Societal Impact of Knowledge and Design

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Strategic Factors of the Capital Structure of the Manufacture, Services and Communication Sector in Mexico

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Structured Abstract

Purpose- The absence of policies, rules and models in businesses that enable them to generate a siutable capital structur and build a solid competitive advantage, is what sustains this research, which consisted in reviewing and analyzing the theories, empirical studies, existing hypotheses and all the main postulates with the purpose of identifying the main strategic factors of the country and of the manufacturing, services and communication companies, to design their strategies by incorporating long-term debt into their capital structures.

Design/methodology/approach – In the analysis, financial information of companies that quoted continuously to the Mexican Stock Exchange was used, in the periods of 2000-2012. The long-term debt was the dependent variable, and the panel data technique was applied with the E-Views 8.1 program in order to determine its mathematical relationship to main independent factors. The econometric model and the strategic factors used in this empirical study were identified and used in previous theories and research that were analyzed and commented on in the theoretical framework of this research.

Originality/value – Studies on capital structure in Mexico are essential, and the lack of a solid model to explain and make the financial decisions of Mexican organizations justifies

this investigation. This analysis offers a solid basis for addressing the problem, questions and objectives formulated.

Practical implications – The results are of theoretical and practical interest, in addition to identifying and understanding the mathematical relationship of the main strategic factors of the country and the company that influence the inclusion of long-term debt in the capital structure, the results are also useful to generate standards and guidelines that facilitate decision-making and reduce uncertainty by incorporating long-term debt made by manufacturing, services and communication companies in Mexico in order to generate a solid competitive advantage.

Keywords: Capital structure, Company factors, Country factors.

Paper type – Academic Research Paper / practical book

1 Introduction

The research is motivated by the absence of policies, rules or models into the real life of companies to identify strategic factors and subsequently generate an adequate capital structure, this implyed the theories reviewing, empirical studies, existing hypotheses and the main postulates, to identify the strategic factors and determine their mathematical relationship with the incorporation of long-term debt in the capital structure.

Reviewing and analyzing the related studies of the capital structure provides a solid basis for the proposed problem and the established objectives. The studies of the strategic factors to form the capital structure of companies in Mexico are fundamental, due to the lack of a solid model to make sound financial decisions in Mexican organizations, especially in the sectors of manufacture, services and communication, this amply justifies this investigation.

The result of reviewing the theories and empirical studies gave solid foundation to the problem, questions and posed objectives. Studies of the capital structure in Mexico are fundamental, the lack of a robust model that explains financing decisions in Mexican organizations and particularly of manufacturing, services and communications companies.

2 Theoretical framework

The financial literature since Modigliani and Miller (1958) published their article with the proposition of the irrelevance of the capital structure on the value of the company and, the existence or not of an optimal capital structure, as well as the identification of main strategic factors and the form in that way it should be combined to determine the capital structure, it has been one of the most controversial topics in corporate finance.

It has been sixty years since the seminal work that gave rise to corporate finance as we know it today was published and at the same time caused capital structure studies to attract so much attention from the economy and financial areas, however, the extensive research done on the theory of capital structure, to this day, it has not conclusive answers.

The theoretical models developed during the last years, have tried since to validate and generalize sometimes, the thesis of the irrelevance of Modigliani and Miller (1958); On other occasions the models have tried to adjust the thesis of a maximum of indebtedness, tried to adjust the thesis of maximum indebtedness of Modigliani and Miller (1963). From the convergence of both lines of research on the decade of the 60's emerged a renovated theory of the capital structure that postulate the existence of an optimal structure to the proposed problem.

In this research were reviewed the following theories: optimal capital structure, Theory of the Fiscal Tax Base, Theory of the Asymmetric Information, The Theory of the Agency Costs, The Free Cash Flow Theory, The Pecking Order Theory (POT); This last theory was formally proposed by Myers (1984), based in the preliminary work of Donaldson. (1961).

The empirical studies that support all the aforementioned theories were also reviewed, highlighting among others, the studies done by Rajan and Zingales (1995), and the study of Wald (1999), these studies offered empirical evidence for G-7 countries. They were analyzed some institutional factors of the company, such as: The total assets (size of the firm), profit, sales (growth rate), and the capital (risk).

Empirical studies, as well as financial theories, have evolved and increased knowledge; However, in the different researches done hasn't been achieved the construction of a model that includes jointly all the factors considered capital structure determinants, among the published investigations, we can mention the ones made. Filbeck and Gorman (2000), Bradley, Chung, (1993), Van el Der (1989), Kester (1986), Harrel and Kim (1984).

Arias, M., Arias, L., Pelayo and Cobián (2009), argued that is necessary to do an specialized research on this issue in Mexican companies with the purpose of achieving a better understanding of their hiring and debt decisions, also in order to design financial instruments suited to their financial needs and to facilitate and support their growth.

2.1 Macroeconomic factors of country and capital structure

Recent empirical evidence suggests that country-specific factors are important aspects that should be considered when forming the capital structure in the emerging markets company (Booth, Aivazian, Demirguc-Kunt and Maksimovic, (2001); , Guney and Paudyal, (2008), Gaytan and Bonales (2009), Dias, Thosiro and Cruz, (2009), Días and Toshiro (2009) suggest that the specific factors in the explanation of the hiring decisions

of the debt of the company is related to the economic environment and mechanisms institutional of each country, such as the financial sector, tax system, legal system and accounting practices.

In the studies carried out on the strategic factors of the country, considered as determinants in the construction of the capital structure of the companies, it has been found that the following factors, among others, have a significant impact: i) income tax rate), ii) inflation, iii) interest rate and iv) exchange rate. Therefore, in this investigation of the sectors of manufacturing, services and communications, the four macroeconomic institutional factors aforementioned were considered.

2.2 Capital structure and the microeconomic factors of the company

This research has sought to identify the specific strategic factors of each sector that could be the relevant aspects that influence to the construct their capital structures, in order to prove the validity of theories that support them. Among the strategic factors of the company that can act as significant when forming the capital structure, in the empirical studies carried out by Dias, Toshiro and Cruz. Gaytán and Bonales (2009), Dias and Toshiro (2009), they found significant evidence have been found when we incorporate time-long debt in the capital structure, in the following factors: i) total assets, ii) operating income iii) capital, and iv) net sales. For this reason, the four factors aforementioned were also considered in this research of the manufacturing, services and communications sectors.

3 Hypothesis

The income tax rate, the interest rate, the operation profit, the exchange rate and the capital are factors that are negatively related; on the contrary the inflation, the total assets and the net sales are factors that are positively related, incorporating long-term liabilities in the capital structure used by the companies of the manufacture, services and communication sector in Mexico.

4 Methodology

The analysis of the panel data studies the data set, using together techniques of cross section and time series. The available information is processed and presented in two dimensions, generating multiple observations for each economic unit, enriching the empirical analysis. (Rivera, 2007), (Mayorga and Muñoz 2000), (Mur and Angulo, 2006), (Rivera, 2007). The study was, not probabilistic, because were considered all the companies from the manufacture, services and communication.

The econometric model of the panel data was chosen and used to calculate the mathematical relationship of the factors, the sample of the factors was used for the period from 2000 to 2012. The model is also known as longitudinal joint, gathered data, time series and cross-section, micro-panel data, history analysis and peer analysis. (Gujarati, 2003).

The model recognizes two effects, on one hand the effects that they are unequally affected to each of the study agents contained in the sample, on the other hand, the temporary effects that equally affect all individual units of study that do not vary over time, allowing to study changes in the benefits of a single company over a period of time and the variety of benefits of several companies. (Pindyck, 2001).

The analysis of the panel data, available information is processed and presented in two dimensions, generating multiple observations for each economic unit, enriching the empirical analysis. (Rivera, 2007), (Mayorga and Muñoz 2000), (Gujarati, 2003), (Mur and Angulo, 2006), (Rivera, 2007).

The technique of the panel data can develop and test complex models, according to Carrascal is applicable to the following areas a) Sales prediction, b) Cost studies, c) Financial analysis, d) Macroeconomic prediction, e) Simulation, f) Analysis and evaluation of any type of statistical data. Also, it allows us to observe the causal inferences of the independent and dependent factors, these inferences of causality would be difficult to understand if only applied in isolation technique of "cross-sectional data" or the technique of "time series data". The analysis of panel data, capture the heterogeneity and the economic agents incorporating the dynamic analysis. (Rivera, 2007), (Mayorga & Muñoz, 2000).

5 Model specifications

It was used the fixed effects model. This model takes into account the unique characteristics of each unit (company) of the cross section, causing the intercept vary for each unit, however, assumes that the angular coefficients are consistent between the units. The estimation was performed using the method of least squares (GLS) because it provides the most robust results for the characteristics of our study sample, at the same time the White contrast was used to identify heteroscedasticity and this was corrected by cross section weighting.

The dependent variable is represented by the long-term liabilities presented by each of the companies in the sample, also, within of the regressors and as the independent variables, are the integration of each of the internal factors of the firm that could affect the debt integration in capital structure, which are specified within a common factor, so, E-Views will include a single coefficient for each variable; to correct the heteroscedasticity problem the calculation of variances and standard errors consistent to

White heteroscedasticity will be included; to avoid the multicollinearity problem, initially each of the variables will be analyzed on a bivariate way and jointly afterwards, adjusted by the exclusion of factors technique; to verify a possible autocorrelation, we will use the statistic from Durvin-Watson.

The model that we will follow is the fixed effect, establishing a ratio of interception by differential intersection dichotomous variables, with the journey across weighting option, using the following equation:

$$Y_{it} = \alpha_1 + \alpha_2 D_{2i} + \alpha_3 D_{3i} + \ldots \alpha_n D_{ni} + \beta_{1i} + \beta_2 X_{2it} + \beta_3 X_{3it} + \ldots \beta_n X_{nit} + \mu_{it} \quad (1)$$

With i = 1,.....N; t = 1,...T.

Where:
i = refers to the individual or unit of study (cross section)
t = time dimension
α = vector of intercepts of n parameters
β = is a vector of K parameters
X_{it} = is the i-th observation at time t for the K explanatory variables

The total sample of observations in the model would be given by: N x T. (Mayorga and Muñoz, 2000) and (Pindyck and Rubinfeld, 2001).

6 Source and data collection

The specific variables of the companies were obtained from the financial statements published in the financial yearbook of the Mexican Stock Exchange, the source is very reliable, according to the specific laws, the companies listed on the Stock Exchange have the obligation to generate reports at the end of each quarter (Schneider, 2001). The macroeconomic data were obtained by databases and publications made by the Bank of Mexico.

The study simple was not probabilistic, because all the companies from the transformation and commerce sector that were listed in 2000-2012 periods were considered. According to the stratification of the Official Journal of the Federation of Mexico, published in June 2009, for its size, all are classified as large companies.

This research considered the dependent variable: The Long-Term Liabilities. We also considered eight independent variables, of which four are company-specific variables: Total Assets, Net Sales, Operating Income and Capital, and the other four are the country's macroeconomic variables: Income Tax Rate (ITR), Interest Rate, Inflation and Exchange rate.

7 Analysis and interpretation of results

After applying the multivariate technique of panel data, that involved the dependent and independent variables, the economic model showed the existence of a high correlation between the independent variables, causing multicollinearity.

Multicollinearity is a high degree of correlation (linear dependency) among several independent variables. It commonly occurs when a large number of independent variables are incorporated in a regression model. Is, some independent variables showed a significance greater than 5%. So the null hypothesis was not rejected. The null hypothesis for each complementary hypothesis was defined as: Ho: Bi = 0, where i, is the independent variable to the level of significance of 5%.

7.1 Stepwise Method

The application of the method allowed us identifies the strategic factors in the capital structure that used by the manufacture, services and communication sectors. The strategic factors improve the model, also the levels of adjustment and his explanation. The model redefined of the manufacture sector only included the following independent variables: Net Sales, Capital, Income Tax and Exchange Rate. The model redefined of the services sector only included the following independent variables: Operating Income, Total Assets and Sales. The model redefined of the communication sector only included the following independent variables: Total Assets, Capital, Interes Rate and Inflation.

7.1.1 Manufacture Test, inflation factor of the variables variance (VIF)

The Variable Inflation Factor (VIF) for the manufacture sector was calculated by considering only the redefined model's variables after applying the stepwise method. The result showed a decrease in the average variance inflation factor of 15.58 to 3.82, a figure within the acceptable ranges (Table 1).

Table 1 - Manufacture (VIF) with significant variables

Variable	VIF	1/VIF
Net Sales	5.80	0.172447
Capital	5.78	0.173110
Income Tax Rate	1.84	0.544071
Exchange Rate	1.87	0.533767
Mean VIF	**3.82**	

Prepared by the authors based on financial data from the Mexican Stock Exchange, 2000-2012

7.1.2 Services Test, inflation factor of the variables variance (VIF)

The Inflation Factor of the Variables (VIF) for the services sector calculated considering only the variables of the redefined model after applying the stepwise method. The result showed a decrease in the average variance inflation factor of 16.31 to 3.89, which is into the acceptable ranges test. (Table 2)

Table 2 - Services (VIF) with significant variables

Variable	VIF	1/VIF
Operating Income	5.79	0.172735
Total Assets	3.59	0.278919
Net Sales	2.29	0.437061
Mean VIF	**3.89**	

Source: Own elaboration, based on financial data, of the Mexican Stock Exchange 2000-2012

7.1.3 Communication Test, inflation factor of the variables variance (VIF)

The Inflation Factor of the Variables (VIF) for the communication sector calculated considering only the variables of the redefined model after applying the stepwise method. The result showed a decrease in the average variance inflation factor of 37.03 to 21.63, which is into the acceptable ranges test. (Table 3)

Table 3 - Communication (VIF) with significant variables

Variable	VIF	1/VIF
Total Assets	41.43	0.024137
Capital	40.91	0.024447
Interest Rate	2.14	0.467105
Inflation	2.03	0.492222
Mean VIF	**21.63**	

Source: Own elaboration, based on financial data, of the Mexican Stock Exchange 2000-2012

7.2 Multivariate technique of panel data

We apply the regressions necessary of panel data with random effects with the purpose of generating the enough information to apply the Hausman Test. The result of the Hausman test showed that the multivariate technique of panel data with (fixed effect) is right for this research.

7.2.1 Manufacture Sector: Multivariate technique of panel data

Manufacture: the multivariate regression of panel data (fixed effects), shows that the net sales, exchange rate and income tax have positive correlation and the capital has negative correlation incorporating the long-term liabilities. (Table 4)

Table 4 - Final results for the manufacture sector, after applying the data panel technique, using the E-views 8.1 program:

Dependent Variable: **LONG-TERM LIABILITIES?**
Method: Pooled EGLS (Cross-section weights)
Date: 03/30/17 Time: 15:01
Sample: 2000 2012
Included observations: 13
Cross-sections included: 25
Total pool (balanced) observations: 325
Linear estimation after one-step weighting matrix
White cross-section standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2677365.	481066.6	5.565477	0.0000
Net Sales	0.537172	0.032122	16.72276	**0.0000**
Exchange Rate	22112.35	9219.157	2.398522	**0.0171**
Income Tax Rate	2759495.	396032.0	6.967857	**0.0000**
Capital	-0.338898	0.035340	-9.589552	**0.0000**
Fixed Effects (Cross)				

Weighted Statistics			
R-squared	0.964434	Mean dependent var	12129269
Adjusted R-squared	**0.961069**	S.D. dependent var	14310808
S.E. of regression	3526599.	Sum squared resid	3.68E+15
F-statistic	286.6599	Durbin-Watson stat	0.911849
Prob(F-statistic)	0.000000		

Prepared by the authors based on financial data from the Mexican Stock Exchange, 2000-2012

The multivariate regression panel data fixed effects show that Net Sales, Exchange Rate and Income tax are positively correlated positive correlated and that Capital is negative correlated to incorporate long-term liabilities, showing a model explanatory power of 0.961069

Table 5 - Factors that have mathematical relation by including debt in the capital structure of the manufacture sector companies.

Concept	Capital (-)	Net sales (+)	Exchange Rate (+)	Income Tax (+)
Significance	***	***	**	***

*** Significant at the 0.001 level
Source: Own elaboration based on the output results of the E-Views software (see table No.4)

7.2.2 Services Sector: Multivariate technique of panel data

The final results for the services sector after adjusting and applying the econometric model taking into consideration only the strategic factors through the panel data technique, are shown in table No. 6.

Table 6 - Final results for the services sector, after applying the data panel technique, using the E-views 8.1 program:

Dependent Variable: LONG-TERM LIABILITIES?
Method: Pooled EGLS (Cross-section weights)
Date: 03/30/17 Time: 16:17
Sample: 2000 2012
Included observations: 13
Cross-sections included: 6
Total pool (balanced) observations: 78
Linear estimation after one-step weighting matrix
White cross-section standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-825640.1	131520.6	-6.277651	0.0000
Net Sales	0.538669	0.063606	8.468805	0.0000
Operating Income	-1.072066	0.161484	-6.638839	0.0000
Total Assets	0.359874	0.034193	10.52480	0.0000

Cross-section fixed (dummy variables)

Weighted Statistics

R-squared	0.911276	Mean dependent var	2029654.
Adjusted R-squared	0.892464	S.D. dependent var	2436402.
S.E. of regression	259185.8	Sum squared resid	4.64E+12
F-statistic	979.9967	Durbin-Watson stat	1.056882
Prob(F-statistic)	0.000000		

Source: Own elaboration, based on financial data, of the Mexican Stock Exchange 2000-2012

The multivariate regression panel data fixed effects shows that parity and equity are negative correlated and that the total assets is positive correlated to incorporate long-term liabilities, showing a model explanatory power of 0.892464

Table 7- Factors that have mathematical relation by including debt in the capital structure of the services sector companies.

Concept	Net Sales (+)	Operating Income (-)	Total Assets (+)
Significance	***	***	***

*** Significant at the 0.001 level
Source: Own elaboration based on the output results of the E-Views software (see table No.6)

7.3 Communication Sector: Multivariate technique of panel data

The final results for the communication sector after adjusting and applying the econometric model taking into consideration only the strategic factors through the panel data technique, are shown in table No. 8.

Table 8 - Final results for the communication sector, after applying the data panel technique, using the E-views 8.1 program:

Dependent Variable: LONG-TERM LIABILITIES?
Method: Pooled EGLS (Cross-section weights)
Date: 03/23/17 Time: 14:40
Sample: 2000 2012
Included observations: 13
Cross-sections included: 8
Total pool (balanced) observations: 104
Linear estimation after one-step weighting matrix
White cross-section standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-14876625	7603946.	-1.956435	0.0534
Capital	-1.663809	0.223719	-7.437065	0.0000
Interes Rate	-79088314	22643351	-3.492783	0.0007
Total Assets	1.182678	0.119136	9.927158	0.0000
Inflation	1.18E+08	58452492	2.016156	0.0467

Cross-section fixed (dummy variables)

Weighted Statistics

R-squared	0.945186	Mean dependent var	63323075
Adjusted R-squared	0.938632	S.D. dependent var	66028713
S.E. of regression	20402702	Sum squared resid	3.83E+16
F-statistic	144.2187	Durbin-Watson stat	1.007402
Prob (F-statistic)	0.000000		

Source: Own elaboration, based on financial data, of the Mexican Stock Exchange 2000-2012

The multivariate regression panel data fixed effects show that parity and equity are negative correlated and that the total assets are positive correlated to incorporate long-term liabilities, showing a model explanatory power of 0.938632

Table 9 - Factors that have mathematical relation by including debt in the capital structure of the communication sector companies.

Concept	Capital (-)	Interest Rate (-)	Total Assets (+)	Inflation (+)
Significance	***	***	***	**

*** Significant at the 0.001 level
Source: Own elaboration based on the output results of the E-Views software (see table No.8)

Table 10- Strategic factors that relate with incorporating long term debt in the capital structures of the services and communication sector

Concept	**Net Sales (+)**	**Operating Income (-)**	**Capital (-)**	**Income Tax (+)**	**Interes Rate (-)**	**Total Assets (+)**	**Inflati on (+)**	**Exchange Rate (-)**
Manufac ture	***		***	***				**
Services	***	***				***		
Commu nication			***		***	***	**	

*** Significant at the 0.001 level
Source: Own elaboration based on the output results of the E-Views software (see tables No.5, 7 and 9)

The obtained results after applying the statistical tests, show that the strategic factors of the country and companies, that relate to the addition of long term debt to form the capital structure used by enterprises of the manufacture, services and communication sectors in Mexico, are not the same and they do not have the same mathematical relation to each of the sectors. This can be seen in the summary that shown in table No.10.

7.4 Net Sales

Manufacture and Services industries have a positive mathematical relationship determined in this study yet. It coinciding with the results obtained by Hall, Hutchinson, and Michaelas (2000), who studied 3,500 small and medium enterprises (SMEs) in the UK unlisted Stocks, and they using the percentage increase in sales volume growth as an indicator variable, found that the level of short-term debt is positively related to growth of the company. It also coincides with the results of other authors such as Rajan and Zingales (1995) and Myers (1977).

7.5 Operating Income

Services sector, the result shows that operating income as a factor in the inclusion of debt, to form the capital structure has a negative relationship, this result agrees with those obtained by (Jordan, Lowe and Taylor, 1998), (Philisophov and Philosophov 1999), who found, the profit is negatively related to the long-term debt.

7.6 Capital

The application of the statistic proves the affirmation that the formulated hypothesis holds, the countable capital is related in a negative way in the decisions that incorporate the debt of the manufacture and communication companies. Those results, agree with Mason´s job (1990), Friendly Lang (1988), the important founds that they got from the United States, match with the obtained results in this empiric study, showing negative meaning related to the passive long term.

7.7 Income Tax

Statistical results, indicates that Income Tax Rate is positive, confirming that tax advantage of the total financing cost through borrowing has been exploited by companies of manufacture sector. The results confirm that the traditional approach to the tax advantage or trade-off between equity and borrowed funds, suggesting an optimal or equilibrium relationship between them, has lost ground to other theories as he states in his research (Myers 1984).

7.8 Interest Rate

In the companies of communication sector, the result shows that Risk free interest rate is negative related with the incorporation of liability (debt or leverage), matching the results of studies conducted by Barry, Mann, Mihov, and Rodriguez (2008), who found that firms issue more debt when interest rates are lower than historical levels.

7.9 Total Assets

In the companies of services and communication sector, we obtained a positive mathematical relationship of total assets with long-term liabilities. The total assets seem to be the most important factor in financing, especially for long-term debt, (Vigrén, 2009). This result agrees with the results shown in the classic article on this issue at the international level of Rajan and Zingales (1995), who researched the fundamental aspects of the capital structure of the company for the (G-7) countries during the period 1987-1991, finding that the total asset is a factor to incorporate debt, arguing that large companies tend to have a higher level of indebtedness. Other researchers like Frank and Goyal (2009), as well as Dias, Toshiro and Cruz. (2009) and Dias and Toshiro (2009), who obtained evidence in Latin American companies, including Mexican, agree with Rajan and Zingales.

7.10 Inflation

In the companies of communication sector, the result shows that inflation has a positive mathematical relationship with the incorporation of liability (debt or leverage), this result coincides with the result obtained by Gaytan and Bonales (2009), the study of multinational companies belonging to the electronics industry, established in the state of Jalisco, Mexico, they also found that the inflation rate has a positive relationship to incorporate debt in capital structure.

7.11 Exchange Rate

The result obtained by the application of the statistics proves with the panel data technique, confirms the hypothesis, by showing a negative relation of the exchange rate, by incorporating the Long-Term debt in the used capital structure by the manufacture companies. The traditional economic theory affirms that the increase of the risk by exchange rate, influencing companies to use less long-term debt in its capital structure. The principles of the proposals from Mogigliani and Miller assumed that the companies face a kind of similar exchange rate risk. However, Kranier (1972) concludes that those principles cannot be applied in case of international environments.

8 Conclusions

In the research the positive or negative relationship were identified of the quantitative strategic factors of the country and the companies of sectors manufacture, services and communication sectors in Mexico. The mathematical model for used identify the positive or negative relationship of the principal factors it is known as statistical technique of "panel data".

The mathematical model once defined and applied showed multicollinearity. The problem of multicollinearity demanded redefine the model, in the redefinition it was used the method stepwise to improve levels of adjustment and explanation, also decreased and improved the existence of multicollinearity with the application of the test (VIF). Finally were identified the strategic factors that have mathematical relation with incorporating long-term debt in the capital structure of the services and communication sectors.

The multivariate regression of panel data (fixed effects), showed the following:

1. Manufacture sector: the net sales, exchange rate, and income tax have positive correlation also the capital has negative correlation with incorporating long-term liabilities.
2. Services sector: the capital and net sales have positive correlation, and the operating income has negative correlation with incorporating the long-term liabilities.

3. Communication sector: the total assets and inflation have positive correlation, and the capital and interest rate have negative correlation with incorporating the long-term liabilities.

The results are useful for generating standards and guidelines that facilitating decision making for incorporating debt in the capital structures of companies of the manufacture and services sectors in Mexico.

The results will decrease uncertainty and support the decisions about tangible and intangible assets of investment projects done by companies in the manufacture, services and communication sectors.

Factors emanating from the qualitative characteristics such as culture, power, country risk, and personal values, are aspects that can influence and change the results, reason why we suggest his inclusion in future researches.

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Note: "Contact the author for the full list of references"