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In Pro-Research, Teaching and Training of human resources committed to Science. The content of the articles and reviews that appear in each issue are those of the authors and does not necessarily the opinion of the editor in chief.

In the first issue we present, *A perspective of the collection of net taxes and federalized public spending in Mexico,* by VALENZUELA-REYNAGA, Rodolfo and HINOJOSA-CRUZ, Adriana Verónica , with affiliation in Instituto Tecnológico de Sonora & Universidad Autónoma de Nuevo León, as following article we present, *Analysis of the relationship between the financial and productive sectors, in the context of the financialization process of the Mexican economy*, by LAPA-GUZMÁN, Javier and ROSAS-ROJAS, Eduardo, with adscription at the Universidad Autónoma del Estado de México, as the following article we present*, Human Resources Administration in the SMEs of León, Guanajuato*, by MÁRQUEZ-DE ANDA, Camilo, QUEZADA-FLORES, Ma. de la Luz, SERRANO-TORRES, Ma. Guadalupe and MEJÍA-GUERRERO, Mauricio, as the last article we present, *Productive Architecture in MSMEs, Management Alternatives and Sources of Financing*, by OLAGUEZ-TORRES, Eugenia, VALENCIA-IBARRA, Alma Y., LARA-MARTÍNEZ, Alice M. and OSUNA- ORTIZ, Nataly, with adscription in Universidad Politécnica de Sinaloa.

Content

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Article　　　　　　　　　　　　　　　　　　　**Page**

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Originality Format

Authorization Form

A perspective of net tax collection and federalized public spending in Mexico

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Abstract

In the year 2015, tax revenues accounted for 86.9% of the federal taxable income. That is, almost 87 cents of each peso of the resources that subnational governments can participate come from federal taxes. In the present work an analysis of the behavior of both net tax collection and federal subnational expenditure in Mexico for the period 2009-2015 is carried out. A data panel with information on the net fiscal revenues that the federal government collected in the 32 Mexican federal entities as well as the federalized expenditure exercised in those territories. The multiple regression technique is used considering fixed effects in the cross sections to estimate the elasticity or sensitivity of federalized spending in relation to the main sources of net fiscal revenues of the federal government. The results allow to verify that the coefficients of the elasticity of the federal taxes in relation to the federal expenditure are different depending on the type of source of tax revenue or tax in question.

Tax Collection, Federal Spending, Fiscal Coordination

Citation: VALENZUELA-REYNAGA, Rodolfo & HINOJOSA-CRUZ, Adriana Verónica. A perspective of net tax collection and federalized public spending in Mexico. RINOE Journal- Public economy. 2017.1-1:1-9

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1. Introduction

The fiscal decentralization implies that the national and municipal governments have a greater participation in public spending and, in turn, they are conferred greater tax powers. However, in the Mexican case, local public finances increasingly participate in total public spending, but the same dynamics in terms of generating their own income are not observed.

This work starts by highlighting the problem of research, which is in the field of federalized public expenditure as the net tax collection. Afterwards, the aspects that technical support to research has contributed are exposed. Then we describe the methodology used to check the hypothesis that has been raised. Finally, an exhibition of the results is presented, as well as a presentation of the conclusions of the study.

1.1 Justification

The behavior of the tax collection has effects on the federalized spending that is exercised in the states. However, federal tax revenues are originated from the collection of a variety of taxes. Then, the adjustments made to the rates, the taxable bases and other aspects of each of the tax sources could have different implications for the levels of federalized spending. On the other hand, it is convenient to know what are the implications of the modifications of the components of net tax collection on federalized public expenditure to determine if the current fiscal pact complies with the constitutional principle of proportionality and thus demonstrate the compensatory aspect of federal spending Additionally, the reforms made to the laws and other regulatory schemes in federal fiscal matters must be carried out based on studies that demonstrate the relevance of such adjustments and the consequences they will have on public spending and, therefore, on the country's socioeconomic development.

1.2 Problem

The federal transfers that the central government sends to the states and municipalities in Mexico, within the framework of the National System of Fiscal Coordination (SNCF), assume a double function: compensatory (resarcitoria) and compensatory (compensatoria). The first is linked to the return of public resources that the federal government makes by virtue of the cession of tax powers that subnational governments have made through the fiscal pact; that is, in exchange for the federal government collecting certain taxes in the state territories and that the entities have eliminated the collection of the same on their own account, the local public finances periodically receive federal transfers that form a fundamental part of their ordinary public income.

The compensatory aspect is associated with the purpose of granting greater resources to the regions with greater socioeconomic lags and in this way improving the distribution of national wealth with the objective of reducing horizontal gaps; in other words, to reduce the inequality between the states.

Of course, the compensatory nature of federal transfers implies that the income that has been obtained through tax collection in those entities with lower levels of economic activity, in relation to the rest of the states, are lower than the resources that the federal government transfers to them. This would have to suppose a opposite situation for the entities with greater dynamism and economic growth; that is, in the latter case, the amount of transfers that the central government makes to the subnational treasuries would possibly represent a quantity of resources lower than the federal taxes collected in those states.

On the other hand, public spending that originates in the federal sphere is sensitive to the adjustments that appear in the income from federal tax sources. In other words, the resources that the central government obtains through the collection of direct and indirect taxes determines, to a certain extent, the level of federal public spending applied in the state territories. Additionally, given the fall in production and in international oil prices, public revenues from the sale of crude oil have decreased.

According to data from the Ministry of Finance and Public Credit (SHCP) in 2015, the main components of the federal revenue collection were tax revenues with 86.9% and oil revenues with 13.1%; As for the main parts that make up tax revenues, the source that provides the greatest amount of resources is the income tax (ISR) with 46.3%, the value added tax (VAT) with 34.1%, the special tax on production and services (IESP) participates with 16.6%, taxes on foreign trade with 2.1% and, finally, taxes related to the sale of new cars with 0.5%. By virtue of the above, it is convenient to clarify what are the implications of adjustments in the different components of net tax collection on federalized public spending in Mexico?

1.3 Hypothesis

Federalized public expenditure responds differently to adjustments in the different components of net tax collection.

1.4 Objectives
1.4.1 General Objective

Check the relationship between the most representative components of net tax collection and federalized spending in Mexico during the 2009-2015 period to estimate the elasticities between the main federal tax revenues and the public expenditure applied in the state territories.

1.4.2 Specific Objectives

–   Identify the federal entities in which the amount of the net tax collection of federal taxes is greater than the federalized expenditure exercised in those states in nominal terms
–   Identify the federal entities in which the amount of the tax revenue net of federal taxes is less than the federalized expenditure exercised in those states in nominal terms.
–   Determine the elasticity of the main components of federal net tax collection with federalized public spending.

2. Theoretical framework

There has been a broad debate regarding the functions that each government order must perform in federal systems. In the fiscal aspect, there must be, without a doubt, an integral coordination that allows to make efficient the provision of public goods as well as an appropriate promotion of growth and socioeconomic development.

The decisions that are assumed in tax collection will inevitably have consequences on the economic dynamics of individuals, organizations and, in general, the country. A classic author in the field of public administration, Oates (1968) points out that, just as with people, capital is usually sensitive to the fiscal management that is given in the local territory; therefore, an entity would face the risk that companies that are already operating in its territory could change their location to other regions in case of establishing a strong tax related to productive activity.

The federal government should take charge of mobile income sources as well as those that have a greater redistributive potential; in addition to those resources that are distributed unequally among the states (Flores, 2002).

Public spending is an important instrument to promote economic growth and human development, and the main mechanism available to societies to promote their equity (Scott, 2011: 2). The differences between the tax or fiscal power and the expenditure responsibilities that have been conferred on the three levels of government have led to the emergence of a significant fiscal gap between the federal government and subnational governments in Mexico (Hernández & Villa Sánchez, 2010: 116). This allows us to affirm that public spending, regardless of the governmental order that exercises it (federal, state or municipal), plays a transcendental role in the economy and in society in light of the multiple aspects of the daily life of the inhabitants of any territory that are linked with the application of public resources.

Now it is convenient to elucidate around the question of the income tribunes; that is, from a simple perspective, the federal government exercises public spending, but the amount of this will have to be closely associated with the sources of disposable income. One of them, in fact the most important one, is the tax collection, that is, the public revenues from the exercise of the tax powers of the federal government.

In the Mexican case, the development model implemented in the mid-twentieth century and that was supported by protectionist policies and subsidies generated distortions in the fiscal area causing low taxes to be collected and not all citizens to pay what was due them (Mayer-Serra, 2014: 20). An essential aspect to clarify is the concept of participatory federal collection, which will be the one obtained by the federal government for all its taxes, as well as the mining rights, decreased with the total of the returns for said contributions (Fiscal Coordination Law, 2016). This same legal instrument indicates that the General Fund of Units will be constituted with 20% of the federal tax collection.

In the case of ISR, which by the way is the most important in Mexico for the amount of public revenue it represents for the federal government, it should be for Latin America one of the fundamental pillars of the tax system of the countries of the region; however, its collection potential is almost totally wasted (Corbacho, Fretes & Lora, 2013: 10).

In relation to empirical studies that analyze tax issues and public spending, Cárdenas, Ventosa-Santaulària & Gómez (2008) develop a paper in which they estimate the long-term income elasticity of tax revenues in Mexico; they infer from the analysis the elasticity of the federally-participable collection in relation to the gross domestic product. Among the main results are that the Mexican tax system is not effective in converting economic growth into more public resources for states and municipalities. However, they find that federal transfers do not fall more than proportionately during phases of economic slowdown.

Caballero & López (2012) study the relationships between private investment decisions, tax collection and public expenditure; they use a model with panel data for the period 1998 - 2008. They locate, among other findings that ISR and VAT discourage private investment but the fiscal effect is positive.

3. Methodology

This section describes the methodological aspects of the research.

3.1 Type of research

It is a quantitative and not experimental research. Also given the proposed hypothesis, the study assumes an explanatory nature.

3.2 Data and method

A data panel composed of 224 observations was built, integrating cross-sectional information from the 32 Mexican federal entities for a seven-year time series (2009-2015 period). The dependent variable is the federalized public expenditure, which was made up of the sum of the resources that the federal government exercised in the study period in all the federal entities under the following concepts: federal participations, federal contributions, resources for the health protection, wage provisions and other subsidies, decentralization agreements and reassignment agreements.

The independent variables are represented by the most representative components that make up the net fiscal collection. We used the linear regression technique considering the least ordinary squares method. Additionally, the data were restated in terms of logarithms with the purpose that the coefficients of the parameters can be interpreted as elasticities. The equation that was estimated is the following:

$$GF_{it} = \beta_0 + \sum_{j=1}^{k} \beta_j X_{jit} + \mu_{it} \qquad (1)$$

Where:
GF_{it} is the federalized expense exercised in entity i during year t.
X_{jit} is a vector of independent variables with data for entity i in year t, based on net tax revenues from the collection of ISR, VAT, IEPS, tax on new cars (Autos_N), taxes on foreign trade (Comer_Ext) and Accessories.
μ_{it} = error term
i = entity (i = 1, 2, 3…, 32)
t = year (t = 1, 2, 3…, 7)

In order to control the individual effects, the technique of fixed effects is applied to the cross sections. The maximum likelihood test is used for the redundancy of the fixed effects and thus be able to affirm that the fixed effects of the entities are different.

4. Results

The federal entities in which the net tax collection (RFN) was greater than the federalized expenditure (GF) applied in their territories, in average nominal values for the period 2009 - 2015, are: Mexico City with 740,726 million pesos, New León with 91,798 million pesos, Tamaulipas with 86,995 million pesos and Colima with 29,009 million pesos.

In the rest of the estdaos of the country, that is to say, in 28 federal entities the federalized expenditure was higher than the net fiscal collection. Table 1 shows the descriptive esadistic of the variables that make up the model.

Variable	Average	DS	Range
GF	40,235.8	30,782.9	173,759.8
ISR	28,629.8	94,333.3	714,678.9
VAT	19,194.4	50,963.8	359,631.0
IESP	1,459.5	20,554.1	354,399.4
Autos_N	176.8	241.1	1,497.0
Comer_Ext	957.6	2,088.8	11,322.5
Accessories	704.9	1,505.5	10,824.6

Amounts in millions of pesos DS = Standard deviation

Table 1 Descriptive analysis of the variables

It is observed that the standard deviation of ISR and VAT is greater than that presented by GF. This is expected, as the values of the independent variables can report negative data because it is the net collection; that is, unlike federalized spending, in these cases there are refunds of resources to taxpayers. Mexico City and Nuevo Leon, on the one hand, and the State of Mexico and Chiapas, on the other, are the cases of entities in which the difference between net tax collection and federalized public expenditure reaches extreme and opposite values. according to each state in nominal terms. Graph 1 shows the evolution of these indicators, net tax collection and federalized spending, in Mexico City. Although as of 2012 there was an increase in the exercise of federal public resources applied in this entity, the increase in net tax revenues was 53.6% in the same period.
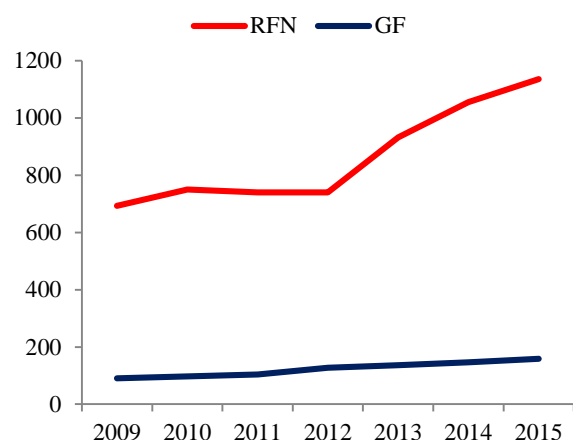
Graph 1 Evolution of the RFN and the GF in Mexico City
Amounts in millions of pesos
Source: Own elaboration with data from the SHCP

In the opposite case, in the State of Mexico a greater amount of federal resources was exercised than those extracted through the collection of taxes. It is appreciated that, despite a fall in tax revenue between 2014 and 2015, federalized spending continued its upward trend. In this entity, the net tax collection had an increase of 70.6% during the study period, while the federalized expenditure reported an increase of 84.0% (see Graph 2).
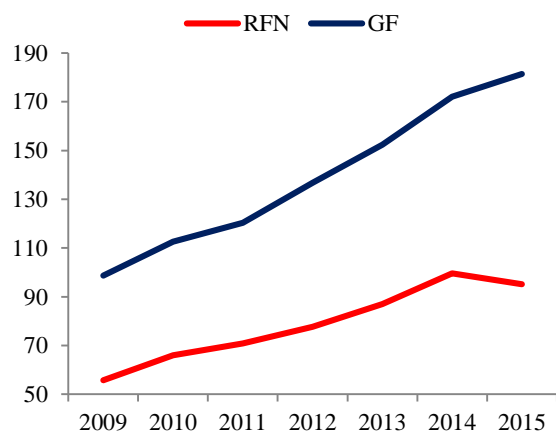
Graph 2 Evolution of the RFN and the GF in the State of Mexico Amounts in millions of pesos
Source: Own elaboration with data from the SHCP

Graph 3 shows that in the case of Nuevo León, as in Mexico City, net tax revenue greatly exceeded the level of federal spending exercised in the Neolonian territory. In the period 2009 - 2015 the application of federal resources in the state increased, in percentage terms, by 83.1%. For its part, net tax revenue increased by 106.2% in the same period.

Graph 3 Evolution of the RFN and the GF in Nuevo León.
Amounts in millions of pesos
Source: Own elaboration with data from the SHCP

Chiapas is the second federal entity at the national level in which the difference between net tax collection and federalized spending is greater. The tax revenues collected by the federation grew, from 2009 to 2015, by 43.9% while the federalized expenditure increased by 84.8% (see Graph 4.)

Graph 4. Evolution of the RFN and the GF in Chiapas.
Amounts in millions of pesos
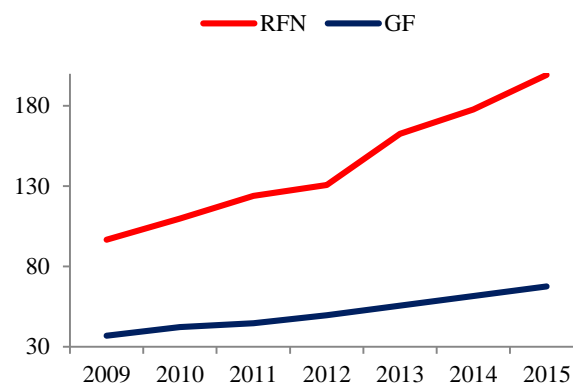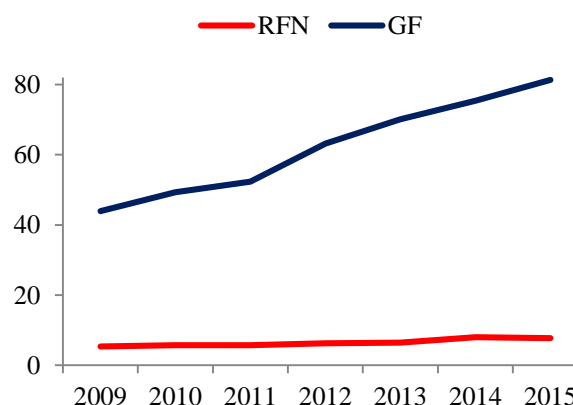*Source: Own elaboration with data from the SHCP*

Table 2 compares the levels of net fiscal collection and federalized spending for the year 2015. The cases of federal entities in which the net tax collection, that is, the tax revenues collected by the federal government in their territories are remarkable. represents a minimum proportion of federalized spending.

In Guerrero, this proportion is 8.2%, that is, for every eight cents that the federal government collects in this state, it exercises 1 peso through federalized public spending. In Chiapas, Oaxaca, Durango, Tlaxcala and Zacatecas that ratio is 9.5%, 9.6%, 9.9%, 11.1% and 11.7% respectively.

Entity	RFN	GF
Aguascalientes	14,607.8	19,421.4
Baja California	54,359.2	43,443.6
Baja California Sur	5,488.3	13,656.5
Campeche	8,111.7	20,596.6
Ciudad de México	1,135,903.1	158,346.3
Chiapas	7,702.9	81,268.1
Chihuahua	46,823.6	44,911.6
Coahuila	26,027.8	36,239.5
Colima	67,015.5	13,534.8
Durango	2,980.0	29,975.9
Guanajuato	29,406.5	64,812.3
Guerrero	4,671.2	56,711.5
Hidalgo	6,431.1	41,893.8
Jalisco	68,127.1	88,585.3
México	95,141.7	181,412.0
Michoacán	54,157.4	58,800.5
Morelos	7,673.4	26,519.6
Nayarit	3,239.6	20,349.0
Nuevo León	199,180.5	67,435.3
Oaxaca	5,948.2	62,238.1
Puebla	25,386.3	76,839.3
Querétaro	24,276.4	26,894.0
Quintana Roo	17,560.7	21,969.7
San Luis Potosí	10,400.0	38,405.7
Sinaloa	29,523.0	43,856.0
Sonora	29,106.2	43,579.5
Tabasco	12,208.7	43,222.4
Tamaulipas	183,422.1	48,206.9
Tlaxcala	2,107.4	18,994.7
Veracruz	175,031.4	100,626.0
Yucatán	11,520.6	30,370.0
Zacatecas	3,144.3	26,940.6

Table 2 Net tax collection and federalized spending by federal entity in 2015 Amounts in millions of pesos RFN: Net tax collection; GF: Federalized spending
Source: Own elaboration with data from the SHCP

Figure 1 shows the proportion that represents the net fiscal collection with respect to the federalized expenditure in 2015 in each federal entity. It is observed that in seven state territories this indicator was higher than 100%. In the case of nine states, this ratio assumed a value between 50% and 99%; in eight it was between 20% and 49% and, finally, in eight other entities the net tax collection represented less than 20% of the federalized expenditure exercised in each of its territories.
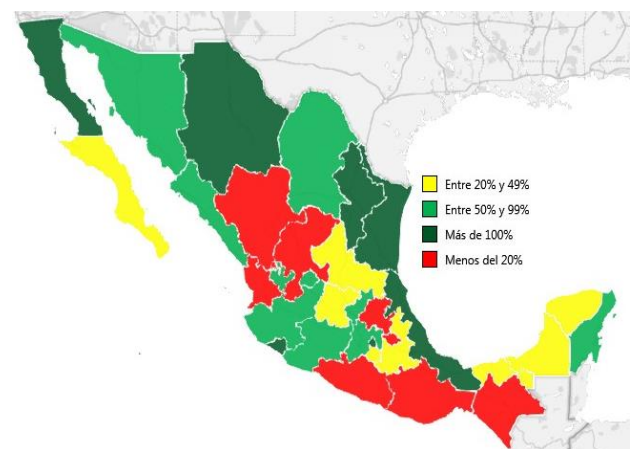
Figure 1 Ratio of net tax revenue to federalized expenditure in 2015
Source: Own elaboration with data from the SHCP

On the other hand, in relation to the coefficients of the regression model, Table 3 shows the results corresponding to the return variables ISR, VAT, IESP, new cars, foreign trade and accessories. It should be noted that, given that the data are expressed in logarithms, the results show the magnitude of the elasticity that each component has with federalized spending.

Variable	Elasticity
ISR	0.458729
VAT	0.067949
IESP	0.001026
Autos_N	0.212933
Comercio_Ext	0.000878
Accessories	0.018803

Dependent variable: Federalized expenditure
Method: Data panel with MCO

Table 3 Elasticities of the components of net tax collection with federalized spending
Source: Own elaboration using EViews 8

According to these results, federalized spending is more sensitive to variations in ISR, in tax revenues generated by the sale of new cars and in VAT. Regarding the measurement of the effects that the changes in tax collection levels cause in federalized spending, it is observed in Table 4 that for every million pesos that income from income tax is adjusted, federalized spending will have to be modified in 280,000 pesos.

As for VAT, an increase in federalized spending of 177,000 pesos per million pesos is estimated, which increases the net collection from this tax. The IESP was not significant; However, because it is a population study, it could be unnecessary to test hypotheses for these coefficients, so it would be assumed that an adjustment of one million pesos in the income generated by this tax would have to modify the cost of the federated 12,703 pesos. Finally, for each million pesos that vary the tax revenues generated by foreign trade, it is estimated that federalized spending varies by two million 133 thousand pesos.

Variable	Coefficient
ISR	0.280729***
VAT	0.177186***
IESP	0.012703
Comercio exterior	2.133077**

*** = significativo al 99%; ** = significativo al 95%;
* = significativo al 90%
Variable dependiente: Gasto federalizado.
Método: Panel de datos con MCO.

Table 4 Regression coefficients using nominal data
Source: Own elaboration using EViews 8

Con el propósito de asegurar que emplear el método de efectos fijos en las secciones cruzadas es apropiado se aplica el test de máxima verosimilitud (ver Tabla 5).

Fixed effects test	Elasticity model		Model of effects	
	Statistical	Prob.	Statistical	Prob.
F	131.49	0.000	60.9992	0.000
Chi-square	587.95	0.000	536.9932	0.000

Tabla 5 Pruebas redundantes de efectos fijos en las secciones transversales

By virtue of the above (p-values less than 0.01) it can be affirmed that the fixed effects of the states are different with 99% confidence, which guarantees that controlling the individual effects in the cross sections is pertinent and methodologically acceptable.

5. Conclusions

The study of public finances reveals the need to have permanent, updated and methodologically appropriate analyzes of the reality of public revenues and expenditures. In this case, the work addresses aspects of the behavior of net tax collection in Mexican federal entities as well as the federalized spending that is exercised in them.

We identified those cases in which the federal government applies a lower amount of public expenditure than the amount of resources it collects. However, it is convenient to clarify that some situations have a clear explanation about these differences. For example, in Mexico City there is the tax domicile of a large number of taxpayers even when they locate their production plants in other entities. The same happens with Tamaulipas because of its condition of being part of the border and something similar happens in Colima, when receiving a large amount of products from Asia.

It also detected those entities in which federalized spending is, by far, higher than the net tax collection. This could revive the debate about the inequity that exists in terms of exercising federal resources in the state territories in relation to the tax revenues they generate. However, it is pertinent to emphasize the compensatory qualities of federal transfers; that is, contribute to the reduction of gaps between the regions. On the other hand, the central hypothesis of the study was tested, which proposed that the sensitivity of federalized public spending with respect to the main components of net tax collection was different.

The results show that, effectively, federalized spending maintains a different elasticity with each of the sources of tax revenues that represent the different types of taxes Finally, given the findings located in this paper, it is suggested the development of studies on the behavior of net tax collection and its relation to the local circumstances of each federal entity in order to clarify whether the socioeconomic reality explains the level of federal tax revenues generated or, failing that, there are areas of opportunity in the actions of control and control by the competent authorities.

6. References

Caballero Urdiales, E., & López Gallardo, J. (2012). Gasto público, impuesto sobre la renta e inversión privada en México. *Investigación económica*, *71*(280), 55-84.

Cárdenas, Ó., Ventosa-Santaulària, D., & Gómez, M. (2008). Elasticidad ingreso de los impuestos federales en México: efectos en la recaudación federal participable. *El trimestre económico*, 519-531.

Corbacho, A., Fretes Cibils, V., & Lora, E. (2013). Recaudar no basta: Los impuestos como instrumento de desarrollo (Resumen ejecutivo).

De la Federación, D. O. (2016). Ley de Coordinación Fiscal. *Última reforma publicada*.

Flores, M. D. (2002). Federalismo fiscal y asignación de competencias: una perspectiva teórica. *Economía Sociedad y Territorio*.

Hernández, D. E., & Villa Sánchez, S. (2010). El modelo de relaciones intergubernamentales en la descentralización fiscal en México. *Si Somos Americanos, Revista de Estudios Transfronterizos*, *10*(1).

Instituto Nacional de Estadística y Geografía. (2017)."*México en cifras. Anuarios estadísticos*" [base de datos en línea]. México. http://www.beta.inegi.org.mx/app/areasgeografi cas/?ag=01# [fecha de consulta: 22 de febrero de 2017].

Mayer-Serra, C. E. (2014). Progresividad y eficacia del gasto público en México: Precondición para una política recaudatoria efectiva. *Woodrow Wilson Center, Latin American Program*.

Oates, W. E. (1968). The theory of public finance in a federal system. *The Canadian Journal of Economics/Revue canadienne d'Economique*, *1*(1), 37-54.

Scott, J. (2011). Gasto público y desarrollo humano en México: análisis de incidencia y equidad. *Documento de trabajo para el informe sobre desarrollo humano México, Informe sobre Desarrollo Humano México*.

Secretaría de Hacienda y Crédito Público. (2017). "Estadísticas oportunidad de finanzas públicas" [base de datos en línea]. México. http://www.shcp.gob.mx/POLITICAFINANCI ERA/FINANZASPUBLICAS/Estadisticas_Opo rtunas_Finanzas_Publicas/Paginas/unica2.aspx [fecha de consulta: 22 de febrero de 2017].

RINOE Journal- Public economy

Analysis of the relationship between the financial and productive sectors, in the context of the financialization process of the Mexican economy

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Abstract

During the last decades, the Mexican Financial System has undergone several reforms aimed at promoting its development; According to the McKinnon-Shaw theorem, should represent a number of positive impacts on the productive sector, and thus on the entire economy. It is considered that maintaining a restricted financial system represents multiple obstacles to economic growth and development. Thus, it is possible to understand the process of financial liberalization, carried out during the eighties; However, through statistical analysis it is possible to determine; Not only that the expected positive relationship between the sectors involved, has not been able to be configured in the case of the Mexican economy, but also, the financial sector shows a greater development, compared to the productive sector; Which contrasts with orthodox theory and represents a fundamental feature of the financiarization process.

Financiarization, Economic Growth and Finacial Development

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1. Introduction

The process of financialization in the case of the Mexican economy is based on the implementation of a series of large-scale economic reforms that were part of the process of adopting the neoliberal growth model. Among these reforms, the liberalization of the Mexican financial system (MFS) stands out, whose effects not only covered the financial sphere, but also had repercussions on the productive sector. In fact, one of the main arguments behind this reform was the boost it would represent for the productive sector; since the MFS in the early eighties, was not only considered obsolete, but was identified as a serious obstacle to the economic growth of the country, so it was necessary to transform.

The previous, under the logic of the theorem of Mckinnon (1973) and Shaw (1973), according to which, a restricted financial system, through interest rate caps (active and passive), forced channeling of credit, legal reserve, among other measures; it inhibits the performance of the economy as a whole, by hindering savings and the efficient allocation of capital to the most productive investments. That is, these authors argue that the deregulation of financial transactions allows prices to freely determine savings and investment, stimulating long-term economic growth.

On the other hand, a process of commercial opening was carried out, which was another of the great reforms derived from the adoption of the neoliberal model; that supposed a restructuring of the national productive apparatus; that went from an industrialization model by import substitution, to one oriented mainly to exports, with the objective of taking advantage of the benefits of the free market.

In this way, both the financial sector and the productive sector were subject to a profound transformation; in both cases, with the aim of creating a period of sustained growth; result of the correct interaction between both sectors.

In this sense, there are various aspects that link these two sectors; for example; it was expected that the development of the financial markets would represent a new space for obtaining profits from the companies, which in this way could carry out more ambitious investment projects; that is, productive investment would benefit. On the other hand, competition within the banking sector would promote a reduction in the cost of credit granted to the productive sector, therefore, companies would have a better and greater access to financing of this type.

Similarly, derived from the development of the financial sector; the stock market sector could finally be constituted as a real financing option for companies, which could thus attract private capital, both national and foreign. In addition, it was considered that greater financial depth would also improve the population's access to credit; what would allow the constitution of a powerful internal market; which, in turn, would imply a series of positive effects on the industrial fabric.

That is to say, the reasons for which the development of the financial sector has the capacity to positively influence the productive sector are diverse; Therefore, although it is true, the growth rate of both sectors should not be exactly the same; at least yes it should present a similar behavior; therefore, it could be expected that the abrupt development of the financial sector would be accompanied by a similar one in the productive sector. In this sense, and with the objective of evaluating this supposed positive relationship between both sectors; In the present work, the behavior of each of them is analyzed separately; starting with the productive sector.

In this way, it will be possible to determine if the performance of this sector is similar to that of the financial sector in recent years. That is, if the reforms, responsible for the abrupt development of the financial sector, have generated the expected effects on the productive sector.

2. Evolution of the Mexican productive sector

It should be remembered that one of the characteristics shared by the now developed countries is that at some point in their history, they went through intense periods of internal industrialization via the introduction of industries with increasing profits and maintaining productivity gains in the form of progressive salaries. Therefore, industrialization should not be seen as an end in itself, but as the main means to take advantage of the benefits of technical progress, and thus achieve true economic growth and development (Prebisch, 1950).

Therefore, the growth of the industrial sector, mainly manufacturing, acquires great relevance, given its influence on the growth of the economy as a whole. That is, the importance of these processes is clear, however, the guidance they must follow is not so much, in fact, it is precisely in this aspect that the theoretical discussion on the subject has focused during the last decades.

In the case of Latin America; The Great Depression and the Second World War led to forced internal industrialization until the 1980s. Under the import substitution model, Mexico experienced an average growth of Gross Domestic Product (GDP) of 6.1% between 1942 and 1982, while from 1983 to 2016, the figure was 2.3% (INEGI, 2016). However, the model was blamed for the low growth during the seventies; the situation was blamed for the external restriction, the lack of savings and the excess of government spending.

Given this, the response was the model of export-oriented industrialization, since the belief was generalized that only by promoting the development of the export sector would a detonated stage of sustained growth really be achieved. This, under the logic that exports would generate a growth in the demand for domestic inputs; they would increase the national income, as much by the income coming from the exports, as from the greater internal demand of inputs; and they would also increase aggregate demand and, therefore, the production of consumer goods.

In addition, to become an important source of foreign exchange for the importation of intermediate goods and capital, necessary to face the increase in domestic production. This should translate into greater stability, which would promote investment, which when combined with significant growth in production, would allow the exploitation of economies of scale and technological development. (Cabrera, 2006)From then on, not only commercial opening was encouraged, but also financial deregulation, under the logic that capital would flow to countries where the value of marginal productivity was high, contributing to the homogenization of the variable.

Thus, the benefits of globalization were based on the profits of trade and on the optimal global positioning of resources. Likewise, an accelerated privatization process was promoted, under the argument that the private initiative would achieve a more efficient allocation of productive factors, which was considered to be the core of export-oriented industrialization. The process of deregulation and trade liberalization was carried out in three stages, the first consisting of the unilateral elimination of the previous import permits on 80% of the tariff fractions and the entry in 1986 of the General Agreement on Tariffs and Trade (GATT).

The second was linked to the stabilization program (Economic Solidarity Pact) because it was argued that external competition would contribute to the reduction of inflation by means of the "one-price law", with which it was intended to set a limit to the prices of marketable goods and, at the same time, reduce the cost of intermediate goods. And the last one was characterized by the strengthening of bilateral relations with the main trading partners, among which the signing of the Free Trade Agreement between Canada, the United States and Mexico stands out (Kregel, 2009).

In this way, in the first years of the eighties, a restructuring of the national productive apparatus began, whose development was subject to the growth of the export sector. However, the horizontal geographical division of production meant that many processes were reduced to the assembly of imported semi-finished goods, with which the salary distribution became the only benefit for the country, which was also forced to maintain low wages. to continue attracting foreign investment, which due to the characteristics of the country increased the imported content of exports (González, 2010).

Authors such as Kregel (2009), Molina and Zárate (2009), maintain that this investment, despite increasing the level of exports, has not only failed to generate productive linkages forward and backward, which was promoted under the model of import substitution, but also intensified the process of repatriation of profits. What questions the argument about the need for underdeveloped countries to receive resources from abroad to achieve a period of sustained growth.

In addition, these authors point out that the great unemployment of internal resources in these countries constitutes an unequivocal sign of the structural imbalance resulting from the scarce development of the industrial sector, which paradoxically is the result of the prevailing industrialization model. Therefore, the problem can not be solved with external financing in the absence of a plan to build an internal industry that gradually replaces imports of capital goods and restricts imports of consumer goods in the medium term.[1]

In addition, the lack of a strong industrial sector not only promotes a greater supply of unskilled labor, and depressed wages; It also makes any fiscal impulse unviable to generate a period of sustained economic growth, given that the effects of this impulse will end up escaping through the increase in the level of imports.[2]

Therefore, it is imperative to evaluate if the export-oriented development strategy has succeeded in triggering a true industrialization process, which will allow the country to overcome its structural problems, and in this way, advance on a path of sustained growth in the long term. To do this, we must establish the impact that this strategy has had on the composition of the production structure, placing special emphasis on the behavior of the manufacturing sector, given its ability to drag the economy as a whole. And since the increase in the level of exports is generally used as an argument for the proper functioning of the prevailing industrialization model; the analysis begins, precisely for that aspect.

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[1] If domestic resources were fully utilized, the reason for attracting external capital is greatly reduced. It must be remembered that foreign capital can only contribute to the growth of the country, if it allows the increase of exports and the reduction of imports, which would make it possible, on the one hand, to amortize and pay interest on past debts, and on the other hand, strengthen the national productive fabric (González, 2010).

[2] According to Furtado (1963), the Keynesian multiplier loses validity in the case of developing economies, given the high dependence on imported capital goods that present.

The percentage of participation of Mexican exports in the global total in 1983 was 1.41%; a decade later it had not changed; for 2003 it reaches its highest level, 2.24%; in 2011 it is reduced to 1.96%; and finally, in 2014, the percentage is 2.1%. On the other hand, Mexico's participation in merchandise imports worldwide, which in 1983 barely meant 0.66%; it presents a significant growth in the following decade, reaching 1.78%; reaching its maximum level also in 2003, with 2.27%; decreasing to 2% in 2011; while in 2014, the percentage is 2.2% (WTO, 2016). That is to say, there is indeed a growth in the level of exports, but it should not be omitted that it has been accompanied by an even greater increase in the level of imports, which is evidenced in figure 1, at least in what refers to the Manufacturing sector.

In addition, changes in the aggregate value added of manufactured goods exported must be considered, which during the eighties was 23.2%, and that for the second decade of the new millennium was reduced to 17.5%; Therefore, it is logical to question whether, in fact, the industrial fabric of the country has been strengthened; given that it is possible to infer that in the increase of Mexican exports; an important percentage is due to activities related to the assembly of intermediate products; characteristic activity of transnational companies (UNCTAD, 2015).
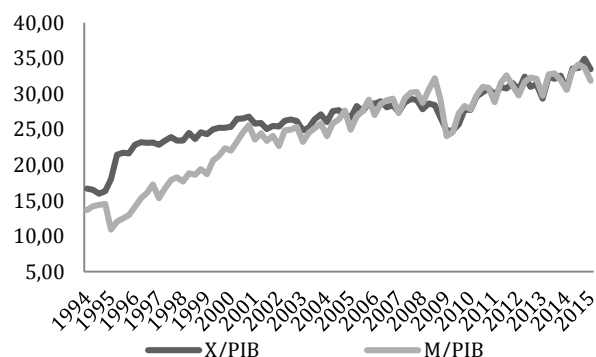
On the other hand, table 1 shows that the participation of the industrial sector in the national GDP has been reduced; which increases the doubts about the efficiency of the new model based on exports, as promoter of an industrialization process. In this sense, figure 2 shows a fall in the share of secondary activities, and those related to manufacturing, in total GDP, that is, the evidence indicates that the expected industrialization process has not materialized; and therefore, the positive effects that should accompany it have not been generated either; for example, the increase in employment levels, not only in quantitative terms, but also qualitatively; which constituted the greatest social benefit.

1970-79	1980-89	1990-99	2000-06	2008	2015
25.5	29.8	27.4	26.3	24.3	23.7

Table 1 Percentage of the industrial sector in GDP. México
Source: Own elaboration based on UNCTAD, Handbook of Statistics (2015)

However, neither in this aspect, the evidence is satisfactory, and that is that the population occupied in secondary activities decreased from 1990, year in which it achieved its maximum level (27.79%), because for 2015, the percentage was 24.7 %, unlike the population occupied in tertiary activities, whose growth is remarkable; not to mention the rapid growth of informal activities that the country has registered (ENOE, 2016).

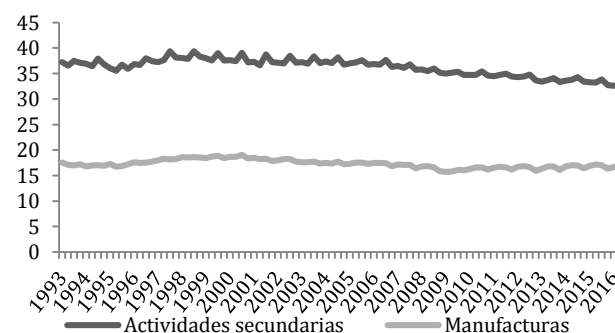**Figure 1** Exports and imports of Mexico (% GDP)
Source: Own elaboration based on OMC Report on trade and international agreements (2016)

Figure 2 Secondary and manufacturing activities (% GDP)
Source: Own elaboration based on INEGI (2016)

The above is related to the evolution of manufacturing production in recent decades; in which it has not managed to recover the growth rate that it showed in 1979 (10.9%), or in 1996 (9.36%); and that for 2014 it was only 2.5%; that is, in this case, the rate of growth has also weakened, as well as in the case of exports (see Annex 1).

Therefore, considering the data so far shown, it is difficult to maintain that the increase in the volume of exports has been sufficient to trigger a phase of sustained growth; In fact, it has not been able to strengthen the manufacturing sector.
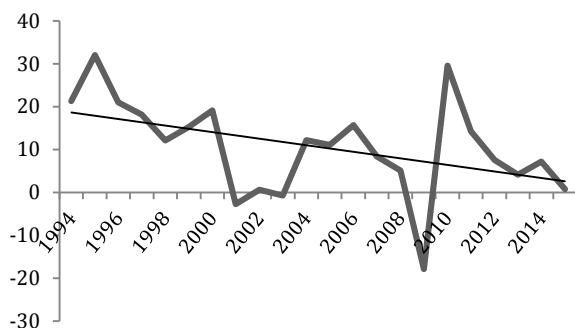

Figure 3 Percentage variation of manufacturing exports. México
Source: Own elaboration based on WTO Report on trade and international agreements (2016)

In fact, according to González (2010), this sector has experienced a process of involution; not benefiting from the increase in the level of exports, which is due to its lack of competitiveness against transnational companies. Figure 4 shows the evident reduction in the number of establishments related to the manufacturing sector.
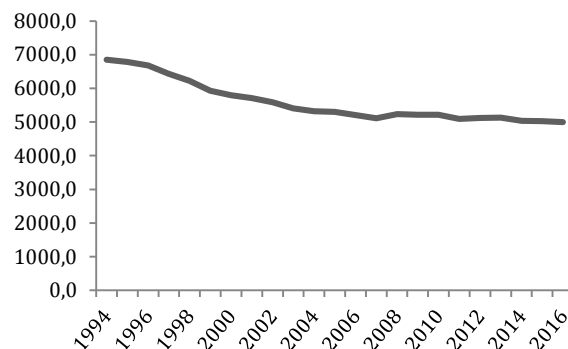

Figure 4 Number of establishments in the manufacturing sector
Source: Own elaboration based on BIE-INEGI (2016)

Based on similar analyzes, authors such as González (2010) have argued that during the last decades, a deindustrialization process has been configured in the Mexican economy; which would explain the erratic behavior in the growth rates of the different industrial branches.

For example, the food industry, in more than a decade has not managed to match, the growth shown in 1998 (6.6%); the textile branch achieved a growth rate of 15.7% in 1996, after which it dropped to -23.9% in 2009; the wood sector obtained a growth rate of 6.9% in the year of 1996, before decreasing in 2014, to -0.65%; the paper branch achieved a growth rate of 12.7% in 1997, and subsequently decreased to -7.2%, in 2009, to stand at 3.14%, in 2014.

For its part, the chemical industry achieved a growth rate of 6.8% in 1997 and then fell to -15.4% in 2009 and 2.11% in 2014; Non-metallic minerals experienced a rate of 8.1% in 1996, to decrease to -8.4% in 2009, while for 2014 the percentage was 1.58%; the metal industries have not come close to the growth obtained in 1996 (18.8%); the case of the branch of machinery and equipment is very similar, in 1996 it obtained 22.3%, and since then not only has it not matched this growth, but it presents negative levels (INEGI, 2016).

The above, generates doubts about the true results of the new model of export-oriented industrialization, since it is not possible to argue forcefully that the manufacturing sector has been strengthened, and with it the productive apparatus in general of the Mexican economy.

The gross fixed investment is another of the variables, whose analysis becomes opportune, given its implications for the development of the national productive sector; its rate of growth has not been able to overcome the two-digit barrier since 1994, when it was 13%; In fact, both in 2001 and 2009, it presented negative levels, -3.29% and -9.21% respectively. This behavior is in no way consistent with the development and growth needs of the Mexican economy, because far from proving that under the new model of industrialization has been promoted the formation of new stocks of capital, necessary for the increase of productivity, of the industrial dynamism, and therefore of the sustained development, both of the economic activity, as well as of the standard of living of the population.

It is evidenced that there is a weakening in the growth dynamics of the variable in question. In addition, the dominance of imports of machinery and equipment with respect to the total is notorious; when the preferable would be the investment in the national type, by the multiplying effects that could generate via productive chains.

In this sense, according to the Economic Commission for Latin America and the Caribbean, the coefficient of gross capital formation also shows a negative trend, corroborating what was stated in the previous paragraph; The national productive apparatus does not show any strengthening, in fact, as already mentioned, there are different authors who point out the configuration of an inverse process, that is, of deindustrialization.

Referred to in Figure 5, which shows the growing trend of the deindustrialization coefficient; built from the relationship between imports, and industrial GDP. This coefficient was 0.26 in 1986, but, as of 1996, imports significantly exceed industrial GDP, which intensified the process in question, reaching the coefficient to be 2.1 in 2015.

It should be noted that in the case of developing countries, periods of industrialization are usually carried out, with a considerable imported component; in the form of raw materials, machinery, capital goods, intermediate goods and consumer goods (Todaro, 2006). However, in the case of Mexico, the fact that gross fixed investment presents a marked decreasing trend, and that the participation of the secondary sector in total GDP, is lower; allows inferring that a process of such characteristics has not been detonated.
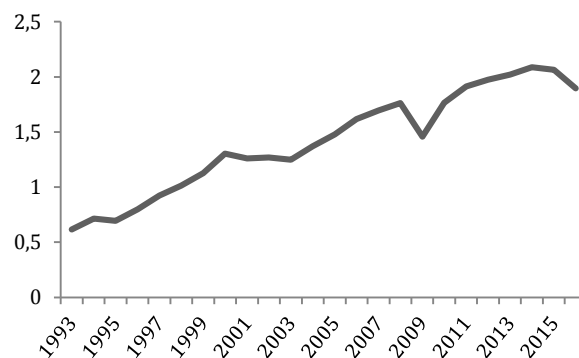
Figure 5 Deindustrialization coefficient
Source: Own elaboration based on INEGI. System of National Accounts (2016)

What has been discussed so far indicates that despite the recommendations of the export-oriented industrialization model were fully complied with; the productive transformation that the Mexican economy went through has not managed to affect the whole economic activity, and therefore has not been enough to overcome the structural problems of the import substitution period. There is a lack of multiplier effects that affect economic growth;

This is due, among other factors, to the type of commercial specialization that has been promoted, based on assembling activities, which limit not only the competence of the national industry, but also the level of participation in the supply of inputs to the transnational companies, which ends up deepening the productive disarticulation and the increasing dependence towards the outside.

And according to Kaldor (1963), Thirlwall (1972) and McCombie (2003), demand from abroad has no effect on economic growth in disjointed economies; which is the case of the Mexican economy; because a gap is created between activities with export capacity and those that are less dynamic; before which, the increase in the volume of exports, is insufficient to trigger a phase of generalized growth. To which also contributes in the case of Mexico, a scarce technological development, propitiated to a certain extent by the prioritization of the advantages associated with labor costs, as an incentive for foreign investment.

According to Cabrera (2006), another characteristic of the Mexican production landscape is that export activities are closely linked to highly importing behavior, given that transnational companies do not find adequate national suppliers to supply their input requirements. That is to say, a set of industries, or highly exporting companies, that do not establish links with the internal dynamics have been promoted, and therefore, they only constitute dynamic branches, but they do not represent an engine for economic growth (Molina and Zárate, 2009).

On the other hand, it must be taken into account that the new industrialization model, accompanied by a process of deregulation and financial liberalization, which among other positive effects.

It was expected to promote better performance of the financial sector; translating into new and better long-term financing mechanisms for companies; which would contribute to the strengthening of the Mexican industrial fabric. This, under the logic that in the absence of financial repression or state coercion, the ideal conditions for the industrialization of an economy are generated, mainly because financial depth is increased, and with this a better allocation of resources is promoted (McKinnon , 1973).

Now is the time to analyze the evolution of the financial sector in recent years; to be able to determine exactly, if the development of both sectors is similar; which would show the existence of a positive link between these, as the orthodox theory maintains; but if it is not, then, you will have an argument in the opposite direction.

3. Evolution of the Mexican financial sector

Historically, the financial sector has had the responsibility to regulate and promote intermediation between savers and debtors; that is, transferring resources from households, businesses and governments that have surpluses (savers), to those that have a deficit (debtors).

For this, a series of financial reforms have been carried out, mainly during the last thirty years; with which it has sought to build a well-capitalized system, with best practices in prudential, risk and accounting matters; whose robustness helps to finance the production, and the investment of the different sectors of society in the most efficient way possible; and that, in addition, be inclusive and have depth to ensure that all segments of the population, as well as companies, can access the services it provides.

The MFS until the beginning of the eighties was characterized by the low development of the stock market and the fact that it prioritized its basic function, that is, to transfer resources from savers to companies; that undoubtedly was altered with the series of changes that it would experience during the following years.

And although these changes were made under the argument of improving financial intermediation; the results in terms of economic growth and development of the national productive sector are in no way as expected, as was concluded in the previous section. What generates serious doubts about the real improvement in terms of financial intermediation.

However, this has not meant that the banking sector or the financial markets have faced a negative period, in terms of profitability, capture, financial margin; among other indicators that will be reviewed below.

3.1 Commercial Bank

Considering the percentage of participation in the total assets of the financial system, commercial banks continue to be the main intermediary; this is despite the fact that this percentage has decreased in recent years, since in 2000 it represented 69.7% of total assets, while in 2016, only 58.7%. On the other hand, development banking went from 22.4% to 10.4% during the same period of time.

Contrary to what happened in the case of the brokerage firms and the Specialized Investment Funds for Retirement Funds (Siefores); that went from 0.6% to 5.2%, and from 7.1% to 25.5%, respectively. It should be noted that during the period in question, the total assets of the financial system show a constant and remarkable growth.

In fact, its average growth rate during the last fifteen years has been 5.64%; while the reference to fundraising is 6.7%, for the same period of time (CNBV, 2016). The increasing behavior of the assets, accounts for the development of the banking sector, which has benefited from the level of concentration that characterizes it, not only in relation to its degree of participation in the financial system, which, as stated above, positions as the main financial intermediary; but also in terms of its composition; since the seven most important banks (Banamex, BBVA Bancomer, HSBC, Banorte, Inbursa, Santander and Socotiabank) have centralized on average over the last fifteen years, 80% of total assets, stockholders' equity and liabilities (CNBV, 2016) .

In this regard, Levy (2009), points out that deregulation and financial globalization in a context of high banking concentration and narrowness of the securities market do not induce the creation of a competitive financial market. On the contrary, it increases the concentration of all financial institutions, which induces a structure of interest rates that threatens economic growth and causes a rentier behavior of financial institutions, reducing credit availability.

And it is that under the current financial structure; the traditional intermediation of commercial banks, which through the mechanisms of regulation and control of credit (legal reserve, credit bins and ceilings at the active interest rate) allowed the financing of the industrialization process; it has been displaced by highly profitable financial operations, such as financial services (sale of insurance, asset management, etc.) and purchase-sale of securities. In parallel, the presence of other non-banking financial institutions, such as the Multiple Purpose Financial Companies, pension funds, investment banks and insurance companies, increased the competition for liabilities and assets.

That in a context of high liquidity (generated by deregulation and financial liberalization), technological innovations, and the absence of control mechanisms, led to the reduction of bank financing to companies, coupled with the increase in investments of banks in synthetic financial instruments. (See Figure 6). However, this reduction in financing to companies has not prevented commercial banks from keeping their income from interest in constant growth, in fact, the average growth rate of these, during the last fifteen years has been 26.5% , while its average financial margin over this period has been 27.5%. Both indicators show the excellent performance that commercial banking has maintained, even in recessive periods to which the Mexican economy has been subject, for example, the 2008 financial crisis (CNBV, 2016).

Similarly, when analyzing interest income, according to the different items that make up the current portfolio of commercial banks, the importance gained in recent years, by credit for consumption, on the commercial type and the regarding housing. It should be noted that the defaulting rate (IMOR) of commercial banks has been 2.6% on average during the last seven years; so it is also possible to infer some security in the loan portfolio analyzed; with certain reservations given the difficulty of interpretation of said index (CNBV, 2016).
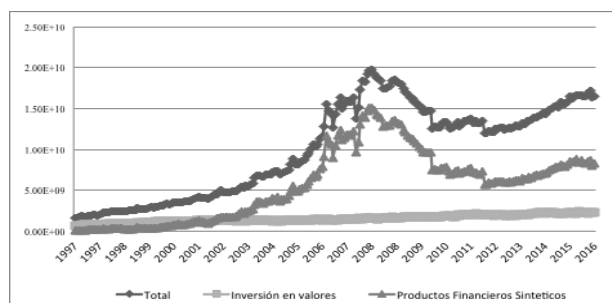

Figure 6 Composition of the resources of the banking sector
Source: Own elaboration based on Banco de México (2016)

However, the foregoing supports what was said by Correa (2006), that commercial banks in Mexico present a series of growth strategies that are due to reasons of profitability exogenous to the development of the national economy, that is, there is no interest, nor commitment to finance the economic development of the country.

It is more important to obtain a high profitability through the management of pension funds or workers' remittances, which expand credit and achieve an effective financial deepening. In addition, the profits obtained by foreign banks in Mexico; that control more than 90% of total assets and profits; they are destined to their respective countries of origin.

In this way, it is possible to explain that despite the low growth registered by the Mexican economy in recent years, the two indicators of financial profitability (ROE-ROA) of the commercial bank, show a positive behavior, as can be seen in the Figure 7. It should be noted that, according to Aglietta (2000), this relationship is one of the main indicators to identify the gestation of a financialization process. Of course, as a result of the financial crisis of 2008, both financial indicators registered a reduction in their levels, however, on average the return on assets was 1.5 over the period in question, while the return on capital invested in average was 14.6, during the same period of time.

In this sense, one of the factors that must be considered in order to understand this good behavior is financial innovation, given that it promoted new activities, of a speculative nature between banks and companies, which evidently offer them attractive profit margins, but which reduce macroeconomic stability.
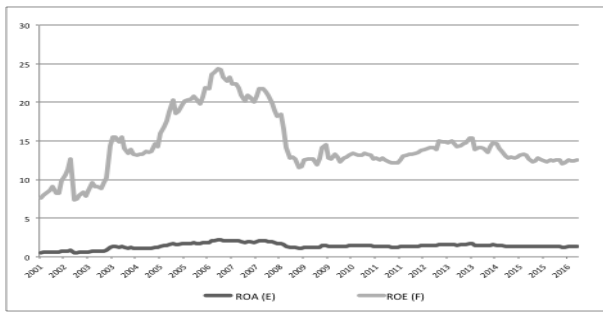
Figure 7 Return on assets (ROA) and on capital invested (ROE)
Source: Own elaboration based on the National Banking and Securities Commission (2016)

This behavior is not endemic to banks; companies, in a context of low economic growth, have increased their investments in financial assets and derivatives, for example; if the volume of derivative transactions is analyzed by type of instrument, only considering the reference to private non-financial companies, it is possible to observe that in the case of swaps, the amount operated by them, went from 437.82 million pesos in January 2007, to 1,074.39 million, in January 2017.

On the other hand, the Forwards went from 527.43 to 6 530.07 million, in the same period; and regarding the Options, its issuance went from 135 to 614.1 million; while the acquisition increased from 185.06 to 742.15 million, during the aforementioned period. Similarly, the volume of operations of the securities market, by type of issuer, shows a growing participation of non-financial private companies, whose total amount in July 2006 was 81,548 million pesos, while for July 2016 , the figure was 180 271 million (Banxico, 2017). This shows the increase in the participation in financial activities by non-financial companies, which not only evidences the development of the financial sector.

It coincides with what authors such as Epstein (2005) and Krippner (2005) say about the potential detraction of resources that such development can mean for the productive sector; that is to say, the productive reinvestment ends up being harmed, given that the companies prioritize their investment in financial instruments such as those previously mentioned. In this sense, synthetic financial instruments accounted for 10.37% of total commercial bank obligations in 1997, and for 2014, the percentage was already 48.28% (Banxico, 2016).

For its part, the capitalization index of commercial banks has been above the minimum requirements of the Basel III Banking Supervision Committee; keeping on average around 16% (CNBV, 2016).

3.2 Stock market sector.

For its part, the stock market was also favored with financial reforms, which is reflected in the price and quotation index (IPC), which went from a level of 145.2 points in 1988, to one of 7 447.1 in 2000, and of 45 642.9 for 2016 (Banxico, 2016).

The growth levels of the stock market contrast with the behavior of the productive sector, in which the first is supposedly based. In this sense, it is enough to analyze the value of the operations carried out in the capital market, whose behavior is growing, in fact, its average growth rate between 1986 and 2016 is 10.6% (Banxico, 2016). While the value of the shares in circulation in the Mexican Stock Exchange (BMV), which is another of the main indicators to determine the behavior of the stock market, shows a remarkable growth during the same period; it is worth mentioning that the average growth during the period considered is 2.65% (CNBV, 2016).

The foregoing shows the increase in terms of importance acquired by the stock market intermediation; with which the architecture of the financial system has been altered, for example, according to López (2009), this has contributed to the fact that banks fulfill to a lesser extent their traditional function of granting credit to productive activities, while raising their securities issuance and trading operations.

This is partly due to the fact that not always the most profitable investment option is found in production, since speculation would change, administration of the payment system and consumer credit, offer important returns, and even more, in a context of deindustrialization and scarce economic growth, such as that presented by the Mexican economy.

And it is that the theoretical framework behind financial liberalization and deregulation omitted a basic aspect of financial institutions, but that it is essential to understand their evolution detached from the national productive sector; it is about the constant search by these of a higher rate of profit, and for which they are capable of modifying their mechanisms of capture and channeling of resources, if the conditions so require it.

In this sense, it is important to consider the growth of the derivatives and debt markets; the first step of representing 0.07% of the total assets of the stock market in 2007, to 8.65% in 2016; while the second one has a constant growth rate during the last years (CNBV, 2016). However, while it is true that the stock market has grown significantly during the last two decades; its size remains relatively small, particularly the capital market; regarding the banking sector.

4. Conclusion

Throughout this work, two lines of research were developed; the first one related to the national productive apparatus and its evolution over the last years; and the second, focused on the analysis of the behavior of the financial sector. This to determine if the levels of development of both sectors are similar, as established by orthodox theory. In this sense, it was shown that the new industrialization model implied a restructuring of the national productive apparatus; and that although it is true generated the increase of exports and imports of the country

It proved to be insufficient in the promotion of productive linkages, which would allow the strengthening of the national industry. Indicators such as the participation of the industrial sector in the national GDP, account for the weakening of production that has been exacerbated in recent decades, with obvious social costs, pauperization of working conditions, low wages and increased informal employment. In this way, it is possible to sustain that the productive transformation that meant the new industrialization model, failed to contribute in the levels expected to the development of the national productive apparatus.

This reality contrasts with the results that were expected to generate both the commercial opening and the deregulation of the MFS; In fact, the latter sought, among other issues, to improve the financing conditions for productive investment, and with that, to constitute a positive link between the development of the financial and productive sectors. However, the analysis carried out on the behavior of the financial sector during the last years, allows us to infer that this link has not been achieved in the desired levels; and it is that both in the case of the banking sector and the stock market, the development they have experienced is remarkable.

That is, contrary to what was observed in the analysis of the national productive sector. And to give an account of this, it is enough to review the indicators of financial profitability of the banking sector; both the return on assets (ROA) and the return on investment (ROE) present a positive behavior. And in relation to the stock market, it is enough to review the evolution of the price and quotation index (IPC), whose growing trend is remarkable. Similarly, both the value of the operations carried out in the capital market and the value of the shares outstanding in the BMV show positive and growing behavior; that account for the increase in terms of importance acquired by the stock market intermediation.

Thus, it has been possible to show, on the one hand, the low growth registered by the national productive sector; and on the other, the strengthening of the Mexican financial sector; situation that contrasts with the expected results. It should be noted that in developed countries, with fully established financial systems, the links between the two sectors analyzed in this chapter are closer, given the financial penetration shown by their economies; In addition, the statistical information presented, allows a better analysis of the relationship between both sectors. Which explains to a large extent, the fact that most of the works on the subject are carried out for this type of countries.

And although it is true, the foregoing, represents a series of complications when analyzing the process of financial financialization for the case of developing countries, which do not have the aforementioned characteristics; this in no way detracts from the results obtained, which are in accordance with what authors such as Stockhammer (2009), Orhangazy (2008) and Epstein (2005), have indicated for the case of their respective countries of study; that is to say.

That the remarkable development of the financial sector implies a series of risks for the productive sector; essence of the process of financial financialization.

And in this sense, it becomes imperative to address this issue, because although it is true that the Mexican economy does not present the securitization degrees that other developed countries, it is a fact that the prevailing trend during the following years will be greater financial depth; and therefore, it is essential to analyze the measures and reforms made so far in financial matters, in order to really take advantage of the benefits of financial development; what until now, based on the statistical analysis, have not been achieved.

5. References

Banco de México (varios años), Estadísticas. http:// www.banxico. org. mx/portal_disf/wwwProyectoInternetCaptacion _BM.jsp.

Cabrera, S. (2006). "Política económica y financiamiento al desarrollo: Las bases del financiamiento de la industrialización". Buenos Aires. CLACSO.

Comisión Nacional Bancaria y de Valores (2016). https://www.gob.mx/cnbv.

González, A. (2010) "La desindustrialización en la manufactura mexicana". México.

INEGI (2016). Banco de Información Económica, disponible en http://www.inegi.org.mx/sistemas/bie/.

Kaldor, N. (1963) "Stablishing the terms of Trade of Underdeveloped Countries", en *Economic Bulletin for Latin America.*

Kregel, J. (2007), "The Natural Instability of Financial Markets"; en *Working Paper no. 523.* Nueva York. The Levy Economics Institute.

Levy, N. (2009) "La organización de las instituciones financieras de países con mercados financieros desequilibrados y el financiamiento al desarrollo", en *Girón, A. y Correa, E. (coords.) Asimetrías e Incertidumbre.* México. Ed. Plaza y Valdés Editores.

McKinnon, R. (1973) "Money and Capital in Economic Development". Washington. Brookings Institution Press.

Molina y Zárate (2009) "La industrialización orientada a la exportación, ¿Una estrategia de desarrollo para México?". México. Ed. Siglo XXI.

Organización Mundial del Comercio (2016), Reporte sobre Comercio y Acuerdos Internacionales, disponible en https://www.wto.org/indexsp.htm.

Prebisch, R. (1950) "The Economic Development of Latin America and its principal problems". UNECLA.

Shaw, E. (1973) "Financial Deepening in Economic Development". Nueva York, Oxford University Press.

Thirlwall, A. (1972) "Growth and development: With Special Reference to Developing Economies". Londres. Macmillan Press.

Todaro, M. (2006) "Desarrollo Económico de Tercer Mundo".

UNCTAD (2015) "Information Economy Report". New York, UN.

6. Annex
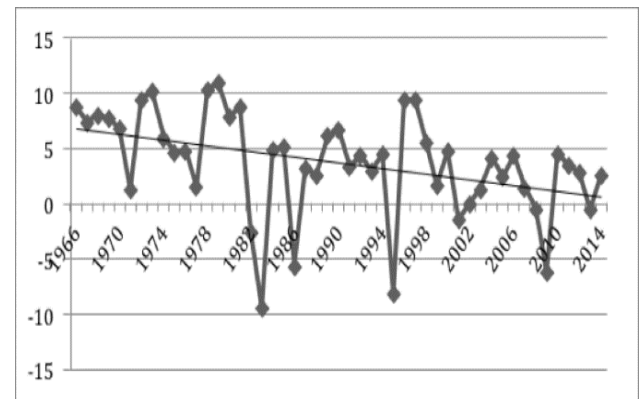
Annex 1 Manufacturing industry growth rate
Source: Prepared by the authors based on ECLAC, Statistical Yearbook for Latin America and the Caribbean (2015).

Human Resources Administration in the SMEs of León, Guanajuato

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Abstract

Both the Administration in general and the Administration of Human Resources in particular, are indispensable tools for the success of the management of the companies. In terms of structure, size and twist, the application of these tools will only have the pertinent adaptations to each of them, however, they are not core changes. In this way, when we are referring to Micro and small companies, the performance or the way the Human Resources Administration is applied in them, will keep a high relation with the application of this in medium and large companies. For this reason a study is carried out on the application of the administration of this resource in the SMEs of Leon Gto.city and if there is any relation of the academic preparation that each director possesses. For this, a field study is performed to know these factors and determine if there is any relationship between them. This will help us to know if these directors tend to enhance their human resources or it is a subject low- valued by them with the consequent disregard for its application. Finally, it is concluded if the actions undertaken in this direction affect the results of these companies and if they can be determinant for their permanence and growth or development.

SMEs, Human Resources, Labor culture, Affective capital, Health capital, Labor satisfaction.

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Introduction

Among the people who argue about the success of organizations, the main factor of this achievement is the human factor according to some, the others, however, point to the administration itself as a process or method of work, the cause of the optimal situation reached. The previous statement is based on an informal conversation in a room in the city of León Gto.

And participated in it: Dr. Luordes Münch Galindo, the director of the club "Punto verde de León" and advisor of the Municipal Sports Council (COMUDE), Jesús Villalobos; the director of the Agricultural Administration career, of the National School of Higher Education (ENES, UNAM), and former National President of the College of Management Graduates, Felix Patiño; the Director of the Economic Administrative Area of the La Salle Bajío University, José Julio Carpio; among others. Obviously the second assertion is much broader and contains the first, since the administration as a process, will include the planning and development of human resources.

By putting it that way, apparently all differences end and generally agree that the administration including human resources, is a factor for the success of organizations. When referring to the organizations in general, they do not make reference to the size of the same, reason why we would have to question ourselves on the application of this affirmation to all the sizes of these. Specifically to SMEs (micro and small companies), which are the subject of this particular study. Personally, I agree with the previous statements, however, I think that those who point to human resources as an essential factor in the success of organizations, are considering that by comparing each of the resources that the company has (financial, technical, technological, etc.).

These are of singular importance, perhaps because they are not considered as subjects of purchase or acquisition. The other resources have no conscience or decision of their own, the human resource has its own will, which leads it to assume attitudes that benefit or harm the groups of people with whom it interacts and determines the success or failure of the total organization.

Finally, whether it is a determining factor or not, what we can not deny is that, in a large number of organizations, the human factor makes a difference when this element becomes a determining competitive advantage. It is for this reason that we will explore the aspects that make up the administration of human resources, in order to establish the behavior of the SMEs in front of the personnel that collaborate in each of them. We will focus on the analysis of the SME directors' practices and their inclination for the training and development of the organization's human capital, as well as the relationship that exists between the academic preparation of the directors and the development they offer their resources. human beings in addition to seeking job satisfaction from them.

1.2 Problem

Investigation questions:
1. Do the managers of the SMEs consider it important to develop and care about the job satisfaction of their workers?
2. The development of Human Resources in the SMEs is related to the academic preparation of the directors?

This variable being a determining factor for the maintenance and development of these companies, it is necessary to check whether it is taken into account or ignored by them, since the treatment and the importance that they give may depend on their permanence or disappearance, of the local economic framework, national or global.

1.3 Justification

One of the factors that can influence the continuity of SMEs is the good administration of human resources; so it is important to know what the managers of these companies think and do. The result of this investigation will help us to understand if this factor influences or not in which micro and small organizations subsist or perish in the short term.

Given that a large percentage of the companies in the country and the locality are of this type, it is convenient to know the factors that may affect them for their success or failure and suggest or determine the actions that should be taken into account during their performance. The one that we are going to analyze, we believe is one of the most important for the success of the companies that we mentioned.

1.4 Objectives

General objective: To know if for SMEs administrators, it is important to invest in the development of their personnel, as a means of ensuring the consolidation of their company and if there is a relationship between their academic preparation and this conception.

1.5 Methodological objectives

1. Know the importance of investing in the development of human capital in companies, regardless of the size they have, in addition to knowing the research that has been done in this regard.
2. Design an instrument to collect information to know what the entrepreneurs of the SMEs of León decide on this topic.
3. Validate and apply the designed instrument. Analyze the information
4. Results and recommendations.

1.6 Delimitations

The present study only includes SME entrepreneurs, so neither medium-sized companies nor large companies are included. In terms of scope, only entrepreneurs in the city of León are considered. A random sample was selected and information was collected to later analyze it and make the diagnosis.

2. Theoretical framework

Some studies have investigated: concepts, methodological elements and suggestions to recommend the application of programs that promote the development of human resources in small Mexican companies.

In these studies it is expressed that, in the productivity and competitiveness of Mexican companies, the social relations and attitudes of workers are more important than the tangible physical conditions in which they work. The above applies in a special way to small businesses, since their conditions are underdeveloped and their characteristics are frankly familiar, so their structure is very simple and that is what constitutes their competitive advantage with respect to large companies.

In the Mexican SMEs, attitudes become more determinant than other characteristics, in achieving the efficiency and efficiency that the worker reaches. These are: Sensitivity to change, openness of communication, Creativity proactivity and responsibility at work. These are the ones that most influence the achievement of greater productivity than the set of knowledge, technical skills and abilities that he possesses. Therefore, we will need to change the work culture for another that through training helps to modify not only knowledge and skills but above all the attitudes of workers. (M., 2009)

The development of personnel can be defined as: "the organized, structured and continuous process, whose goal is to enrich and make the most capable workers while considering them as a vital resource of the company". (Gómez Mejía Luis, 1997) For their part, the training programs have to maintain or improve the performance in the present work, the personnel development programs intend to develop capacities for future jobs. (J. Satoner, 1996) The first type of programs, seeks the improvement of performance. On the other hand, personnel development programs seek to enrich and make workers more capable, satisfying both the needs of the company and those of the employee.

The training and development of personnel applied to organizations must be conceived as models of education, through which it is necessary first to form a culture of corporate identity, based on the social values of productivity and quality in work tasks . Consider these two activities as the learning of mere instruments and the management of figures and systems, is not, but devalorize, giving the employee not only a poor conception of the world and their work, but limiting it in their creativity and ability to develop and self realisation.

Arias Galicia, for its part, defines human resources as: "all those factors possessed by individuals whose exercise facilitates the achievement of the individual and social mission in order to increase the overall quality of life". (Fernando Árias Galicia, 1999) In this way, the achievement of a high performance will be facilitated if both individuals and organizations and societies, invest and make the most of their human capital. From the organizational point of view, financial capital will not be able to give maximum returns if it does not converge on the different types of human capital:

Intellectual capital (market assets, intellectual property assets, infrastructure assets, and all knowledge and skills of the persons), social capital (cohesion and integration among people as well as the ability to work as a team towards common missions) and affective capital (motivation, vocational styles, personality styles, people's commitment to the organization and towards own people, values and leadership) and health capital (state of integral development- physical, psychological and social of people, work teams, organizations and countries).

Mexican companies have many problems with the management of the human element and in the field of training and development, according to certain studies and research conducted on job satisfaction in Mexico. Some research (with fieldwork in Mexico City) Highlights such as: Insecurity in employment, massive layoffs and staff adjustments, decrease in income, increases in workloads for those who remained employed and poor prospects, although no exasperating Other studies arrive at the following results: Mexicans who worked felt quite (39%) and very (44%) proud of their work.

Half of the interviewees said they were pleased to return to their activity on Mondays and only 15% said they felt unhappy, the rest did not care. 57% of the interviewees stated that they never experienced the feeling of being exploited in their work and 26% only from time to time. (From Cerda G. J., 1998)

Investigations of the authors mentioned in a field study in the city of Guadalajara, showed that the large companies (of more than 200 workers) There were moderately more satisfied employees than in the small companies (of less than 50 employees). satisfaction with economic factors. (salaries, salaries, bonuses, profit sharing) and psychological working conditions (preservation of employment, treatment and recognition, types of supervision).

However, the workers with the most consistent levels of satisfaction were employees of medium-sized companies (between 50 and 250 workers). In addition, they found that in general the main causes of satisfaction were the position and the activities they performed, as well as working conditions. (schedule, shift, shift); and the main causes of dissatisfaction were the poor organization of work and bad treatment of the boss. (De la Cerda G. J., 1998)

Another problem detected in small Mexican companies is the lack of solid business preparation and low level of schooling of business owners (Ruiz D Clemente, 1992). In the case of workers, there is also a low level of education and qualification. (Salvador, 1993).

On the other hand, unfavorable attitudes of employers and workers towards training are also detected; Another problem detected is the lack of a stable workforce. (Salvador, 1993) Finally, Carlos Reza Trosino analyzing the situation of training and training in Mexico, especially in small and medium-sized enterprises, concludes:

**1.	Problems in the environment of organizations**

–	Lack of theoretical frameworks
–	Lack of reliable advice
–	Lack of research on the subject
–	Low levels of schooling
–	Lack of planning and reliable regulatory policies
–	Absence of information systems
–	Traditional education
–	There is no link between the formal education system and the productive apparatus
–	Indistinctly speaking of training and preparation; of human resources development; vocational training; etc.

–	The education of the workers sector: it must integrate the worker to the productive process, as a determining factor for his personal development and adaptation to society.

Problems within the company

–	Entrepreneurs do not believe in the benefits of training
–	Instructors are not competent
–	Participants are not interested in training programs
–	Bosses do not let their employees go to train
–	Training programs are poor
–	There is no monitoring of the programs
–	The "experts" lack training in the subject
–	No budget is assigned to the training activity
–	Top management does not get involved
–	There is no formal structure of the training area
–	The legal issue is very complicated
–	Training alone does not make magical changes in attitudes, behavior or effective acquisition of knowledge, it must be accompanied by motivational programs that support it.
–	Companies do not know the educational technology that allows them to design plans, programs, courses and events correctly.
–	There is an absence of technical-administrative infrastructure
–	Some of the workers do not have the elementary knowledge that literacy, primary, or even secondary education provides.
–	Typically trainers develop reactive and non-proactive and interactive programs. (Trosino, 1996)

Undoubtedly, the global scenario represents multiple risks as well as opportunities for small businesses in Mexico.

To take advantage of opportunities and reduce risks, they need to transform themselves into "organizations that learn", that is, capable of adapting to changes in the environment; to institute the administration for the total quality and to have a sensitive managerial staff committed to organizational change (J. Gordon, 1997). For this, permanent learning by people and teams within the organization is essential.

Maybe in the present this is a utopia; but it should be understood as the long-term vision that should guide labor relations and the management of human resources in small Mexican companies. It is essential to adopt the philosophy of high performance, and define the positions with the elements and criteria of the high performance profile.

Institutions are beginning to understand that the success of any organization lies in the ability to integrate workers in their projects, so that they consider the objectives of the institution as their own. Employees are not retained solely through salary, but also through all those factors that influence the degree of satisfaction, such as recognition, remuneration, training, relationship with their area manager, flexibility and possibility of promotion.

Schneider (1995), indicates some reasons that explain the great attention dedicated to job satisfaction: 1) Job satisfaction is an important result of organizational life. 2) Satisfaction has appeared in different investigations as a significant predictor of important dysfunctional behaviors, such as absenteeism, change of position and organization.According to the findings, research and accumulated knowledge (Robbins, 1998) considers that the main factors that determine job satisfaction are:

– Work challenge
– Fair reward system
– Favorable work conditions
– Colleagues who provide support
– Compatibility between personality and job position

A widespread definition is the one proposed by Davis, according to which satisfaction is conceived as a multidimensional concept, which includes a set of favorable and unfavorable feelings of the individual in relation to his work and which groups together various factors, distinguishing between those that are directly related to the nature of the task performed and those related to the work context. (Davis, 1987)

Regarding the importance of job satisfaction for organizations, throughout the review of the specialized literature, it is observed that, in general terms, there is a positive relationship between employee satisfaction and the results of the organization. (Davis, 1987). For Robbins, job satisfaction is determined by the attractiveness of the tasks, associated rewards, relationships with co-workers, and working conditions to which employees are exposed.

In addition, he affirms that other factors related to the personality of the employee and the characteristics of the function he performs, intervene in the same way in the perception that the employee has of his well-being and complacency in what he does, even to the extent that the personality matches the chosen vocation, there will be a greater possibility of having satisfied workers. (Robbins, 2004)

Meliá and Peiró collect as separate factors satisfaction with supervision and satisfaction with participation, as well as satisfaction with the physical environment, satisfaction with benefits and intrinsic satisfaction. (Meliá, 2010).

At present, the phenomenon of job satisfaction acquires a vital importance for the development of humanity. It is evident that it is necessary to combine the new technologies and the human factor to achieve effectiveness and effectiveness in the organizations of the 21st century.

In the scientific community there is consensus in pointing out that job satisfaction is the attitude that the person assumes before their work and is reflected in attitudes, feelings, moods and behaviors in relation to their work activity. If the person is satisfied with his work he will respond adequately to the demands of the latter, if, on the contrary, he is dissatisfied he will not be able to carry out his work with efficiency and quality. In addition, job dissatisfaction is reflected in all areas of the worker's life. (D., 2004)

3. Methodology

In this article the decisions that they express on the development of their personnel, the entrepreneurs of the micro and small companies of Leon Guanajuato are analyzed according to a bigger investigation that was carried out through the survey, applied at national level, " Systemic analysis of micro and small enterprises in Mexico" taken from Aguilar, Posada and Peña. 26,533 valid questionnaires were applied. (PosadaR., 2016)

To determine the sample we used the program for the calculation of samples called Decision Analyst STATS TM 2.0, we considered a value of p = 50%, to obtain the largest sample with a reliability of 95% and an error of 5% with which was determined that the minimum sample should be 382 participants, given a population of 79084 economic units in the municipality. (Computer, 2017). Finally, the survey was applied to 514 micro and small businesses. (Oscar C. Aguilar Rascón, 2016).

3.1 Design of the investigation

From the different sections that make up the applied instrument the questions that are shown in the Marketing and Sales Management sections were chosen. To evaluate the answers, the Likert scale was used, where 5 is Strongly agree; 4 Agree; 3 Disagree; 2 Strongly disagree and 1 Do not know / Do not Apply.

4. Results

The first results that we have, are those that correspond to the academic preparation of the administrators of the SMEs. In these results we can highlight that the vast majority (61%) have high school and high school, so we can infer that within the academic preparation they have, they do not have the tools to assess the investment in human resources that the organization owns.

Studies	Total	%
Primary	78	14%
Secondary	191	33%
Baccalaureate or technician	161	28%
More than 1 year of university without title	34	6%
Senior university technician	12	2%
Bachelor's degree or engineering	63	11%
At least one year of master	5	1%
Master's degree	11	2%
Doctorate	2	0%
No answer	17	3%

Table 1 Last grade of the director's studies
Own *Elaboration*

If, as we mentioned in the previous table, they do not have the tools to assess the investment in their human resources, it seems logical that half of them do not always evaluate the satisfaction of their workers. It is not a priority for them and they only accepted that they almost always do it. The other 50% is divided equally between those who answered always, and those who answered: sometimes, almost never and never.

Scale	Total	%
Always	165	29%
Almost always	239	42%
Sometimes	74	13%
Hardly ever	22	4%
Never	56	10%
No answer	18	3%

Table 2 I evaluate the job satisfaction of my employees
Own Elaboration

Consequently, with the previous answers, if they do not evaluate the job satisfaction of their workers, they will hardly seek to improve their well-being. 46% answered that almost always, recognizing that this is not their main concern. As in the previous one, the third part replied that.

Scale	Total	%
Always	185	32%
Almost always	263	46%
Sometimes	65	11%
Hardly ever	11	2%
Never	41	7%
No answer	9	2%

Table 3 I focus mainly on improving the well-being of my employees
Own Elaboration

The next question refers to the evaluation of workers' performance. It is important to know how many managers of SMEs perform this function, since through the diagnosis they can establish the result of this evaluation, they can perform the planning of the development of the human capital of their company. The result is consistent with the previous items, 44% of the answers were almost always, while the third part answered that they always do it.

Scale	Total	%
Always	185	32%
Almost always	251	44%
Sometimes	60	10%
Hardly ever	16	3%
Never	51	9%
No answer	11	2%

Table 4 I evaluate the performance of my employees
Own Elaboration

Finally the question is asked about how much the worker is involved in the decision making, to which the administrators responded in the same tenor as the previous answers, 40% almost always, and almost the third part that always. Sometimes, almost never and never was the other third of the answers obtained.

Scale	Total	%
Always	157	27%
Almost always	230	40%
Sometimes	90	16%
Hardly ever	37	6%
Never	48	8%
No answer	12	2%

Table 5 I involve my employees in making decisions
Own Elaboration

5. Conclusions

According to the responses of the administrators of the SMEs of León, Guanajuato, Human Resources are not for them the most important thing in the management of their businesses. Definitely there are other priorities for them, such as sales or finances. When making an analysis of the different resources available to organizations, for most of the administration experts, human resources may be the most important; however, for those who are not experts in administration, as is the case of these directors, they go to second or third order of importance. The academic preparation of most of them, only reach secondary school and high school, which does not make them experts in administration.

As already some other investigations, the administrators of the SMEs, do not consider the administration of human resources, as the paramount for the development of their organizations. When not considering it as a priority, they do not allocate resources to their development or to the empowerment of them for the subsistence and growth of their businesses. Since they do not have the necessary academic preparation to know the benefit of investing in the development of human resources, the administrators of the SMEs of León do not undertake actions aimed at empowering their workers and thus becoming a competitive advantage. for their organizations, in a way that helps to ensure their permanence and growth.

6. References

D., G. (2004). La medida de la satisfacción laboral en el contexto organizacional. *Psicologemas*, 36 vol. 5.

Davis, K. (1987). *Comportamiento Humano en el trabajo.* México: Mc. GRaw Hill.

De la Cerda G. J., N. d. (1998). *La admiistración en desarrollo.* México: Ed. Diana.

Fernando Árias Galicia, H. E. (1999). *Administración de REcursos Humanos para el alto desempeño.* México: Trillas.

Gómez Mejía Luis, B. D. (1997). *Gestión de Recursos Humanos.* España: Prentice Hall.

Informática, I. N. (21 de 07 de 2017). *Encuesta Nacional de Micronegocios*. Obtenido de Encuesta Nacional de Micronegocios: http://WWW.inegi.org.mx/est/contenidos/proyectos/encuestas/hogares/especiales/ei2015/panorama/presentción.aspx

J. Satoner, E. F. (1996). *Administración de Recursos Humanos.* México: Prentice Hall.

M., C. M. (18 de 07 de 2009). *Desarrollo de los recursos humanos en las pequeñas empresas mexicanas*. Obtenido de Desarrollo de los recursos humanos en las pequeñas empresas mexicanas:http://www.economia.umich.mx/eco_old/publicaciones/EconYSoc/ES11_13.html

Meliá, J. .. (13 de 02 de 2010). *Satisfacción Labotal*. Obtenido de Satisfacción laboral: www.eumed.net/cccss/09/dgu/htm

Oscar C. Aguilar Rascón, R. P. (2016). *El estrés y su impacto en la productividad.* México: Pearson.

PosadaR., A. P. (2016). *Análisis sistemico de las micro y pequeñas empresas en México.* México: F. Román Ed. Pearson Educación.

Robbins, S. (2004). *Comportamiento Organizacional.* México: Prentice Hall.

Ruiz D Clemente, Z. S. (1992). *Cambios en la estructura industrial y en las micro, pequeñas y medianas empresas en México.* México: Ed. NAFIN.

Salvador, G. d. (1993). *La micro, pequeña y mediana industria en México y los retos de la competitividad.* México: Ed. Diana.
Trosino, J. R. (1996). *Situ*

Productive Architecture in MSMEs, Management Alternatives and Sources of Financing

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Abstract

This research study presents the analysis of the results on external factors in a company that have a significant difference between micro and small enterprises in the region of Angostura, Sinaloa, Mexico. We analyzed the external factors that lead to the lack of continuity in the companies. A sample of 30 companies was randomly shaped by several economic sectors of the region, of which they were applied in four rural communities of the municipality, being the following: Colonia Agrícola Independencia, The Reform, Colonia Independencia, and Leopoldo Sánchez Celis, all in active companies. It was found that the factor with the greatest impact are the external factors, from which the items that make up the variable were found, finding that the lack of sources of financing is the most significant. However, it is also important to emphasize that microentrepreneurs need more information on financing sources.

Micro and small enterprises, sources of financing, management

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1. Introduction

In Mexico as in many other countries in Latin America, Asia, and the United States, for example, the so-called small and medium-sized companies or SMEs make up the vast majority of the business universe in the world. Hence the strategic importance that these acquire or should in terms of national, regional or local economic development, according to figures from the National Institute of Statistics (INEGI, 2014). There are more than five million companies in Mexico and around 350,000 new ones are opened every year. Of these companies, 95% are micro and small companies (SMEs), companies of all sectors including agricultural producers, livestock farmers, fish farmers, miners, craftsmen, manufacturers, businesses, tourism and cultural services and others.

SMEs in Latin America have a very important role in the economic performance of the countries that make up the region. In this sense and as it deepens further, in the most advanced nations of this geographical area such as Mexico, Chile and Argentina, SMEs generate 6 out of 10 jobs, contribute more than 30% of GDP and concentrate more than 96 % of the companies that work in the Industry, Trade and Services of these countries. (Well, 2007).

The Secretary of Economy through the National Institute of the Entrepreneur (INADEM, 2016) and the Mexico Emprende Trust, promote the Support Fund for Micro, Small and Medium Enterprises (SME FUND), which is an instrument that seeks to support the companies in particular to those of smaller size and entrepreneurs with the purpose of promoting national economic development, through the granting of temporary support to programs and projects that promote the creation, development, viability, productivity, competitiveness and sustainability of the micro, small and medium enterprises.

It also contemplates the National Entrepreneur Fund, which aims to encourage national, regional and sectoral economic growth through the promotion of productivity and innovation in micro, small and medium-sized enterprises located in strategic sectors, which promotes orderly strengthening, planned and systematic entrepreneurial and business development throughout the national territory, as well as the consolidation of an innovative, dynamic and competitive economy.

Particularly the INADEM, provides support to entrepreneurs and Micro, small and medium enterprises through calls, which are divided into the following categories:

– Programs of Strategic Sectors and Regional Development.
– Business Development Programs.
– Entrepreneurship and Financing Programs.
– Programs for SMEs.

According to the magazine Entrepreneur (2016), it presents 7 forms of financing to start or grow a business, according to the one that best suits the interests and needs of each business.

1. FFF Friends, Family and Fools is the first source of financing, since it is used for the constitution of the company itself and occurs when an entrepreneur starts his business thanks to the help of his family and friends.

2. Government Funds. They are used to generate business models and project development, that is, when it is more advanced than a simple idea. They are also used to create prototypes that help market the product or service in the market. The main sources are the funds of the Ministry of Economy.

3. Seed capital It is a loan that delivers the amount of money needed to implement a company and finance key activities during the start and start of the project. It is delivered when the company is incorporated and has some important product, but requires money to operate or for working capital.

4. Angel investors. The companies that are functioning generally receive this type of contributions, because for their high innovative content or potential development they attract credits. Generally angel investors are independent or belong to a club, since they style networks of this type of support in companies.

5. Venture capital. It is used when the company has a certain level of development; It is a fund that invests greater amounts. It is a temporary contribution of resources from third parties to the assets of a company to optimize their business opportunities and increase their value. In this way solutions are given to business projects, risk and returns are shared.

6. Private equity. It is a fund for large companies and is used to expand the business or for internationalization. It provides capital in exchange for shares that the company grants. In addition, it contributes with monetary resources such as contacts, best practices, administration, etc.

7. Banking financing. Companies can go to bank financing in order to have flow in the daily operation of the business. In addition to commercial banking there are Sofomes that can help, as well as companies dedicated to financial factoring. The important thing is to compare the products and bet on the one that best suits your personal needs, since the credit must be a tailored suit.

1.1 Management alternatives to boost the development of SMEs

The objective pursued by contemplating management models in micro, medium and small companies and organizations, is to increase the economic and managerial level, through the creation, development, application, validation and improvement of intervention models that allow them to be competitive.

Undoubtedly, small and medium-sized Mexican companies face large and varied problems and challenges. In this section an analysis of the development potential that can be acquired is made, based on their management capacity in financing sources, generation of productive and alternative projects in management models, use and optimal use of social networks to acquire or absorb the organizational knowledge contemplating a support of advisory or timely training in the knowledge and necessary skills of their businesses.

1.2 Market strategy (Global environment and social networks).

Global environment According to a publication in the newspaper La Razón de México (2015). The Trans-Pacific Partnership Agreement (TPP, for its acronym in English) opens a chapter for Small and Medium Enterprises (SMEs) in which it is agreed to promote a growth model in the value chain of the role they play. For this, it was agreed to give the same value to physical products as Services and Electronic Commerce, likewise the Presidency of the Republic on its website, stressed that, through these channels, SMEs can be integrated into the commercial chain through electronic commerce, placing in the markets not only their material products but their talent in service and creativity in intangible goods.

He affirmed that the TPP corrects an area of opportunity of the Free Trade Agreement, "opens a new window to 200 million potential customers. Mexican companies will enter new markets and consolidate their presence in the markets of Latin America and North America. "

Social networks. According to Forbes magazine (2015). In Mexico there are more than 5 million small and medium enterprises, but only 30% of them, 1.5 million, use Facebook (FB) to connect with their clients or potential clients.

2. Theoretical framework

To achieve the growth of a company it is necessary to use different ways to get the capital to obtain a favorable development and meet the objectives. To determine the financial sources of a company, which are the promotion for the development of an organization, it is necessary to know also the financial structure of the company, which is the basis of the project, in the opinion of Rico and Cabrer (2015), the financial structure "is the composition of capital or financial resources that the company has captured or originated. These resources are those that in the balance sheet appear under the generic denomination of liability that includes, therefore, the debts and obligations of the company, classifying them according to their origin and term. "

The sources of financing are a form of economic aid for the company and it can meet the goals set and in turn have a growth in its development. In the opinion of Rico (1995) "Are those alternatives that will offer to the company or organization, the economic elements necessary to meet its objectives, whether these obligations to be met immediately, be the undertaking of any project, etc., under more favorable weather and cost conditions at the right time. "

Based on the opinion of the authors Artigas and Romero (2013), the sources of financing are the possibility of receiving public aid (of which funding and participation in calls for projects can not be ignored) and donations or contributions from related users, for example some partner for the company.

In order to have a good development in an organization, an analysis of the adequate financing must be made for the business of a company and on the capital that is needed to carry out the project, the sources of financing are indispensable for the growth of the organizations, this according to the understanding of the opinion of the authors (Glenn et al., 2009).

The sources of financing are very important in any company to be able to have an adequate growth to meet the established goals, analyzing the knowledge of author Fernández (2009) "there are three types of financing sources that are shown in the following scheme and later explained each of them."

3. Methodology

For this study, a quantitative analysis was carried out with an exploratory scope, for the collection of data an instrument questionnaire was used composed of 30 items, on a Likert scale, to 30 companies from four communities of the municipality of Angostura, Sinaloa, Mexico.

The instrument was composed of two variables: 1) External factors that favor the development or closure in the mipyme, use and knowledge about government support and funding sources, as well as 2) indicators of a socially responsible company; a) Commitment to the community, b) Quality of life in the company, c) Competitiveness and relationship with its stakeholders, and d) Care and preservation of the environment.

4. Results

In this study it was found that the variable that considers that it has a higher significance is the lack of funding sources, on the other variables as can be seen in the graph 1.
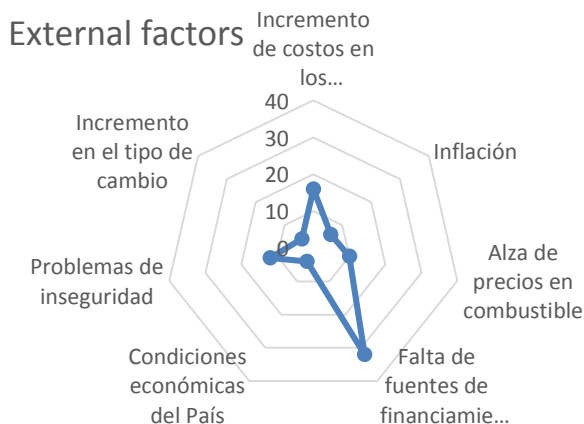
Graph 1 External Factors

With respect to the use and knowledge of the sources of financing and governmental support, it was observed that there is ample knowledge about the existence of alternative sources for financing in MSMEs; however, it is not enough, since there is a lack of considerable information in the producers and micro-entrepreneurs of the area of influence of the research. Added to this 80% of these entrepreneurs are willing to invest their own economic resources and personally manage government support to obtain financing and thus increase their structure and production team.
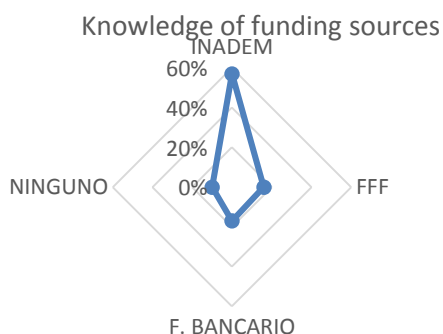
Graph 2 Knowledge of funding sources

5. Conclusions

In the analysis of the companies surveyed, it is observed that the factors that can affect the closure of the SMEs, refer to external factors which mainly affect the decision making for the decline of the same, with a greater emphasis on this section referring to a limitation in the lack of funding sources.

6. References

Artigas, W. & Romero, M. (2013). Sostenibilidad de las radios comunitarias: una mirada a las fuentes de financiamiento. *Opción*, 29(71) 107-124.

Fernández, F. (2009). Fuentes de financiamiento. México. Recuperado de https://florfdez.files.wordpress.com/2009/12/fuentes-de-financiamiento.pdf

Glenn, W. J., Picus, O., Odden, A. & Allan, A.A. (2009). The Equity of School Facilities Funding: Examples from Kentucky. *Education Policy Analysis Archives/Archivos Analíticos de Políticas Educativas*. 17. 1-18.

INADEM. Instituto Nacional del Emprendedor. (2016). Recuperado de https://www.inadem.gob.mx/index.php/fondo-nacional-emprendedor

Periódico la Razón de México (2015). Recuperado dehttp://www.razon.com.mx/spip.php?article280244

Pozo, J.M, (2007). Desarrollo de las PyMES latinoamericanas. El caso de Cuba. *Economía y Desarrollo*. 142(2),115-135.

Revista Entrepreneur versión digital en español (2016). Recuperado de http://www.entrepreneur.com/article/264229.

Revista Forbes México (2015). Recuperado de http://www.forbes.com.mx/facebook-quiere-hacerse-amigo-de-mas-pymes-mexicanas/

Rico, E. (1995). Fuentes básicas de financiamiento. México. Recuperado de http://eds.b.ebscohost.com/eds/resultsadvanced ?sid=0e8129ec-b0f6-49e0-babd-765fab1cf8a0%40sessionmgr107&vid=2&hid= 112&bquery=(fuentes+AND+%22de%22+AN D+financiamiento)&bdata=Jmxhbmc9ZXMmd HlwZT0xJnNpdGU9ZWRzLWxpdmU%3d

Rico, P., Cabrer, B. (2015). Determinantes de la estructura financiera de las empresas españolas. *Estudios de Economía Aplicada*, 33(2). 513-531.

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A. Submission of papers to the areas of analysis and modeling problems of the:

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Text in Times New Roman No.12, single space.

General explanation of the subject and explain why it is important.

What is your added value with respect to other techniques?

Clearly focus each of its features

Clearly explain the problem to be solved and the central hypothesis.

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**Development of headings and subheadings of the article with subsequent numbers**

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In the article content any graphic, table and figure should be editable formats that can change size, type and number of letter, for the purposes of edition, these must be high quality, not pixelated and should be noticeable even reducing image scale.

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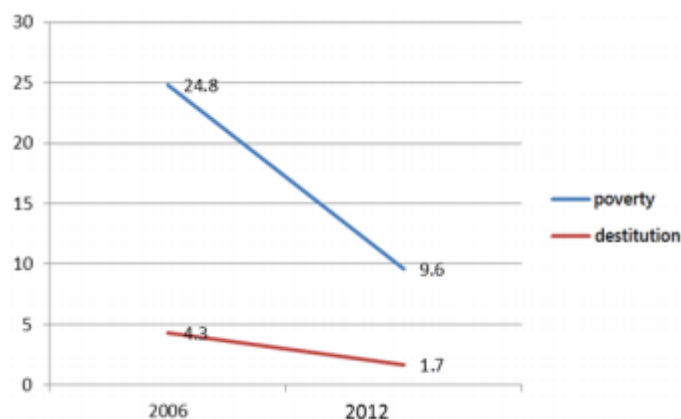
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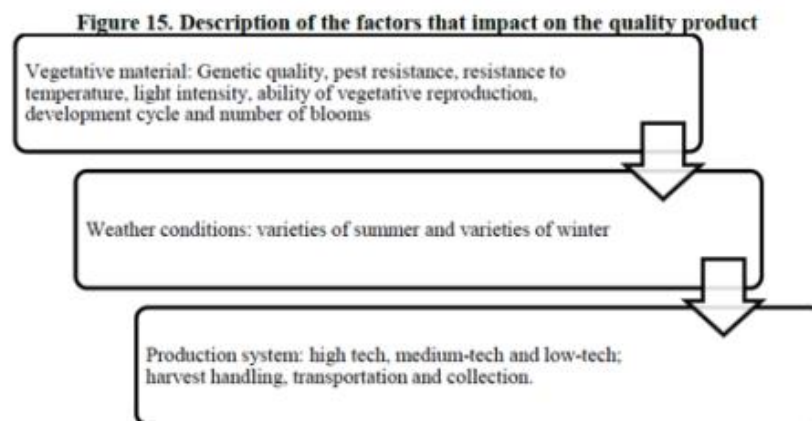Should not be images-everything must be editable.

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	Cluster		Error		F	Sig.
	Mean square	df	Mean square	df		
SOLVENCY	77.287	4	.426	532	181.247	.000
LIQUIDITY	77.182	4	.427	532	180.669	.000
SIZE	62.602	4	.537	532	116.616	.000
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Develop give the meaning of the variables in linear writing and important is the comparison of the used criteria.

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The results shall be by section of the article.

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Tables and adequate sources thanks to indicate if they were funded by any institution, University or company.

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Explain clearly the results and possibilities of improvement.

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