capital Structure on Financial Performance in Romanian Listed Companies", *Procedia Economics and Finance*, 32, 1314-1322.
- Vithessonthi, C. & Tongurai, J., (2015), "The Effect of Leverage on Performance: Domestically-Oriented vs. Internationally Oriented Firms", *Research in International Business and Finance*, 34, 265-280. <http://dx.doi.org/10.1016/j.ribaf.2015.02.016>
- White, L. (2010), "Markets: The Credit Rating Agencies", *Journal of Economic Perspectives*, 24(2), 211-226. <https://doi.org/10.1257/jep.24.2.211>
- Yang, J. A., Cheng, H. & Lee, C.H. (2010), "The Effects of Capital Structure on Firm Performance in the Taiwan 50 and Taiwan Mid-Cap 100", *Journal of Statistics and Management Systems*, 13(5), 1069-1078.
- Zeitun, R., Tian, G. & Keen, S. (2007), "Macroeconomic determinants of corporate performance and failure: evidence from an emerging market the case of Jordan", *Corporate Ownership and Control*, 5(1), 179-194.