GESTÃO, FINANÇAS E CONTABILIDADE

EFFECT OF MARKET TIMING IN THE CAPITAL STRUCTURE OF LATIN AMERICA

EFEITO DO MARKET TIMING NA ESTRUTURA DE CAPITAL DE EMPRESAS DA AMÉRICA LATINA

EFECTO DE LO MARKET TIMING EN LA ESTRUCTURA DE CAPITAL DE AMÉRICA LATINA

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ABSTRACT
Recent studies about finance literature, have been dedicated to investigate the relation of market timing and the capital structure, revealing that the effects are not very persistent as time passes, although the tendency of these companies of increasing their capital when their market values are high, they are not constant due to market conditions. Having in mind that the choice of capital structure might be different in emerging countries, just as the Latin American countries, this study had the purpose to identify the effect of market timing in the capital structure of Latin American companies. The methodology used in the research was characterized as descriptive with documental procedures and quantitative approach to the problem. In addition, the method used was regression by panel data and the information for analysis was collected in the financial demonstration reports available on the basis of Thompson®, data from 2006 to 2014. The results showed that the market timing has an influence on the dept decisions of companies from Argentina, Brazil and Peru, while in Chile and Mexico this evidence was not observed. Besides that, the main factors that determine the capital structure of Latin American companies are the profitability, tangibility and GDP. It was also evidenced the influence of the assumptions of the theory of Pecking Order and Static trade-off in choosing the capital structure of these companies. This research contributes to the literature of financial fields when confirming that the choice of capital structure might be different in emerging countries and consequently the influence of market timing as well.
Keywords: Capital Structure; Market Timing; Latin America.

RESUMO
Estudos recentes da literatura da área de finanças, têm se dedicado a investigar a relação do market timing e a estrutura de capital, revelando que os efeitos não são muito persistentes ao longo do tempo, porém a tendência dessas empresas em aumentar seu capital quando seus valores de mercado são altos não são constantes devido às condições de mercado. Tendo em vista que a escolha da estrutura de capital pode ser diferente em países emergentes, como no caso dos países pertencentes à América Latina, este estudo teve por objetivo identificar o efeito do market timing na estrutura de capital de empresas da América Latina. A metodologia utilizada na pesquisa caracterizou-se como descritiva, com procedimentos documentais e abordagem quantitativa da questão problema. Além disso, o método utilizado foi regressão por dados em painel e as informações para análise foram coletadas nos relatórios das demonstrações contábeis, disponibilizados na base de dados Thomson®, no período de 2006 a 2014. Os resultados mostraram que o market timing tem influência nas decisões de endividamento das empresas de Argentina, Brasil e Peru, enquanto que no Chile e no México essa evidência não foi observada. Além disso, os principais fatores que determinam a estrutura de capital das companhias da América Latina são a rentabilidade, tangibilidade e PIB. Também foi evidenciado a influência dos pressupostos das teorias de Pecking Order e Static trade-off na escolha de estrutura de capital destas empresas. Esta pesquisa contribui para a literatura da área de finanças ao confirmar que a escolha da estrutura de capital pode ser diferente em países emergentes e consequentemente a influência do market timing também.
Palavras-chave: Estrutura de Capital; Market Timing; América Latina.

RESUMEN
Estudios recientes en la literatura de finanzas, se han dedicado a investigar la relación de lo *market timing* y la estructura de capital, revelando que los efectos no son muy persistentes en el tiempo, pero la tendencia de estas empresas para aumentar su capital cuando sus valores

mercado son elevadas no son constantes debido a las condiciones del mercado. Teniendo en cuenta que la elección de la estructura de capital puede ser diferente en los países emergentes, como en el caso de los países que pertenecen a América Latina, este estudio tuvo como objetivo identificar el efecto de lo *market timing* en la estructura de capital en América Latina. La metodología utilizada en la investigación se caracteriza por ser descriptiva, con los procedimientos documentales y enfoque cuantitativo para el problema de tema. Además, el método utilizado fue el de regresión de datos de panel e información para el análisis fueron recogidos en los informes de los estados financieros, disponible en la base de datos Thomson®, de 2006 a 2014. Los resultados mostraron que lo *market timing* influye en las decisiones de negocio de la deuda de Argentina, Brasil y Perú, mientras que en Chile y México no se observó esta evidencia. Además, los principales factores que determinan la estructura de capital de las empresas de América Latina están rentabilidad, lo tangible y el PIB. También se puso de manifiesto la influencia de los supuestos de la teoría de la Jerarquía y estático disyuntiva en la elección de la estructura de capital de estas empresas. Esta investigación contribuye a la esfera de las finanzas de la literatura para confirmar que la elección de la estructura de capital puede ser diferente en los países emergentes y, por tanto, la influencia de lo *market timing* también.
Palabras clave: Estructura de capital; Market Timing; América Latina.

1. INTRODUCTION

Since the publication of Durand's work (1952) and Modigliani and Miller (1958) that generated the debate about the companies' capital structures, where many empirical studies have been dedicating in the verification of a great capital structure verification. In this discussion, two traditional theories have been orienting these researches, being the *Static trade-off*'s theory and the theory of *Pecking Order.*

In *Static trade-off*'s theory it stands out that a company has its ideal capital structure, determined by the tax benefit of dept and by the costs associated with these depts. This way, based on *Static trade-off*s, companies adjust their capital structure based on the influence of Market behavior in which they are inserted (MYERS, 1984). While in the theory of *Pecking Order,* it elaborates that companies follow a financial hierarchy to make their investments. At first companies seek to utilize the inner capital, the one that the company owns designed for new investments, and after using this feature, it seeks resources by external financing, with banks, therefore the company establishes a great capital structure (MYERS; MAJLUF, 1984).

In this sense, literary aspect that portrays the external financial decisions, states that managers try to verify the line of the shareholder market time by issuing shares when it appears high in the stock market and in the repurchase of stocks when the stocks are low in the market (MAHAJAN; TARTAROGLU, 2007).

With empirical evidences in the *market timing,* the study of Baker and Wurgler (2002) provides an alternative hypothesis to explain the capital structure, mentioning that this would be the cumulative result of past attempts in the stock market.

In this context, it is presented the following question: What is the effect of the *market timing* in the companies in Latin America? With the intention of answering the problem above the general purpose of this study is to identify the effect of *market timing* in the capital structure of Latin American companies.

Empirical studies have reported the relation between the capital structure and the *market timing,* as the study of Brendea (2012), that analyzed the *market timing* influence over the capital structure in Romanian companies from 2000 to 2011, revealing that the effects are

not very persistence over time, but the tendency of these companies to increase their capital when their market values are high is not constant due to the market conditions.

Another study analyzed the panel data from the *Pecking Order theory* and the *market timing* on capital structure in Taiwanese companies. Their findings showed that the *market timing* theory is favorable for the stock market especially from 1990 to 2001, advising that the results from this theory provide an explanation when the application results from *Pecking Order*'s theory are not (CHEN, et al, 2013).

This timeline is explained by the fact that the *market timing* needs to be analyzed in a long term period, to check the stock market's behavior, as Mahajan's and Tartaroglu's studies (2008), which analyzed the relationship between the *market timing* and the capital structure in the G-7 economic group, and mentioned the need of a historical period of the stock market behavior, and they carried out their research verifying a time gap of 10 years.

The majority of previous studies used, as analysis environment, mainly developed countries, as the relationship between the *market timing* and the capital, as the study of Chen et al. (2013), points out that the choice of capital structure can be different in emerging countries, and this gap accompanies the justification in studying the relationship proposed by the issue in the research of Latin America, composed of emerging countries in development.

2. THEORETICAL

2.1 Capital Structure

The capital structure is a constant target of debate among intellectuals in finance. The classic theory of Modigliani and Miller (1958) demonstrated this discution about the existence of a great capital structure, essentially viewed from an astatic aspect, without checking the changes over time. One of its proposals in relation to investiment policy, was that the shareholders would seek for the best moment to make decisions and explore na opportunity of investimento if it were able to satisfy its gain expectations.

From these discutions, over the years more empirical studies have been arasing that try to test the initial theory created by Modigliani and Milles, 1958 by the end of the 50 decade. *Static trade-off*'s theory start from the concept that companies will have an ideal capital structure determined by tax benefits and the costs associated to the dept, where they need to adjust their capital structure, in response to the temporal impacts that cause an influence so that they can deviate their ideal capital structure (MYERS, 1984).

As the theory of *Pecking Order*, when the companies consider the market conductive for new investments, it appears that the companies follow a certain hierarchy of financing; in other words, they analyze their investments with their own resources and then search the external dept (MYERS; MAJLUF, 1984).

In this context of debates, Titman and Wessels (1988) investigate the application of the theories of *Static trade-off* and *Pecking Order* in the capital structure variables. The authors analyze the determinants of the capital structure from the companies in view of recent theories, a justification to expand the study of this empirical aspect, examining a broader set of theories of capital structure, in a way that the dept is analyzed in short and long term and does not consider to total dept only.

From these Works, new research gaps were introduced to the research of great capital structure and the theories that surround it. Ang and Jung (1993) used a different approach to test the theory of *Pecking Order* proposed by Myers (1984), based on two study requirements, having in mind that the predictions of the theory apply to the companies that face asymmetric

information and in the process of financing decisions. This research was applied on a sample of big South Korean companies, under which analyzing the data it was found that only 28% of the sample is willing to use their own resources to finance their investments, due to the asymmetry of information. The rest still prefer to ask for an intermediate-term at the banks and seek the same, and when the dept is high, the companies are willing to issue shares as a source of appeal.

The study of Rajan and Zingales (1995), aimed to identify the determinants of the developed countries that were part of the G-7 group of industrial sector companies, where it was found that the corporate leverage from those countries was similar. In addition, they stressed that the level of dept from analyzed companies have a positive relationship with the tangibility and with the negative relationship to the market value and book value, and the size and profitability.

Thus, Shyam-Sunders and Myers (1999) sought to test traditional models of capital structure with an alternative model of the theory of *Pecking Order*. Results shown by the survey, showed that this theory can be associated to the sample of mature companies analyzed by the authors, under which it was found after applications of the test pattern that the option selected by the companies is based on the hierarchy of finance.

To enlarge the literature presented, a new gap of research was tested by Frank and Goyal (2003) that seek to examine how the theory of *Pecking Order* can satisfactorily explain corporate financing behavior. In this sense, it was observed that the capital structure of American companies from the period of 1971 and 1998, making sure that the analyzed theory has a greater support for companies facing particularly serious selection problems in the search for financing alternatives.

The study of Cassar and Holmes (2003) sought to investigate the determinants of capital structure in small and medium companies in Australia. The determining factors tested were size, tangibility, profitability, growth and risk in business. The evidences showed that the tangibility, profitability and growth were the determinants of capital structure of those companies, and that these results showed the influence of the theories of *Static trade-off* and *Pecking Order* in the tested models.

The research Mitton (2008) aimed to observe the rising indebtedness of firms from emerging markets in the 1980 to 2004, using a sample of 11,000 companies from 34 emerging countries. In the survey, they identified the size, profitability, tangibility and the growth opportunity as determinants of capital structure of those companies.

In the study by Huang and Ritter (2009) the capital structure variables were tested to estimate the speed adjustment in the time of financial leverage of companies. When performing the leverage regressions, the authors found that the risk premium on historical values of cost has effects on the long term leverage, influenced by issuance of decisions of securities, even after the control characteristics of the companies that have been identified as the main determinants of capital structure. These decisions investigated over a period of time refer to the theory of *market timing* or window of opportunities.

Bastos and Nakamura (2009) identified the determinants of the capital structure from Latin American companies in the period of 2001 to 2006 in a sample of 388 companies. The survey results showed that the current liquidity, profitability *market to book value* and size were decisive for the choice of dept of those companies studied and theory that has greater influence was the *Pecking Order*.

The survey conducted by Sergieschu and Vaidean (2014) intended to identify the determinants of capital structure of the Romanian companies in the construction sector in the period of 2009 to 2011. The results showed a negative relationship of profitability, tangibility

and liquidity in the dept of analyzed companies. However, the size and growth parameters have a positive relationship. These results show that the theory of *Pecking Order* influence the decision of capital structure of Romanian companies

The study of Costa, Gartner and Graneman (2015), aimed to identify the determinants of capital structure of Brazilian companies in the transport sector, considering the theories of *Pecking Order* and Static trade-off, in the period of 2000 to 2011. The survey had as a sample 14 companies, which resulted as determinants of capital structure profitability variables, the financial problems of cost and size of the company and it was noted in the Brazilian companies that the theory of *Pecking Order* influences the choice of the capital structure in Brazil. Given the studies about capital structure, the next caption wins emphasis on literature relating to the theory of *market timing* with studies in the capital structure of the area.

2.2 *Market Timing*

The literature component that has the related focus with external funding decisions, states that companies are more likely to issue shares when market values are high, related to the book value passed and market and repurchase when their market values are down (BAKER; WURGLER, 2002).

Some evidences show that companies can issue shares when they are high and buy their shares back when they realize its devaluation. The decisions of the capital structure based on *market timing* were seen in several ways. Ritter (1991) observed the long-term performance of IPO companies and their evidences show that the analyzed period, from 1975 to 1984, there were windows of opportunity, under which the companies went public when they realized the overvaluation of the shares, but which nevertheless eventually led to the poor performance of issued shares.

Given the findings presented on the issue of shares opportunities window, Graham and Harvey (2001) conducted a field study analyzing the relationship between theory and practice of corporate finance. Thus, they applied a questionnaire to 392 financial leaders (CFOs) who worked with the costs, budgets and capital structure of the companies. The evidences signaled by the study showed strong concern of financial managers with the financial slack, the issuance of debt and the appreciation of the share price.

Baker and Wurgler (2002) analyzed the effect of *market timing* on the capital structure and its effect is short or long term. The highlighted results found that companies with low leverage are the same seeking capital, when their market valuations are high and when they have high financial leverage for seeking capital, as well as their evaluations in the market are low. Thus, they concluded that the influence of past assessments of market in the capital structure is economically significant.

Elliot, Kant and Warr (2008) investigated the *market timing* and the choice of debt, using a valuation model based on an income that allowed separate deviations values *(mispricing)* of growth options and adverse selection considering the variable in time thus avoiding the multiple interpretations in relation of *market to book* (growth).They used a sample of 9,172 securities issues and found that companies that have overvalued stocks are significantly more likely to issue shares. The findings indicate that the *mispricing* plays an important role in the safe choice decision.

In the study of Brendea (2012), it was the impact of *market timing* the capital structure of Romanian companies. The descriptive analysis of *market timing* behavior in companies listed on the Romanian market, in the period of 2000 to 2011, showed a positive correlation between the price-earnings ratio of the Romanian capital market and the number

of listed companies that were marked with the capital increase. In addition, using a panel data model it was observed that the effects of *market timing* on capital structure of the companies analyzed, showed to be persistent throughout the checked period. The authors concluded that the tendency of companies to raise capital when market values are high is not constant due to the influence of market conditions.

Arosa, Richie and Schuhmann (2014) investigated the impact of culture on *market timing* and the choice of capital structure, analyzing countries with developed and emerging economy. The results showed that, compared to market leverage, companies have been involved in *market timing* because it reduced their leverage ratios when stock prices increased. They also found results that companies located in countries with high uncertainty avoidance, have lower market leverage ratios and that culture serves to reduce the impact of *market timing*. These results were consistent for developed and mixed markets, as well as for emerging ones.

In this sense, it is denoted in the literature that there is no consensus on the effects that *market timing* can generate in the company's capital structure. However, the next caption presents the hypotheses developed to be tested by this study.

2.3 Development of hypotheses

As noted above, it appears that the empirical evidences in the literature on capital structure are conflicting, as the effects of the profitability, tangibility, growth and size of the capital structure of firms. According to the results found in studies by Rajan and Zingales (1995), Cassar and Holmes (2003), Mitton (2008), Bastos and Nakamura (2009), Sergieschu and Vaidean (2014), Costa, Gartner and Graneman (2015) such conflicts are observed in *Static* theory *Static trade-off,* in which there is the existence of a positive relationship between the factors determining the debt and capital structure being contradictory when taken into consideration the aspects founded by the *Pecking* theory Order where relationship is negative.

The study of Rajan and Zingales (1995) noted the profitability as a determinant factor of corporate capital structure of the G-7 countries and found a negative relationship, as well as a research by Cassar and Holmes (2003), which analyzed small and medium-sized businesses in Australia, and the study of Bastos and Nakamura (2009) observed this relationship in public Brazilian companies. Thus, as the evidences raised by these studies, there was a significant influence of theory *pecking Order* on which it was established the following hypothesis:

H_1: Profitability influence negatively on the capital structure of Latin America.

According to the theory of *Static trade-off* companies that have high levels of tangible assets have better conditions to provide guarantees for payment of their debts. Once companies that have defaults with, the assets will be seized, and yet the company may be in a financial position that can avoid bankruptcy. Thus, companies with high levels of tangible assets are less likely to default and take relatively more debt (RAJAN; Zingales, 1995).

But, the theory of *Pecking Order* points out that companies with high leverage, are less likely to issue debt (Myers, 1984).Thus, the expected relationship between tangibility and the level of debt would be negative, as for Brazilian companies, as Bastos and Nakamura (2009) the same relationship was found. Based on these findings available in the literature, it was determined the following hypothesis search:

H_2: The tangibility influence negatively on the capital structure of companies in Latin America.

Regarding the *market* variable *to book* the results found by Alti and Suleiman (2012) it shows that *market timing* behavior only happens when high stock returns are accompanied by investor demand and suggest that the reception of the market plays a key role in motivating companies to seek capital funding when there are high stock returns. According to Brendea (2012), the *market timing* theory predicts a significant ratio of the variable *market to book* on the capital structure as a high market rate indicates overvaluation of the stock price and creates an incentive for issuing new shares. Thus, we expect a negative relationship between *market to book* and indebtedness of firms. Thus, it established the hypothesis:

H_3: The market to book influences negatively on the capital structure of companies in Latin America.

As for the size of the firm, the results found in the literature have to be different, and in the feature of *Static trade-off* theory there is a positive relationship in size compared with the debt of the company, while the theory of *Pecking Order,* this relationship is negative (RAJAN; Zingales, 1995; Bastos and Nakamura, 2009). Thus, taking into consideration the evidence raised by previous studies, such as Costa, Gartner and Granemann (2015) under which the results showed a negative relationship between the size and the company's debt for Brazilian companies, it was elaborated the following hypothesis:

H_4: The negative size of the influence in the capital structure of companies in Latin America.

Another factor considered relatively important to compose the econometric model analysis of the data, when searching many countries, as in this case, the countries of Latin America, studies infer the importance of including a control variable related to Gross Domestic Product (GDP) because it focuses on the control of economic development of each country analyzed (RAMIREZ; KWOK, 2009; AROSA; RICHIE; Schuhmann, 2014).

In this sense, La Porta et al. (1997) emphasized that GDP growth influences the values of the market rates. Corroborating, Jong, Kabir and Nguyen (2008) it is pointed out that the GDP also concentrates an influence on the capital structure of companies, because it points out that in countries in which provides a legally and economically stable environment, companies tent to report lower levels of debt, signaling to the theory of *Pecking Order* as mentioned by Bastos, Nakamura and Basso (2009) that companies first prefer the use of their internal resources.

Still et al. (2009) points out that the GDP has an influence on the level of indebtedness of companies in Latin America, so that the authors emphasize that the country's economic growth causes an increase in available internal funds to finance and investment companies, a fact that contributes to minimizing negative effects of the sub market valuation.

Thus, the study of Earth (2007) points out that companies seek to develop low level of debt strategies during the business expansion process, ie, when the economy is thriving companies are using internal sources of capital (Myers, 1984). However, it is observed that when there is a downturn in the economy, companies are forced to seek external sources (Myers, 1984). Thus, considering this evidence presented above, it was established the following hypothesis:

H_5: The GDP of the country influences negatively in the capital structure of companies in Latin America.

Considering the assumptions made to be tested for the study, following presents the methodological procedures used to address the issue of research in question.

3. METHODOLOCIG PROCEDURES

This study was characterized as descriptive, documental and quantitative, observing from 2006 data to 2014. The research population were all publicly traded companies listed on the BM & FBovespa Stock Exchange in Brazil, Buenos Aires Stock Exchange in Argentina, Santiago Stock Exchange in Chile, Mexican Stock Exchange in Mexico and Lima Stock Exchange in Peru. For the sample it was considered to be all companies of all sectors except financial firms and insurance. In addition, companies have been excluded that did not contain all necessary information for the period analyzed in this study. Thus, the survey sample totaled 432 Latin American companies, so that the sample by country is presented in Table 1.

Table 1- Sample Search

Country	Sample
Brazil	159
Argentina	47
Chile	89
Mexico	82
Peru	55
Total	**432**

Source: research data

For verification of the capital structure of listed companies in the sample as shown in Table 1, the data was collected in *Thomson*® database, according to the following variables analyzed in the study, the Total Debt (END_TOT) Profitability (PROF) the tangibility (TANG), the *market to book* (MD) and Size (SIZE), established in accordance with the related studies the determinants of capital structure, according to the emphasis set out in Table 2.

Table 2 - Variables used in the search.

Variables		Description	Proxies	Source
dependent variable				
Structure	Total indebtedness (END_TOT)	Relationship between the total value of corporate debt and its total assets.	$End\_Tot = \frac{\text{PC} + \text{PñC}}{\text{Ativo Total}}$	Titman and Wessels (1988); Rajan and Zingales (1995); Bastos and Nakamura (2009).
Independent variables				
Determinant factors	Profitability (PROF)	Measured by the ratio of earnings before taxes, interest and depreciation (EBITDA) and the value of total assets.	$RENT = \frac{\text{Profitability EBTIDA}}{\text{total assets)}}$	Rajan and Zingales (1995); Costa, Gartner and Granaman(2015).
	Tangibility (TANG)	Ratio of assets classified as Assets group and the value of total assets.	$TANG = \frac{\text{Imob}}{\text{total assets}}$	Rajan and Zingales (1995); Bastos and Nakamura (2009)
	M/B (M/B)	Reviewed by the ratio of *market to book* and the*book value*	$MB = \frac{\text{Market to Book}}{\text{Book Value}}$	Breandea (2012); Lima, Lima Junior and Neves (2012).
	Size (SIZE)	Reviewed by natural logarithm of total revenue.	Ln (total assets)	Rajan and Zingales (1995); Serghiescu, and Vaidean L. (2014).

	Gross Domestic Product (GDP)	Reviewed by natural logarithm of GDP value	Ln (GDP)	Terra (2007).

Fonte Source: research data:

After presenting the research variables shown in Table 2, it was formulated a regression equation for the panel data analysis, which corroborates previous studies that used these variables to determine the factors of the capital structure of companies and the effect of *market timing*. The equation presented as dependent variable the total indebtedness of companies (END_TOT) and as independent variables was observed profitability (PROF), tangibility (TANG), *M / B* (M / B) and size (TAM).

$$END\_TOT_{it} = \varphi_0 + \varphi_1 RENT_{it} + \varphi_2 TANGI_{it} + \varphi_3 M/B_{it} + \varphi_4 TAMA_{it} + \varepsilon_{it}$$

After established the variables and model formulation to identify the determinants of capital structure of such firms, for data analysis, it was applied the statistical technique d and panel data analysis using *STATA* ® software in version 12.

4. ANALYSIS OF RESULTS

In order to verify the effect of *market timing* on Latin American firms ' capital structure, a descriptive analysis was performed of the variables that make up the sample as shown in Table 3.

Table 3 - Descriptive analysis of the variables.

Country	**Argentina**		**Brazil**		**Chile**		**Mexico**		**Peru**	
Variables	**Average**	**DP**	**Average**	**DP**	**Average**	**DP**	**Average**	**DP**	**Average**	**DP**
END_TOT	1.84	0.19	2.19	0.28	2.64	0.97	1.92	0.1	2.03	0.19
PROF	1.05	0.1	0.9	0.11	0.67	0.35	0.83	0.12	0.81	0.08
TANG	0.89	0.07	0.68	0.1	0.09	0.97	0.95	0.08	0.84	0.07
M/B	0.03	0.13	0.11	0.09	-0.04	0.08	0.03	0.07	-1.29	1.36
TAM	5.08	0.09	6.77	0.05	6.28	0.06	6.91	0.06	5.35	0.08
GDP	-42.09	8.42	-51.96	10.63	-64.63	45.38	-31.12	11.14	-10.56	3.99

Source: Research data.

Table 3 can be seen that the country with the highest level of debt is Chile and the country with the lowest level of debt was Argentina. It was observed that the average debt levels is in line with previous studies as Bastos and Nakamura (2009) who observed the level of debt in Brazil, Chile and Mexico, as well as the study of Brendea (2012) which held its study with companies in Romania, finding these debt levels in countries considered with developing economy and called emerging.

In this sense, we sought to identify the factors that determine the choice of these companies from 2006 capital structure to 2014. Thus, first there was the variable normality test and these variables showed a normal distribution, which led the use of the analysis technique chosen for the study. With this, the assumptions being used to define what would be the method used, namely the pooling technique, random effects or fixed effects.

Initially, the Chow test was used to identify equality (pooling) or difference (fixed effects) for all croos-sections. Then the Breusch- Pagan LM test was used to verify the existence of individual differences of the variables as to their waste, or whether it would be

equal (pooling) or different (random effects) of zero. Finally, the Hausman test was conducted in order to observe the comparison between fixed effects model with random effects. The results are shown in Table 4.

Thus, we observed that the models indicated by the tests were the most suitable to explain the relationship between the variables chosen to identify the determinants of capital structure of the companies of the countries of Latin America. Table 4 shows the results of the panel data regression.

Table 4 - Results from the regression model.

Country	PROF		TANG		M/B		TAM		GDP		R²	N° obs.
	Coef	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.		
Argentina	-0,52	0,00	-1,80	0,00	-0,06	0,00	-0,22	0,20	0,01	0,00	0,43	423
Brazil	-0,95	0,00	-1,72	0,00	0,12	0,03	-0,83	0,02	-0,01	0,00	0,62	1431
Chile	0,07	0,00	-0,94	0,00	-0,05	0,40	0,34	0,20	-0,01	0,00	0,75	801
Mexico	0,38	0,00	0,17	0,00	0,03	0,57	-0,04	0,86	-0,01	0,00	0,18	738
Peru	-0,54	0,00	-2,21	0,00	-0,08	0,03	0,85	0,00	0,05	0,00	0,63	495

Application of the conditions testing for the chosen model

Countries	Regres. Ind.	LM B. Pagan	Chow	Hausman
Argentina	FIXO	0.000	0.000	0.000
Brazil	FIXO	0.000	0.000	0.000
Chile	FIXO	0.000	0.000	0.000
México	FIXO	0.000	0.000	0.000
Peru	FIXO	0.000	0.000	0.000

* Significance at 1%.
** Significance level of 5%.
Source: research data.

As the conditions found in Table 4, the Chow test demonstrated rejection of the null hypothesis that the intercept is equal to every cross-section it was thus verified that the fixed method should be used for sample companies belonging to Latin American countries. Regarding LM test Breush-Pagan, demonstrated that the acceptance of the hypothesis that the variance of residuals reflecting individual differences is equal to zero and it was applied to indicated Hausman fixed effects observed for the five groups.

The results of the regressions presented in Table 4 show that the coefficient of determination (R ²) had significant explanatory power for all countries, and Chile to present the greatest explanatory power of 75% and Mexico had the lowest explanatory power of only 18%. In addition, variables with significant relevance to the country of Argentina were profitability, tangibility, *market to book* and GDP, as well as in Brazil and Peru, and these two countries were significant for the size variable. In Chile and Mexico, the variables were presented as determining factors were profitability, tangibility and GDP.

According to Freund & Wilson (2006), multicollinearity test variance is observed by the influence factor test (FIV), which does not incur collinearity issues of data it should display contents between 1.0 and 10, 0, so the model applied to the variables of the companies of Latin America all these showed values between 1.0 and 5.0 showing no collinearity problems of regressions.

4.1 Discussion of results

Based on the results shown by the regressions presented in Table 4, there is a certain equity in the influences indicated by the coefficients found for the companies in Latin

American countries, converging with previous studies that analyzed the determinants of capital structure and the *market timing* in developed countries.

In this sense, as regards the hypothesis H_1 which provided a negative significant influence profitability in the capital structure of companies in Latin America, it indicates that in the context of Argentine companies that hypothesis was accepted, so that showed a negative coefficient and significant at 1%. This result implies that the Argentine companies with higher profitability tend to have lower overall debt ratios. The same result was shown to Brazil and Peru, signaling the acceptance of the hypothesis H_1, also with significant coefficients at the 1% level.

However countries like Chile and Mexico, showed different realities among the other countries, with a view that showed positive coefficients and significant at 1%, making the hypothesis H_1 with respect to these countries were rejected. Thus, it can be concluded that in Chile and Mexico businesses that have higher profitability are more indebted and this may be signaling some concern for shareholders and potential investors of these companies.

These results regarding the profitability of Latin American companies corroborate parts with the studies of Rajan and Zingales (1995), of Cassar and Holmes (2003) and Bastos and Nakamura (2009) as referring to the results shown by Argentina, Brazil and Peru, so it is contradictory in the Chilean and Mexican context.

As for the H hypothesis $_2$, which included a negative significant influence of tangibility in the capital structure of companies in Latin America, it was observed that hypothesis was accepted in the context of Argentine companies, Brazilian, Chilean and Peruvian, under which was evidenced negative coefficients and significant at the 1% level for these countries. These findings indicate that companies with higher volume of tangible assets tend to have lower levels of debt, and have better attractiveness to shareholders and investors, considering that companies have some ability to repay their debt with internal resources. Thus, for Argentina, Brazil, Chile and Peru found the supremacy of theory *Pecking Order* as established by (Myers, 1984) and confirms the results shown by Bastos and Nakamura (2009) who found that same influence to Brazilian companies.

However, the results leave on alert companies of Mexico, which had a positive influence of tangibility in the capital structure, noting that Mexican companies resort to obtaining funds from third parties (external) because they cannot provide assurance through its internal resources. In this sense, the hypothesis H_2 is rejected in the Mexican context, corroborating the statement of Rajan and Zingales (1995), reporting through the theory *Static trade-off* that the tangible assets serve as collateral for the payment of their debts.

With regard to the hypothesis H_3 which included a negative significant influence of *market to book* in the capital structure of companies in Latin America, evidenced by the results of research that the hypothesis was accepted in the context of companies from Argentina and Peru, corroborating the studies of Alti and Suleiman (2012) and Brendea (2012), emphasizing that in these countries the companies present a behavior influenced by the theory of *market timing* , given that the results indicate that companies are motivated to issue shares in the stock market, in view of the attractiveness of high stock returns and the investor demand, so the market incentive back to the issue of new shares by the company.

However, even in relation to the hypothesis H_3 establishing a significant negative influence of *market to book* in the capital structure of Latin American companies, it is observed that in Brazil's case was rejected. This result indicates that Brazilian companies are not motivated to issue new shares in the stock market, which may be an indication that there

is a low attractiveness relative to returns of sold shares, making the companies do not seek to raise funds for through this practice of issuance and repurchase of shares.

In Chile and Mexico, the results on the hypothesis H_3 showed negative and positive coefficients, respectively, but both were not significant, under which the results cannot be fairly conclusive about the influence of variable *market to book* (M / B) that is the theory of *market timing* on capital structure . Thus, it is inferred the need for more studies independently observing how the effects of this variable (M / B) in the capital structure of the Chilean and Mexican companies. In this sense, the non - significant results for these companies corroborates the study Brendea (2012) which showed in its results that *market timing* does not describe the financing behavior of companies from Romania, as this does not describe the financing behavior in business open capital of Chile and Mexico.

The hypothesis H_4 establishes the existence of significant influence negatively the size of the capital structure of companies in Latin America. Based on the results shown by the econometric model, it can be concluded that Latin American companies have strong disagreement over this observed effect. Whereas only for Brazilian companies that hypothesis was accepted, indicating that the greater the size of the smallest company the level of indebtedness of companies. Thus, this result corroborates the theory *Pecking Order* as highlighted by the study Bastos and Nakamura (2009), noting that large companies, measures in relation to the size of assets, primarily using the use of its internal resources to fund its operations.

In Peru hypothesis H_4 was rejected, that has shown a positive significant coefficient at 1%. This result implies that the Peruvian companies with larger size have a higher degree of indebtedness, which may signal the large companies based on asset size, realize their investments with external resources from funding. Thus, this result corroborates the theory *Static trade-off* highlighted by the study of Rajan and Zingales (1995), which indicates that companies in Peru have more easily in the market for external resources.

For other countries, Argentina, Chile and Mexico hypothesis H_4 showed no significant factor to explain the influence of firm size in these companies capital structure. Thus, this result corroborates the results shown by Bastos and Nakamura (2009), which investigated the structure of capital in companies in Latin America, noting the companies in Brazil, Mexico and Chile, whose case was not significant as a result evidenced by its study.

In the case of the hypothesis H_5 establishing the negatively significant influence of GDP in the capital structure of companies in Latin America, it showed that this hypothesis was accepted in the context of the Brazilian, Chilean and Mexican companies, so that corroborates the statements esplanades by Jong, Kabir and Nguyen (2008), which points out that the GDP influences the capital structure of companies, so that is connected to the legal environment and economic stability, under which companies tend to report lower levels of debt, demonstrating the influence of the theory of *Pecking Order* in this study, a fact which was also evidenced by Bastos, Nakamura and Basso (2009) that in relation to GDP showed an influence on the level of indebtedness of companies in Latin America, given that economic growth country leads to increased availability of internal resources for companies, such as forms of financing.

Although these findings corroborate the study of Earth (2007) it points out that considering the country's GDP companies can develop strategies for the business expansion process through the use of low level of debt strategies, which according to Myers (1984) companies focus on the use of internal sources of capital

However, even in relation to H hypothesis $_5$, it was observed that the companies of Argentina and Peru countries, GDP positively influences the capital structure of these

companies, so that in this context rejects the hypothesis in these countries. Considering these results, it can infer that companies are forced to seek external resources in a situation where the economy is in recess, increasing the level of indebtedness of companies in these countries.

Thus, Table 5 presents a summary of results for the research hypotheses.

Table 5- The results obtained.

hypotheses	Argentina	Brazil	Chile	Mexico	Peru
H 1 - Profitability has negative significant influence on the capital structure of companies in Latin America.	Accepts	Accepts	Regects	Regects	Accepts
H 2 - The tangibility has negative significant influence on the capital structure of companies in Latin America.	Accepts	Accepts	Aceita	Regects	Accepts
H 3 - The *market to book* has a negative significant influence on the capital structure of companies in Latin America.	Accepts	Regects	n/s	n/s	Accepts
H 4 - The size has a negative significant influence on the capital structure of companies in Latin America.	n/s	Accepts	n/s	n/s	Regects
H 5 - The country's GDP has negative significant influence on the capital structure of companies in Latin America.	Regects	Accepts	Accepts	Accepts	Regects

OBS .: (n / s) indicates that the variable was not significant in any model presented.
Source: Research data.

Based on Table 5, it was observed that Latin American companies have different characteristics between the analyzed countries. However, as regards the profitability findings were relatively equivalent in the countries analyzed, with the exception of Chile and Mexico. The tangibility, it was observed that countries are quite similar in form of management of its tangible assets across the capital structure, with the exception of Mexico. As for the m*arket to book* representing, the behavior of *market timing* in funding was perceived in Argentina, Brazil and Peru. In terms of company size, this was not significant in the capital structure of the Argentine, Chilean and Mexican companies. In relation to GDP it was found that this macroeconomic variable affects the capital structure of companies in Latin America.

5. CONCLUSIONS AND RECOMMENDATIONS

In order to identify the effect of *market timing* on capital Latin American company's structure, there was a descriptive, documentary and quantitative research, observing a sample of 432 companies from 2006 to 2014, through regression analysis panel data.

The results shown by this research demonstrate that profitability, tangibility and GDP are the main factors influencing the capital structure of companies in Latin America. So, the main finding of the research is established in relation to *market timing* be observed through the motivation of the Argentine and Peruvian companies to issue new shares for the stock market, while for Brazilian companies indicate that there are low attractiveness in stock returns, expanding the literature *market timing* in emerging countries in Latin America.

Still, according to the results shown by the survey, it can be concluded that the behavior of the financing of Argentine, Brazilian and Peruvian companies is described by the assumptions of the theory of *Pecking Order* and *market timing*. In Chile and Mexico, the behavior is described by the assumptions of the theory of *Static trade-off*. In this regard, the

present research extends the results shown in previous studies. In order to confirm the influence of *market timing* observed in mixed form in emerging countries, expanding the results obtained in the study of Brendea (2012) and Alti and Suleiman (2012), because they were not found significant results for all countries From Latin America.

Thus, this research contributes to the finance area of literature to analyze the relationship of capital structure and *market timing* in a sample of companies in Latin America. Furthermore, corroborates the results of Chen et al. (2013), in that it confirms that the choice of capital structure may be different in emerging countries and therefore the influence of the *market timing* too.

As limitations, there is a lack of information available regarding the variables used for this research in companies from other countries that make up Latin America. Therefore, as a suggestion for future work is recommended to replicate the work to test the study variables that were not statistically significant, for example in the context of the size observed for companies in Chile and Mexico.

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