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**FACULTAD DE ECONOMÍA Y CIENCIAS EMPRESARIALES**

**TÍTULO: DETERMINANTS OF CAPITAL STRUCTURE OF THE  
ECUADORIAN CORPORATE SECTOR: A PANEL DATA ANALYSIS  
2000-2013**

**TRABAJO DE TITULACIÓN QUE SE PRESENTA COMO REQUISITO  
PREVIO A OPTAR EL GRADO DE**

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**Determinants of capital structure of the Ecuadorian corporate sector: A  
panel data analysis 2000-2013**

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**Resumen**

Este estudio investiga los determinantes específicos, financieros, macroeconómicos y sistémicos de la estructura de capital del sector corporativo del Ecuador, basado en las teorías de estructura de capital. Los datos se recolectaron de la Superintendencia de Compañías de Ecuador y los Indicadores de Gobernanza Mundiales entre los años 2000 al 2013. La variable dependiente fue el apalancamiento, la cual fue medida por el ratio de deuda total. Las variables independientes utilizadas fueron tamaño de la empresa, rentabilidad, oportunidades de crecimiento, tangibilidad, producto interno bruto, control de la corrupción, estado de derecho, calidad regulatoria y tasa de préstamos. Los resultados de los datos del panel muestran que las variables independientes tienen un efecto significativo en el nivel de apalancamiento de las empresas en un uno por ciento, excepto rentabilidad, la cual es significativa en un cinco por ciento. Conjuntamente, el sector corporativo de Ecuador no está determinado por una teoría de la estructura de capital, ya que muestra indicios de los supuestos de la teoría del orden jerárquico y la teoría de la compensación. Se concluyó que las variables macroeconómicas, financieras y sistemáticas son influyentes en la determinación de los niveles de apalancamiento.

**Palabras clave:** estructura de capital, teoría del intercambio, teoría del orden jerárquico, apalancamiento, determinantes.

## **Abstract**

This study investigates the firm specific, financial, macroeconomic and systemic determinants of capital structure of the corporate sector of Ecuador based on the capital structure theories. The data was obtained from the Superintendence of Companies of Ecuador and the Worldwide Governance Indicators from the years 2000 to 2013. The dependent variable was leverage, measured by the total debt ratio. Independent variables used were firm size, profitability, growth opportunities, tangibility, Gross Domestic Product, control of corruption, rule of law, regulatory quality and lending rate. The panel data results shows that the independent variables have a significant effect on the leverage level of firms at one percent, with the exception of profitability, which is significant at five percent. Furthermore, the corporate sector of Ecuador is not defined by one capital structure theory, as it embraces assumptions from the pecking order theory and the trade off theory. Moreover, it was concluded that the macroeconomic, financial and systematic variables are influential in the determination of leverage levels.

**Keywords:** capital structure, trade off theory, pecking order theory, leverage, determinants.

## **Introduction**

Capital structure decisions are decisive for the financial stability of a firm. However, an optimal level of financial leverage has not been defined yet. Capital structure is a widely debated topic where several theories have branched out from the seminal work of Modigliani and Miller regarding capital structure. The theories concerning capital structure assert that firms decide on a capital structure

level relying upon several factors regarding costs and benefits related to debt and equity financing (Titman & Wessels, 1988). Managers who are capable to establish an optimal capital structure are compensated with lower financing costs, therefore, maximizing the firm's revenue. Moreover, if capital structure impacts a firm's performance, it can entail for the firm to develop a competitive advantage (Zeitun & Tian, 2007). Hence, it is key to identify the firm specific and industry factors that affect capital structure decisions (Kumar, Colombage, & Rao, 2015).

Capital structure studies have been performed on different economies, providing empirical evidence that supports the trade-off and the pecking order theory. However, there is a shortage of studies that center in the sources of finance accessible to the corporate sector and the implications for a capital-market or bank-oriented economy (Antoniou, Guney & Paudyal, 2008). During the 1980s, the Ecuadorian Government relaxed on constraints for external financing for the Ecuadorian firms by the introduction of financial reforms that facilitated capital accumulation; however, a study performed by Jaramillo, Schiantarelli and Weiss (1996), exhibited that these reforms did not help to liberalize the financial market to access to credit. Nevertheless, it is important to highlight that since January 2000, Ecuador shifted to a dollarized economy.

A dollarized economy has several advantages, as it is shown by studies by Sachs and Larrain (1999), Salvatore (2001) and Reinhart, Rogoff and Savastano (2014). They highlight that countries choose to adopt dollarization in order to regulate macroeconomic factors, such as inflation, interest rates and halt the depreciation of their currency; therefore, stabilizing the economy. Dollarization allowed Ecuador to stabilize its volatile economy, consequently strengthening its

financial system and reducing the costs of trade with other countries, therefore transforming the financial sector to a more steady one (Berríos, 2006). Marcelin and Mathur (2016) corroborate that the financial system of a country plays an important factor in countries that adopt the dollar: those with a credible and stable system show a growth in credit, while those who do not have a credible and stable system shrink in credit; therefore, affecting capital structure decisions.

The purpose of this research paper is to determine how has the Governmental and financial perception of the country by entrepreneurs of Ecuador impacted the capital structure of the corporate sector. To achieve it, a panel data analysis of the Ecuadorian corporate sector between the years 2000 and 2013 was performed, where size, tangibility, profitability and growth contributed to explain capital structure.

## **Theoretical Framework**

### **Capital Structure Theories**

The Modigliani and Miller Theorem (M and M theorem) was the first capital structure theory, introduced in 1958. The M and M theorem indicates that the value of a firm that operates in a perfect market is not affected by the level of debt and equity held to finance their operations (Modigliani & Miller, 1958). Rather, the value of a firm is determined by its earning power and the risk of its underlying assets; therefore, shareholder value is independent of the financial leverage maintained by the firm (M'ng, Rahman, & Sannacy, 2017). The theory was based on the assumptions of absence of bankruptcy costs, tax shields, transaction costs, information asymmetries and brokerage (Modigliani & Miller, 1958). The M and M Theorem was later revised and corrected by the authors. In

the revision, Modigliani and Miller (1963) incorporated tax benefit in the capital structure and firm value. Accordingly, companies that issue debt financing are shielded in the form of lower tax exposure, considering that the interest they pay is tax deductible whereas firms that decide on equity financing are not eligible for such deduction. Consequently, for many business a capital structure that rely on debt is preferred since lower taxes maximizes firm's value (Kolari & Vélez-Pareja, 2012).

The revision of the M and M theorem influenced the development of new theories that assessed the costs and benefits of debt and equity to establish the optimal capital structure of the firm (Frank & Goyal, 2008). Kraus and Litzenberger (1973) introduced the trade-off theory, suggesting that the optimal capital structure is built upon the costs and benefits brought by debt. Hence, firms should aim their level of debt and equity to one that maximizes the benefits of paying taxes and lessens the likelihood of bankruptcy (Kraus & Litzenberger, 1973). According to the trade-off theory, debt ratios vary for each business as “companies with safe, tangible assets and plenty of taxable income ought to have high target ratios”, whilst companies with uncertain, intangible assets rely on equity financing (Berzkalne & Zelgalve, 2014).

Myers and Majluf (1984) suggested the pecking order theory, based on a study published by Donaldson in 1961. He examined the financing sequence of large firms and found these favored internal financing as they became more profitable, since they would be capable to have internal funds to pay for their investments. Furthermore, Donaldson (1961) maintained that when internal financing is insufficient firms should seek bank borrowings or corporate bonds

rather than issuing equity. This study influenced Myers and Majluf (1984) to publish the pecking-order theory. They argued that a pecking order in financial decisions exists as a result of information asymmetries between the insiders and outsiders of the company (Myers & Majluf, 1984). Therefore, it establishes a hierarchical order of financing sources preferred by firms, starting by retained earnings, debt and ultimately, equity (Mateev, Poutziouris, & Ivanov, 2013). Moreover, as a consequence of the information asymmetry found in the market, firms will not lean towards issuing new shares for potential investors, as equity may be mispriced. New investors disregard the value of the assets and opportunities and expect higher returns, shortening the income of the current shareholders (Serghiescu & Văidean, 2014).

Baker and Wurgler (2002) introduced the market timing theory. Their theory suggests that a company's capital structure is influenced by the timing they issue their equity. According to their theory, equity is issued when the stock price is overvalued and buy them back when their price is undervalued; however, debt is issue when stock prices are undervalued (Baker & Wurgler, 2002). Therefore, fluctuations in stock prices influence capital structure decisions. This connotes that firms are indifferent to issuing debt or equity; rather, they finance their operations by the form that has more value on the market.

### **Country Characteristics Effect on Capital Structure**

Baltacı and Ayaydın (2014) indicate that country characteristics have an influence on the capital structure decisions of the firm. For instance, differences in the quality of institutions among countries have an effect on the capital structure decisions regarding bankruptcy, agency and information asymmetry costs; as

capital structure is not only influenced on the characteristics of the firm but also the environment and culture it operates in (Baltacı & Ayaydın, 2014). Furthermore, institutional and macroeconomic variables have a significant association to the external environment. These variables have an effect on funding decisions, affecting in some cases the capital structure maintained by firms (Bernardo, Albanez, & Securato, 2018). Moreover, leverage decisions are influenced by business cycles, as changes in information asymmetry influence the preference of firms to leverage. For instance, if the unfavorable selection costs, in addition to the information asymmetry, are negatively related to the business cycle, the adverse macroeconomic environment will influence firms to issue less information sensitive securities<sup>1</sup> (Baltacı & Ayaydın, 2014).

Chung and Wang (2014) hold that firms are expected to reduce their level of leverage when institutional investors increase their shares from one year to another, especially in times of uncertainty and economic contraction. The authors argue institutional investors have a preference towards certain firm characteristics, such as large and safe stocks, therefore, affecting investment decisions. For instance, in times of economic uncertainty, institutional ownership increases and debt levels reduce. Accordingly, this decision leads to the reduction of agency costs, given institutional investors hold enough power to influence corporate decisions and coerce managers to avoid taking risky decisions and counter underinvestment issues (Chung & Wang, 2014).

A study by Abdulla (2016) shows how the external environment influences the capital structure decisions of firms in the United Arab Emirates

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<sup>1</sup> Tradable financial assets. These include debt securities, equity securities and derivatives.



(UAE). According to his study, the tax-free environment, the absence of a developed bond market where companies can trade the bonds they issue, restrictions of debt financing in their financial system and the large participation and ownership by the government, play an influential part on capital structure decisions maintained by the UAE firms. Abdulla (2016) indicates that the unavailability of an adequate bond market signals that firms maintain a low debt level, since firms do not have a dynamic market to buy and sell the bonds issued.

Furthermore, an extensive government ownership and participation advocates for a high debt ratio in order to avoid loss of ownership and control. Mentioned debt ratio increases through the issue of debt with commercial banks, given that there is not a developed market to issue corporate bonds. Following Appelbaum (1993) and Abdulla (2016), firms issue more debt when there is government intervention. Appelbaum (1993) holds “the reason that debt financing is preferred is that it allows the firm to capture the full value of the government’s potential bailout”. Furthermore, in terms of subsidies, firms issue more debt financing in order to increase their investment and benefit from this form of government intervention; hence, capital structure is in fact influenced by government intervention. In line, Shao, Hernández and Liu (2015) sustain that government intervention in emerging countries have a direct effect on financing decisions of firms, given that they operate in an environment in which financial markets are non-transparent, and credit and other forms of external financing are more complicated to obtain. For instance, the authors analyzed one form of government intervention applied in China, in which the government identify economic development areas (EDAs) in the country where specific policies are

implemented to favor the economy. Their results show that even though these policies were successful in boosting the economy, the disparities in the macroeconomic environment of each EDA led to firms to take different leverage decisions. According to the authors, firms located outside EDAs were not subjected to economic policies to boost their economy, hence, they maintained high leverage levels; on the other hand, firms located in EDAs, where the economic condition improved, held a lower long term debt and leverage level (Shao et al., 2015).

### **Advantages of a Dollarized Economy**

Dollarization is the phenomenon in which a country does not issue its national currency; rather, it adopts a foreign stable currency such as the American dollar in order to counter economic instability (Reinhart et al., 2014). Though dollarization complicates the management of the monetary policy (Demirel, Alpaslan, & Bozdag, 2014), Edwards and Magendzo (2003) stipulate that dollarization strengthens public finances and the credibility of the macroeconomic policy of the country, since the government is now unable to mismanage the monetary and macroeconomic policies. Mengesha and Holmes (2013) and Lange and Sauer (2005) argue that a country decides to adopt dollarization as a mean to adjust unstable political and economic factors, such as the exchange rate volatility, inflation, growth, and lower country risk; therefore, stabilizing the macroeconomic environment.

Full dollarization contributes to reduce the exchange rate volatility, countering undesirable effects like the reduction of investment and growth (Mengesha & Holmes, 2013). Akofio-Sowah (2009) indicates that dollarized

Latin American countries present a significant lower exchange pass-through coefficient that is seen as transitory. This connotes that international prices are not significantly responsive to exchange rate changes; hence, as a response to exchange rate variations firms are willing to adjust their profit margins (Akofio-Sowah, 2009). Davis and Pomerantz (2009) present similar results in their study of the monetary union in the European Union (EU). Accordingly, the European countries that presented volatile exchange rates benefited from the European Monetary Union (EMU) as they favored concerning fixed investment and economic growth, for instance Spain, Finland and Italy.

The adoption of dollarization helps reduce inflation and increases the credibility of the monetary policy (Barro & Gordon, 1983; Arellano & Heathcote, 2010). Kesriyeli, Özmen, and Yiğit (2011) argue that this credibility is the outcome of the adoption of a monetary policy using a strong currency. In accordance, Yinusa (2008) highlights that the countries that adopt the United States (US) currency for transaction and store of value purposes reduce their inflation levels as they mimic the inflation tendency of the US. Kim and Wu (1988) indicate that higher inflation rates reduce information asymmetry, incentivizing firms to issue more debt it becomes more appealing as the real cost of debt diminishes. Furthermore, as dollarization reduces inflationary uncertainty, firms' business risk is also reduced. In line to Hatzinikolaou, Katsimbris and Noulas (2002), with a stable inflation, the volatility of the firm's sales and prices is also reduced; hence, business risk decreases.

Economic growth and development is a repercussion of dollarization, as the latter entails more stable exchange rates and lowers transaction costs that

encourages investment (Mpofu, 2015). According to Edwards and Magendzo (2003), economic growth after dollarization surges from two methods: by lowering interest rates, making investment more attractive, and by eliminating the exchange rate volatility, therefore, supporting international trade. Subsequently, Dornbusch (2001) argues that “a monetary regime that delivers and maintains low inflation, other things being equal, will help growth”.

### **Dollarization effects on Ecuadorian economic stability.**

During the decade of the 1990s, Ecuador faced economic and political instability. According to Berríos (2006) and Quispe-Agnoli and Whisler (2006), in ten years Ecuador had encounter enormous economic and political turmoil. It had six presidents, high interest rates, the former local currency had a volatile exchange rate, as well as social protests and labor strikes. These factors consequently made the macroeconomic environment and private sector vulnerable, driving Ecuador to face large fiscal deficits and a growing external debt (Quispe-Agnoli & Whisler, 2006). As a consequence, the US dollar was adopted in January 2000, supplanting the national currency, which was fixed at 25,000 Sucres per US dollar (Anderson, 2016).

### ***Inflation.***

According to Berríos (2006), the Ecuadorian macroeconomic environment has stabilized since the adoption of dollarization. Fiscal health for businesses and the financial system credibility was restored, which encouraged inflation to decline, gross domestic product (GDP) to grow, and economic equality (Romero, Hodgson, & Gómez, 2018). In line to Arellano and Heathcote (2010), inflation in Ecuador has been reduced to single digits to a rate of 4.5% during the years 2000

and 2010 (Keeley & Kess, 2013). Furthermore, Marí del Cristo and Gómez (2013) hold that following dollarization, the inflationary levels have become steady. Vásquez et al. (2018) emphasize that the reduction in the inflation rate and its steadiness results from the change in currency, since the exchange rate risk is eliminated.

#### ***Gross domestic product.***

Keeley and Kess (2013) hold that after dollarization, GDP growth between 2004 and 2008 averaged 2.9%, the largest growth recorded during the last ten years. According to World Bank (2018) data, between 2001 and 2014 real GDP has increased 79% and real GDP per capita by 43%, reflecting how dollarization, as well as the prices of oil contributed to economic growth. By adopting the US dollar as the new currency of Ecuador, investments and spending levels rose, as citizens hold a strong confidence and expectations of it (Anderson, 2016).

#### ***Financial reforms.***

As indicated by Unda and Margret (2015), the Ecuadorian government implemented a series of reforms through the years 2007 and 2012. These were implemented with the purpose of reducing interest rates and the transaction costs for consumers; hence, public interest and consumers were protected. Anderson (2016) holds that dollarization helps alleviate the currency devaluation risk, reducing costs for foreigners regarding credit available and holding a stable exchange rate. As consequence, lender nations infer that the dollarized economy has more stability than a currency that is prone to speculation and negative governmental policies (Berg, Borensztein, & Mauro, 2003).

### **Empirical Evidence of the Determinants of Capital Structure**

Extant research may lean towards trade-off theory whereas others support the assumptions of pecking order theory. These findings are influenced by the political and economic environment the companies operate in. Berzkalne and Zelgalve (2014) performed a study in the Baltic countries to evaluate whether the pecking order theory or the trade-off theory performs better in the before mentioned countries. Their study was performed analyzing 75 companies listed in NASDAQ OMX Baltic between the years 1998 and 2011 using descriptive statistics and a regression analysis. The authors analyzed the level of leverage, where the independent variables dividend payments, capital expenditures, net increase in working capital, current proportion of long-term debt and operating cash flows after interests and taxes were tested. Their findings show that companies in Latvia hold the lowest debt ratio, however the gap of debt ratio between Latvia and others Baltic countries has decreased over time. Their results exhibit that from the thirteen periods they analyzed, ten were significant. Nonetheless, the R squares range from 0.06 to 0.99, and only during the years 2000, 2002 and 2006, the R square is greater than 0.80 and significant. Hence, there was not enough statistical evidence that supported these countries followed the pecking order theory. Authors' findings align with other studies with unclear results regarding capital structure theories.

Serrasqueiro and Caetano (2015) carried out a study of capital structure study in Portugal. They aimed to analyze whether the small and medium enterprises (SMEs) of the interior region of Portugal authors studied 53 SMEs between the period of 1998 and 2005, concluding that these firms preferred internal financing to external financing. In general, Serrasqueiro and Caetano

(2015) concluded that the trade-off theory and pecking order theory are not mutually exclusive in the interior region of Portugal. According to their results, these companies support the pecking order theory as their preference to internal financing is corroborated by the negative and statistically significant relationship between the firm's age and debt maintained: the greater the age of the firm, the less need for debt as they are able to retain more profits. In addition, they found that tangible assets do not have an influence on debt, as SMEs choose short term debt for which creditors do not need tangible assets as an assurance. Lastly, their results demonstrated that SMEs adjusted fairly quickly their actual debt ratio towards their optimal debt ratio, supporting the trade off theory.

To assess the market value ratio, Yousefzadeh et al. (2014) studied 97 companies listed in the Tehran Stock Exchange between 2003 and 2011. They reviewed long term debt maintained by companies. Their findings show that exogenous variables like growth, uniqueness<sup>2</sup>, asset structure, profitability, size and industry classification have an influence on capital structure. Their study showed that following the trade-off theory, capital structure had a significant positive relationship with asset structure, size and volatility. While finding a significant negative relationship with the variables growth, uniqueness, profitability, industry and stock returns. However, the positive relationship of volatility and the negative relationship of stock returns is not significant to their findings. Furthermore, the authors consider earning volatility a sign of bankruptcy risk, hence, it is not taken into consideration when granting loans. Additionally,

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<sup>2</sup> Variable measured by the ratios Research and Development (RD) over Sales (RD/SALES) and Selling Expenses (SE) over Sales (SE/SALES). According to Yousefzadeh et al. (2014), firms that sell more unique products are expected to spend more on RD and advertising, therefore increasing mentioned ratios.

their results showed that stock returns is not a significant variable in capital structure decisions, therefore, it contradicts the basis of the market timing theory.

M'ng et al. (2017) performed a study of publicly listed companies between the years 2004 and 2013. Their findings show a significant negative relation between profitability and capital structure (leverage) for Malaysia and Singapore, yet an insignificant relation for Thailand regarding profitability and capital structure. M'ng et al (2017) found a significant positive relation between firm size and capital structure for Malaysia, Singapore and Thailand. In addition, they found a significant positive relationship between tangibility of assets and capital structure for Malaysia and Singapore, however Thailand had an insignificant relationship. Mainly, their results show that the capital structure of the public listed companies studied support both the trade-off theory and the pecking order theory.

A study performed in Brazil by Forte, Barros and Nakamura (2013) studied over 19,000 Brazilian firms over between the periods 1994 and 2006. Their results show that there is a negative relationship between profitability and leverage, and a positive relationship between asset growth and leverage. This suggests that Brazilian firms follow the pecking order theory, implying that they finance their expansion with debt only after their internal sources of finance have been depleted. Furthermore, their results support the assumptions that large firms have more access to external financing due to the guarantees they are able to provide to the lender; on the other hand, riskier SMEs are less financially leveraged and older SMEs are more traditional in financial decisions (Forte et al., 2013).



Mateev et al. (2013) performed an investigation in 3,175 SMEs in Central and Eastern Europe applying a panel data analysis. In their findings, they observed that the leverage maintained by firms is influenced by their capacity of internal funding, as well as other attributes like liquidity, sales growth, size and asset structure; therefore, explaining that the SMEs in Central and Eastern Europe follow the assumptions of the pecking order theory (Mateev et al., 2013). Furthermore, their results proved the maturity matching principle: firms with more tangibility rely more on debt, supporting the foundations of the trade-off theory. The capital structure of these firms is shaped by size, as larger firms present higher leverage ratios implying that they are more diverse and able to maintain a greater bargaining power towards creditors (Mateev et al., 2013). Lastly, SMEs heavily rely on internal financing; however, when external financing is required, short term debt is preferred by micro and small firms due to the difficulty to obtain long term debt, whereas medium sized firms opt for long term debt, as the access to capital markets in Europe is somehow limited to larger firms.

### **Determinants of Capital Structure**

#### **Firm specific determinants.**

##### *Size.*

The trade-off theory anticipates that there is a positive relationship between firm size and leverage. Larger firms are more diversified in financing sources, which diminishes their risk of failure in the market (Köksal & Orman, 2014). This is also supported by Forte et al. (2013), who indicated that the transaction costs associated with external financing are dependent on size.

Following Forte et al. (2013), smaller firms are associated with higher transaction costs which induce firms to maintain a lower leverage; contrary, large firms tend to maintain higher leverage levels, as their transaction costs are lower and consequently are capable of issuing more debt. Hence, positive relation between size and leverage is expected: smaller firms hold lower leverage levels, and larger firms maintain a higher leverage levels.

Contradictory to the trade-off theory, the pecking order theory has an inconclusive relationship between size and leverage. Larger firms encounter less information asymmetry, motivating them to issue more debt (Myers & Majluf, 1984). However, there can also exist a negative relationship between firm size and leverage, as they can issue more equity than smaller firms (Köksal & Orman, 2014).

### ***Tangibility.***

The trade-off theory predicts that firms with more tangible and safe assets find less costly to liquidate these assets when they face bankruptcy, since they endure a smaller loss of value during bankruptcy (Baltacı & Ayaydın, 2014). Therefore, the trade-off theory assumes a positive relationship between tangibility and leverage: companies with large tangibility are credited more loans due to the securities they provide the lender; hence, lenders grant them loans and the debt ratio maintained by them expands (Yousefzadeh et al., 2014). The pecking order theory contradicts the previous as it predicts a negative relationship between tangibility and leverage. According to this theory, less information asymmetry is associated to the fixed assets, hence it decreases the costs of issuing equity (Köksal & Orman, 2014).

### ***Profitability.***

The trade-off theory predicts that capital market imperfections influence profitable firms in terms of financial decisions, considering they have “more debt-serving capacity and more taxable income to shield” (Baltacı & Ayaydın, 2014). Fama and French (2002) indicate that profitable firms opt for debt, as they benefit from it in the form of tax shield benefits and the reduction of financial distress costs; therefore, implying a positive relationship between leverage and profitability. Ali (2011) stipulates that this relationship is the result of profitable firms having less probability of bankruptcy, hence being granted lower interest rates as a consequence of it; therefore, they finance their operations through debt.

On the other hand, there is a negative relation between leverage and profitability in accordance to the pecking order theory. Myers and Majluf (1984) indicate that firms that are more profitable use internal financing in the form of retained earnings to fund their operations. This is supported by the assumption that these firms issue less debt because they are able to finance from internal sources.

### ***Growth.***

The pecking order theory predicts that there is a positive relationship between growth and leverage. According to Myers and Majluf (1984), firms that are in the process of expansion rely on external financing once they have consumed their internal sources of finance. Following the assumptions of the pecking-order theory, firms would issue less equity and more debt as a result of the information asymmetry of the market (Ali, 2011). Therefore, a positive relationship between growth and leverage is maintained.

### **Financial determinants.**

#### ***Interest rate.***

Interest rate is defined as the cost of debt. Following Yinusa, Alimi and Ilo (2016), interest rates are high in most developing economies, even though they have liberalized their financial markets. Consequently, the relationship between interest rate and leverage in developing economies is anticipated to be negative, therefore making debt financing unattractive to firms.

#### **Systematic determinants.**

##### ***Rule of law.***

Following the World Bank Governance Indicators (2017), rule of law is defined as a measurement of the perception to which agents abide by the rules of society. Rule of law is an annual indicator that mainly focuses on the quality of law enforcement, property rights and the likelihood of crime and violence (World Bank, 2017). Its score ranges from -2.5 to 2.5, where a higher score means the country has a strong rule of law.

##### ***Control of corruption.***

The World Bank Governance Indicators (2017) define control of corruption as the measurement of “the extent to which public power is misused for private gain”. In accordance to Shleifer and Vishny (1993), investors in countries with high levels of corruption face the risk of not getting the capital they invested back; hence, banks are resistant to provide credit. Baxamusa and Jalal (2014) indicate in their study that as corruption levels of a country decline, so does its cost of capital. Furthermore, Wei and Kong (2017) studied the influence of corruption and financial development on capital structure; their findings show

that in areas with high corruption levels, financial development does not increase leverage levels. However, Yinusa et al. (2016) hold that firms prefer debt financing in countries with high corruption levels, as a method to reduce managers' corrupt practices.

### **Country specific determinants**

#### ***Gross domestic product growth rate.***

Chipeta and Mbululu (2013) analyzed the economic output of a country measured by GDP and the effect it has on capital structure. An increase in GDP ceteris paribus indicates that firms will have greater growth opportunities, therefore, they require more funds (Baltacı, & Ayaydın, 2014). Regarding the effect of GDP on capital structure decisions, Ngugi (2008) stipulates that the real GDP growth impacts leverage: firms that would like expand their revenue, require more funds, leading to more economic growth.

In accordance to the pecking order theory, firms that have more growth opportunities, reflected by the GDP growth, will lean towards external financing such as bank loans and the issue of equities (Chakraborty, 2010). Chipeta and Mbululu (2013) hold that this need for external financing surges by the economic growth of the country, where during economic expansion firms are expected to adjust their capital structure in order to grow.

#### ***Inflation.***

The stability of a country is measured by the inflation level maintained by the economy. According to Gungoraydinoglu and Öztekin (2011), high inflationary rates cause instability in firms reducing their level of leverage. The authors maintain the economic uncertainty of inflation raises the bankruptcy costs,

hence, the leverage level is reduced. Strýčková (2015) indicates that according to the trade-off theory, the level of expected inflation and corporate debt is positively related. The author supports the result of his study based on Hochman and Palmon (1985), who argued that the increment of the interest rate by inflation increases tax advantages; hence, debt financing becomes more appealing.

## **Methodology**

### **Design**

This study used panel data analysis to examine the capital structure decisions of the corporate sector of the Ecuadorian companies between the years 2000 and 2013. Furthermore, macroeconomic variables inflation and GDP growth rate were incorporated to examine their impact on the capital structure decisions of firms of the before mentioned sector and draw conclusions about businessmen's perception of the influence of the economic and financial environment of the country and its impact on their leverage decisions.

### **Sample size**

The data for the study was obtained from the Superintendence of Companies of Ecuador and the World Bank. Following Arellano and Bond (1991), to obtain a robust analysis it is necessary to examine minimum five years of figures; therefore, this study analyzed the capital structure decisions of firms between the years 2000 and 2013. Firm specific data was acquired from the Superintendence of Companies, where the ratios obtained from balance sheets and income statements from 54,958 firms that operate in the corporate sector of the country were studied. The data for the macroeconomic variables was acquired from the database of the World Bank.

## Measurement of variables

To capture the effect of firm's determinants of capital structure we used Total debt ratio (TDB) as the dependent variable.

For this investigation, the firm specific variables applied corresponded to the pecking order and the trade-off theory. The firm specific independent variables used were firm size, tangibility, profitability and growth obtained from the data available from the Superintendence of Companies of Ecuador, these are explained in Table 1.

Table 1

<i>Definition of firm specific variables</i>	
<u>Variable</u>	Measurement
Total Debt Ratio (TDR)	Total Liability/Total Assets
Firm Size	Ln(Assets)
Tangibility	Fixed Assets/Total Assets
Profitability	ROE (Net Income/Equity)
Growth Opportunities	Ln(Tangible Assets)

Elaboration: Author

## Macroeconomic variables.

To capture economic impact on capital structure decisions, the variables applied were inflation and GDP growth as mentioned by Baltacı and Ayaydın (2014). This data was retrieved from the database of the World Bank.

## Specifications of the model

The scope of the study was restricted to firms that legally operate in the corporate sector of Ecuador and are listed in the Superintendence of Companies of

Ecuador. To obtain financial econometric results the investigation used panel data. Where Hausman test determined the use of fixed effects. This study was performed with a significance level of five percent ( $\alpha$ ). The expected signs of the model are shown in Table 2.

Table 2

<i>Expected variable signs</i>		
<u>Variable</u>	<u>Pecking Order Theory</u>	<u>Trade Off Theory</u>
Tangibility	-	+
Profitability	-	+
Growth	+	-
GDP	+	-

Elaboration: Author

### **Research question**

This study looks to explain how the economic, financial and governmental factors influenced the level of leverage of the corporate sector of Ecuador between 2000 and 2013.



## Results

Table 3

<i>Pearson correlation matrix</i>										
	<u>TDR</u>	<u>Size</u>	<u>ROE</u>	<u>Growth</u>	<u>Tangibility</u>	<u>GDP</u>	<u>Corruption</u>	<u>Law</u>	<u>Quality</u>	<u>Rate</u>
TDR	1.0000									
Size	-0.0104	1.0000								
ROE	0.0168	-0.0061	1.0000							
Growth	0.0631	0.4678	-0.0081	1.0000						
Tangibility	-0.2551	0.0815	-0.0066	0.0286	1.0000					
GDP	0.0263	0.0521	0.0006	0.0492	0.0051	1.0000				
Corruption	-0.0539	0.1057	-0.0029	0.1022	-0.0461	0.6564	1.0000			
Law	0.0061	-0.0249	-0.0057	-0.0764	0.1142	0.2223	-0.0467	1.0000		
Quality	-0.0240	0.0024	-0.0046	-0.0562	0.1065	0.3232	0.1048	0.9493	1.0000	
Rate	-0.0290	-0.0389	-0.0042	-0.0867	0.1178	-0.2678	-0.4431	0.7492	0.7112	1.0000

*Notes:* Regressand Leverage is measured by Total Debt Ratio (TDR), calculated by Total Liabilities/Total Assets. Regressor size is measured by Ln(Assets)- ROE is measured by NI/Equity. Growth is measured by Ln(Tangible Assets). Tangibility is Fixed Assets/Total Assets. GDP is measured by the annual GDP growth of the country. Regressors Corruption refers to Control of Corruption, Law refers to Rule of Law, and Quality refers to Regulatory Quality are measured by the Worldwide Governance Indicators index.

Elaboration: Author

Table 3 shows the Pearson correlation matrix measures the degree of affinity between the dependent variable TDR and the independent variables size, ROE, growth, GDP growth, inflation, control of corruption, rule of law, regulatory quality and lending rate. It can be observed that the independent variables are not correlated to the dependent variable; however, regulatory quality and rule of law are strongly and positively correlated.

Table 4

<i>Hausman fixed random effects</i>				
<u>Coefficients</u>				
	(b) <u>Fixed</u>	(B) <u>Random</u>	(b-B) <u>Difference</u>	sqrt(diag(V_b-V_B)) <u>S.E.</u>
Size	0.0099517	0.0058278	0.0041238	0.0006965
Tangibility	-0.2551173	-0.282666	0.0275487	0.0045493
ROE	0.000689	0,0001491	0.0005399	0.0001389
Growth	0.0564628	0.0924282	-0.0359654	0.0036444
GDP	0.8303818	0.9069949	-0.0766131	0.0219681
Inflation	0.0906453	0.1157391	-0.0250937	0.0073553
Corruption	-0.3638976	-0.3980561	0.0341585	0.0136522
Law	0.3512801	0.3422329	0.0090472	0.006358
Quality	-0.198551	-0.2088747	0.0103237	0.0056098
Rate	-0.6064193	-0.689422	0.0830028	0,0451537
Prob>chi2=0.0000				
b= consistent under Ho and Ha B= inconsistent under Ha, efficient under Ho				
<i>Notes:</i> Regressand Leverage is measured by Total Debt Ratio (TDR), calculated by Total Liabilities/Total Assets. Regressor size is measured by Ln(Assets)- ROE is measured by NI/Equity. Growth is measured by Ln(Tangible Assets). Tangibility is Fixed Assets/Total Assets. GDP is measured by the annual GDP growth of the country. Regressors Corruption refers to Control of Corruption, Law refers to Rule of Law, and Quality refers to Regulatory Quality are measured by the Worldwide Governance Indicators index.				

Elaboration: Author

Table 4 tests the hypotheses of fixed or random effects, where results show that the model follows fixed effects.

Table 5

<i>Collinearity test</i>		
<u>Variable</u>	<u>VIF</u>	<u>1/VIF</u>
Quality	17.56	0.056937
Law	13.00	0.076900
Rate	6.09	0.164257
Corruption	2.72	0.367791
GDP	2.70	0.370775
Size	1.30	0.771032
Growth	1.29	0.774015
Tangibility	1.02	0.975957
ROE	1.00	0.999795
Mean VIF	5.19	

*Notes:* Regressand Leverage is measured by Total Debt Ratio (TDR), calculated by Total Liabilities/Total Assets. Regressor size is measured by Ln(Assets)- ROE is measured by NI/Equity. Growth is measured by Ln(Tangible Assets). Tangibility is Fixed Assets/Total Assets. GDP is measured by the annual GDP growth of the country. Regressors Corruption refers to Control of Corruption, Law refers to Rule of Law, and Quality refers to Regulatory Quality are measured by the Worldwide Governance Indicators index.

Elaboration: Author

Table 5 shows the result of the variance inflation (VIF) factor on each regressor. To test for multicollinearity, the statVIF test was performed on the independent variables. Results show that VIF is 5.19. Following Hair, Anderson, Tathan and Black (1995) a VIF lower than 10 means there is no collinearity in the sample.

Table 6

<i>Regression results</i>									
<u>Variable</u>	<u>Eq1</u>	<u>Eq2</u>	<u>Eq3</u>	<u>Eq4</u>	<u>Eq5</u>	<u>Eq6</u>	<u>Eq7</u>	<u>Eq8</u>	<u>Eq9</u>
Size	0.017 (0.002)**	0.017 (0.002)**	0.016 (0.002)**	0.017 (0.002)**	0.017 (0.002)**	0.017 (0.002)**	0.010 (0.002)**	0.010 (0.002)**	0.010 (0.002)**
ROE		0.001 (0.000)*	0.001 (0.000)*	0.001 (0.000)*	0.001 (0.000)*	0.001 (0.000)*	0.001 (0.000)*	0.001 (0.000)*	0.001 (0.000)*
Growth			0.019 (0.010)*	0.015 (0.010)*	0.014 (0.010)*	0.057 (0.008)**	0.056 (0.008)**	0.056 (0.008)**	0.058 (0.008)**
Tangibility				-0.262 (0.013)**	-0.261 (0.013)**	-0.250 (0.013)**	-0.260 (0.013)**	-0.257 (0.013)**	-0.255 (0.013)**
GDP					0.319 (0.037)**	1.121 (0.070)**	0.939 (0.067)**	1.093 (0.070)**	0.901 (0.071)**
Corruption						-0.379 (0.032)**	-0.326 (0.032)**	-0.290 (0.032)**	-0.377 (0.037)**
Law							0.092 (0.009)**	0.354 (0.017)**	0.351 (0.017)**
Quality								-0.246 (0.015)**	-0.194 (0.015)**
Rate									-0.768 (0.123)**
Constant	0.407 (0.021)**	0.406 (0.021)**	0.420 (0.023)**	0.451 (0.022)**	0.441 (0.022)**	0.295 (0.038)**	0.895 (0.038)**	0.430 (0.038)**	0.491 (0.036)**
R2	0.01	0.01	0.01	0.04	0.04	0.06	0.07	0.08	0.01
Observations	54,958	54,957	54,956	54,956	54,956	52,785	52,785	52,785	52,785

\* $p < 0.05$ ; \*\* $p < 0.01$ 

*Notes:* Regressand Leverage is measured by Total Debt Ratio (TDR), calculated by Total Liabilities/Total Assets. Regressor size is measured by Ln(Assets)- ROE is measured by NI/Equity. Growth is measured by Ln(Tangible Assets). Tangibility is Fixed Assets/Total Assets. GDP is measured by the annual GDP growth of the country. Regressors Corruption refers to Control of Corruption, Law refers to Rule of Law, and Quality refers to Regulatory Quality are measured by the Worldwide Governance Indicators index.

Elaboration: Author

Table 6 describes the panel data regression. Variable leverage, measured by the TDB is the regressand. This was regressed against the variables size, profitability, growth opportunities, tangibility, GDP growth, control of corruption, rule of law, regulatory quality and lending rate.

All the variables are significant at one percent, with the exception of variable profitability (ROE), which is significant at five percent. Variable inflation was tested for this model; though it was statistically significant, when more control variables were added, it presented a change in direction. Therefore, it was decided to remove this variable from this model to obtain better results.

$$Leverage = f \left( \begin{array}{l} size, profitability, growth, tangibility, GDP, \\ corruption, law, quality, rate \end{array} \right)$$

$$TDR = \frac{0.491}{0.036^{**}} + \frac{0.010Size}{0.002^{**}} + \frac{0.001ROE}{0.000^{*}} + \frac{0.058Growth}{0.008^{**}} - \frac{0.225Tangibility}{0.013^{**}} + \frac{0.901GDP}{0.071^{**}} \\ - \frac{0.377Corruption}{0.037^{**}} + \frac{0.351Law}{0.017^{**}} - \frac{0.194Quality}{0.015^{**}} - \frac{0.768Rate}{0.123^{**}}$$

Table 7

<i>Breusch-Pagan/Cook-Weisberg test for heteroscedasticity</i>						
<u>Variables</u>	<u>Coef.</u>	<u>Std.Err.</u>	<u>T</u>	<u>P&gt; t </u>	<u>[95% Conf. Interval]</u>	
Size	-0.0022519	0.0006171	-3.65	0.000	-0.0034613	-0.0010425
ROE	0.0001492	0.0000399	3.74	0.000	0.000071	0.0002274
Growth	0.157086	0.0081982	19.16	0.000	0.1410174	0.1731545
Tangibility	-0.3037521	0.0048574	-62.53	0.000	-0.3132728	-0.2942315
GDP	1.148452	0.0757295	15.17	0.000	1.000022	1.296882
Corruption	-.03749938	0.0183468	-220.44	0.000	-0.4109537	-0.3390339
Law	0.3618956	0.0189713	19.08	0.000	0.03247117	0.3990794
Quality	-0.2506298	0.0194766	-12.87	0.000	-0.288804	-0.2124555
Rate	-0.9457247	0.1212072	-7.80	0.000	-1.183292	-0.7081575
Constant	0.6164495	0.0238903	25.80	0.000	0.5696243	0.6632748
<b>Breusch-Pagan/Cook-Weisberg test for heteroscedasticity</b>						
chi2= 1563.64						
Prob > chi2= 0.0000						
<i>Notes:</i> Regressand Leverage is measured by Total Debt Ratio (TDR), calculated by Total Liabilities/Total Assets. Regressor size is measured by Ln(Assets)- ROE is measured by NI/Equity. Growth is measured by Ln(Tangible Assets). Tangibility is Fixed Assets/Total Assets. GDP is measured by the annual GDP growth of the country. Regressors Corruption refers to Control of Corruption, Law refers to Rule of Law, and Quality refers to Regulatory Quality are measured by the Worldwide Governance Indicators index.						
Elaboration: Author						

Table 8

<i>White's test for homoscedasticity</i>			
<u>Source</u>	<u>chi2</u>	<u>df</u>	<u>P</u>
Heteroscedasticity	7137.49	45	0.0000
Skewness	4629.98	9	0.0000
Kurtosis	132.35	1	0.0000
Total	11899.82	55	0.0000

White's test for Ho: homoscedasticity  
 Ha: unrestricted heteroscedasticity  
 $\text{chi2}(45) = 7137.49$   
 $\text{Prob} > \text{chi2} = 0.0000$

Elaboration: Author

The standard errors were adjusted to reflect homoscedasticity.

Additionally, the Breusch-Pagan test table 7 and the White test table 8 were performed, and it was confirmed the absence of heteroscedasticity in the model.

Table 9

<i>Wooldridge test for autocorrelation</i>
Ho: No first-order autocorrelation
$F(1, 5133) = 1512.131$
$\text{Prob} > F = 0.000$

Elaboration: Author

The results of Wooldridge test on table 9 reveal that the model has no first order autocorrelation.

Table 10

<i>Jarque-Bera tests for normality</i>			
Variable	Observations	Pr(Skewness)	Pr(Kurtosis)
myResiduals	52,785	0.0000	0.0000

Elaboration: Author

Table 11

<i>Shapiro-Wilk W test for normal data</i>					
<u>Variable</u>	<u>Observations</u>	<u>W</u>	<u>V</u>	<u>z</u>	<u>Prob&lt;z</u>
myResiduals	52,785	0.97512	479.067	17.133	0.00000

Elaboration: Author

After the residuals were determined. The investigation employed Jarque-Bera and Shapiro-Wilk test to assess the normality of residuals. According to the tests (table 10 and 11), there is statistical evidence to support that the residuals are not normally distributed.

### **Discussion**

The results obtained from the panel data analysis showed that the firm specific determinants of capital structure of the corporate sector of Ecuador follow the assumptions of the pecking order theory and the trade off theory, exhibiting that they are not mutually exclusive in determining the level of leverage maintained by firms. Variables tangibility, growth opportunities and GDP growth follow the assumptions of the pecking order theory, whereas size and profitability follow the assumptions of the trade off theory.

The model embraces the trade off theory and the pecking order theory, similar to the models obtained by different studies. The model obtained by Baltaci



and Ayaydin (2014) found that variables tangibility, profitability and GDP growth follow the assumptions of the pecking order theory, whereas firm size follows the trade off theory. Briones and Chang (2017) found a model of Ecuadorian firms of the manufacturing sector in which variable profitability followed the pecking order theory, firm size followed the assumptions of both theories and variable tangibility did not follow the assumptions of either theory. Serrasqueiro and Caetano (2015) found in their model that profitability and age are in accordance to the pecking order theory, while size is in accordance with the trade off theory. Lastly, Silva, Santos, Perobelli and Nakamura (2016) indicated in their model that Indian companies also followed the assumptions of the trade off theory and the pecking order theory: variables tangibility, growth opportunities and size followed the trade off theory, while profitability, the pecking order theory.

Results show that the macroeconomic, financial and governmental factors have an influence on the leverage level of the firms of the corporate sector. Through the years analyzed, it was found that these variables have a significant impact on the leverage level. Macroeconomic variable GDP growth and systemic variable rule of law have a significant and positive effect on leverage levels. On the other hand, financial variable lending rate and systemic variable control of corruption and regulatory quality have a negative and significant influence on the leverage levels of corporate firms of the country. These results show that these regressors are significant at one percent; therefore, they are influential on determining the leverage levels of firms.

### **Firm specific determinants**

In accordance to the pecking order theory, when variable tangibility was tested it showed that the firms of the corporate sector of Ecuador have a negative and significant relation with the before mentioned variable and TDR. This result is in line to the findings of Köksal and Orman (2014), Booth, Arvazian, Demirguc-Kunt and Maksimovic (2001), Sheik and Wang (2010), Joeveer (2013) and Rajan and Zingales (1995), who concluded low information asymmetry reduces the cost of the issuance of equity. However, the investigation highlights that the Ecuadorian capital market is not strong and well developed, so this negative relation can be associated to the findings of Booth et al. (2001), who said firms with more tangible assets use long term debt, yet the TDR reduces.

The firms of the corporate sector of Ecuador presented a positive and significant relation between firm size and TDR. This is consistent with the trade off theory. Consequently, it can be implied that firms in the corporate sector of Ecuador incur in more debt as their size increase too. This can be attributed to the fact that by the issuing more debt, firms can take advantage of tax benefits, as shown in the findings by Titman and Wessels (1988), Fauzi, Basyith and Idris (2013), M'ng et al. (2017). In addition, it is suggested that firms in the corporate sector of Ecuador issue more debt as they have less transaction costs and have more availability to issue it; which is in line to the results obtained by Forte et al. (2013).

The results showed that there is a significant and positive relation between profitability and TDR of the firms that operate in the Ecuadorian corporate sector. This result follows the assumptions of the trade off theory. It can be inferred that as these firms become more profitable, they have more access to issue debt. Their

TDR is positively influenced by profitability, which are in line with the results found in the studies of Fama and French (2002) and Ali (2011).

Variable growth opportunities showed a positive and significant effect, which is in line with the assumptions of the pecking order theory. Based on this result, it can be said that the Ecuadorian firms studied require more debt when they have more opportunities to expand. Once their internal resources have been utilized, it entails they will issue more debt to finance their growth. This finding is in accordance to the ones presented by Rajan and Zingales (1995), Booth et al. (2001), Frank and Goyal (2009), and Chen (2004).

### **Financial determinant**

The variable lending rate presents a negative and significant relation to TDR. Therefore, this variable follows the assumptions of the market timing theory. Accordingly, this result is in line with the findings of Baker and Wurgler (2002), Yinusa et al. (2016) and Graham and Harvey (2001). In line with the authors, it is expected a negative relationship between interest rate and TDR, given that higher interest rates make leverage less attractive due to its increased cost.

### **Macroeconomic determinants**

Variable GDP growth follows the assumptions of the pecking order theory. The findings showed that the variable GDP growth has a positive and significant relationship with TDR. These results are consistent with Rajan and Zingales (1995), Frank and Goyal (2009) and Chipeta and Mbululu (2013). The authors argument that in times of economic expansion firms require more external financing to grow. Since the change in currency in Ecuador in the year 2000, the

country has increased its annual GDP, implying that firms require more debt to expand their operations and keep up with a growing economy.

### **Systemic determinants**

Findings showed that there is a significant and negative relation between control of corruption and TDR. These results are in line with Stiglitz and Weiss (1981), and Fungáčová, Kochanova and Weill (2015). Authors found that there is a positive correlation between corruption and leverage maintained by firms. This is attributed to management bribes to banks in order to obtain credit, therefore, as corruption in the countries increased, so do leverage levels. In the case of Ecuador, an increase in control of corruption aligns with the results of the aforementioned authors, yet it contradicts the findings of Brealey, Leland and Pyle (1977). Authors found that an increase in corruption reduces leverage levels as investors expect to regain their capital based on the terms of the contract, however, when corruption increases, their risk of regaining it too.

Regarding rule of law, the equation showed that an increase in rule of law has a positive and significant effect on TDR. In line with La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998) and Demirgüç-Kunt and Levine (1999), Ecuadorian firms that operate in the corporate sector are significantly influenced by the rule of law in a positive direction. Therefore, it can be implied that management of the before mentioned firms are confident in and abide by the rules of society. As rule of law improves, corporate firms will issue more debt as they are more confident in the legal system of Ecuador.

The regression shows a negative and significant relation between regulatory quality and TDR. This result contradicts the findings of Spiegel (1994),

Mutenheri and Green (2003), de Jong, Kabir and Ngugyen (2007) and Jõeveer (2013), who found that an increase in regulatory quality leads to higher levels of leverage due to a less hostile environment to operate in. However, as seen in the obtained results, an increase in regulatory quality reduces the level of leverage in Ecuador, which goes against what has been stipulated by other authors. Once again, this can be attributed to the fact that the capital market of the country is not strong; therefore, corporate firms issue debt when it is needed to finance their operations.

### **Conclusion**

This study identified the determinants of capital structure of firms that operate in the corporate sector of Ecuador. The data studied included 54,958 observations from firms listed in the Superintendency of Companies of Ecuador that operated in the before mentioned sector between the years 2000 and 2013. A panel data analysis was applied to find the firm specific, financial, macroeconomic and systemic determinants of capital structure of the firms studied. Furthermore, this study explained how the financial, systemic and macroeconomic environment influenced leverage decisions.

Results showed that the eight regressors tested in the model that explained TDR were significant. This demonstrated that there is enough statistical evidence to consider them determinants of capital structure of the corporate sector of Ecuador. However, these regressors show that mentioned firms are not exclusive to a capital structure theory. Regressors tangibility, growth opportunities and GDP growth follow the assumptions of the pecking order theory, regressors size,

profitability and inflation follow the trade off theory and lending rate followed the assumptions of the market timing theory.

The financial, macroeconomic and systemic determinants were significant at one percent; therefore, they have a notable influence on the leverage levels maintained by the studied firms. This implies that changes in the external environment of the firm has an effect on their TDR. Therefore, managers should take these regressors into consideration when they are analyzing financing decisions.

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