Analysis of the Behavior of Non-Financial Companies in Panama In Relation To GDP 2012-2017

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Abstract:

This article presented the Analysis of the behavior of *non-financial companies in Panama in relation to Gross domestic product 2012-2017", is a contribution of Universidad del Istmo, to deepen the economic reality of the country regarding the relationship between the opening of new non-financial companies and economic growth in the country, the existence or not of the correlation between GDP and non-financial companies, determine their impact, which will allow to seek strategies to support new investments and strengthen existing ones. Among the objectives of the study are to be able to quantify the intensity of the relationship and to what extent the variation in GDP explains the behavior of the creation of non-financial companies through the coefficient of determination; as well as to check the assumptions of linearity, normality, homoscedasticity and independence from errors, to propose a predictive model and to be able to contribute with bibliography of Administrative Sciences in senior management of Non-Financial Companies and the understanding of organizational dynamics. Non-financial companies contribute to Panama's significant growth, taking into account various positive factors such as economic GDP growth and new business opportunities, legal security, geographical location, human resources, technological platforms, among others, which places us according to the indicators of international organizations such as the World Bank, inter-American Development Bank, ECLAC, among the fastest growing economies in the region. As a result of the research, it is concluded that there is a link between GDP and economic growth, which impacts labor growth, and there is a correlation between the behavior of GDP and the number of Non-Financial Companies, but the fact of increasing GDP in the case of Panama, does not necessarily imply that many new companies were created.*

Key Word*: Non-financial companies, Gross domestic product, economic growth, correlation between GDP behaviors, Gender equality*

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I. Introduction

The role of business in our society is vital, as they offer many of the products and services needed to keep our economy going and facilitate economic growth, innovation and productivity.

Non-financial corporations are an important part of any country's economy and market system. There are few studies carried out on non-financial companies, we refer to those that develop as their main activity the production of non-financial market goods or services, whose income comes mainly from the sale of production. Non-financial enterprises bring together economic agents for whom their main task is to produce non-financial commercial goods and services.

For this investigation, the category of non-financial companies or non-financial obligated subjects is based on the provisions of article 23 of Law 23 of April 27, 2015, "Which adopts measures to prevent money laundering, the financing of terrorism and the financing of the proliferation of weapons of mass destruction , and makes other provisions."

According to the aforementioned article, the list of non-financial obliged subjects is supervised by the Ministry of Economy and Finance, through the Office of Supervision and Regulation of Non-Financial Subjects of that Ministry; while the Financial Obligated Subjects are supervised by the Superintendency of Banks, based on the classification contemplated by this regulation, in Article 22.

Non-financial companies and Panama are among the fastest growing countries in the Latin American region, however, the existence of a slowdown in the economy is raised, but it is unknown how it is impacting on the opening of new companies; or whether the economic growth we have is sufficient. "Panama would be the second fastest growing country in the entire region, including Central America, Latin America and the Caribbean, with a forecast of 6% of real GDP for this year..." (Chandiramani[2019], p. 1)

Maintaining economic growth is an attraction for investment, this research will expand the existing knowledge, by identifying other variables and factors that have impacted the opening or not of new companies, as well as determining the normal behavior of the market and establishing whether there is a ratio between the growth of the gross domestic product and the opening of new non-financial companies.

According to the Office of the Comptroller General of the Republic, "Panama achieved a growth of 6.2% during the first quarter of 2017, compared to the same period of the previous year and trade was the economic category that contributed the most to quarterly GDP, with a contribution to growth of 138.2 million balboas..." (National Institute of Statistics and Census, 2019, p. 1)

That said, the central question that this research answers is what is the behavior of non-financial companies in Panama, in relation to the growth of Panama's GDP? and as subproblems How much is the increase or decrease of non-financial companies in Panama?, What is the impact of GDP on non-financial companies especially in indicators such as: employed personnel, presence of women, the degree of remuneration?

II. Literature Review
Theoretical foundations of the creation of new non-financial companies.

The most general definition of the company is of an organization in which capital and labor are present, as fundamental aspects for the realization of industrial, commercial or service activities.

Creating a company requires planning, analysis of multiple factors, but above it is essential to identify if it will solve a need, attend a service to society or a sector of the population.

Some authors define the company from a broad aspect, which encloses organization, process, activities, market and objectives, that is; a system within which a person or group of people develops a set of activities aimed at the production and/or distribution of goods and/or services, framed in a specific corporate purpose. (Pallares Zoilo, 2005)

We also find basic definitions of the company, conceived as a social organization that uses a wide variety of resources to achieve certain objectives. (Chiavenato, 1993)

We can define a company, as an organization, which has the necessary resources, in order to create goods or services to intervene in the market and meet different needs in society or sectors of the population and generate profits with the activity.

To create companies we must have the necessary resources to generate ideas and know the needs of the market, entrepreneurship, innovation, productivity, profitability and growth of the company, are important factors for competitiveness and development of its full potential, minimizing risks.

Advising on the creation of companies, must incorporate different approaches, analyze the national and global context, behaviors, market, opportunities and social, economic and structural conditions.

There are different theories that deal with the decision to create a company, we refer to 4 approaches:

Economic Approach

In the theory of economic development, the figure of the entrepreneur has a central role in business, emphasizing above all the role of internal driver of the mechanism of change in the economy of capitalism. (Schumpeter J. A., 1934.)

The characteristics of what it is to be an entrepreneur, are contemplated in the theories about entrepreneurship, among them we find those that identify them as someone who specializes in making decisions with criteria on the coordination of scarce resources(Casson, 2003)

The theory of transaction costs seeks to explain the creation of new companies under the assumption that these costs define the level of entrepreneur, the company, the organizational structure and the market option by selling the new idea or project. (Coase, 1937.)

With globalization, creating a company must take into account other economic models of entrepreneurial behavior, the socio-demographic, gender variables, age, socioeconomic level, area of residence, perception of risk, and social attitudes towards the goods and services offered.

Environment Approach.

Although the characteristics of the entrepreneur are very important, external factors such as the presence of experienced entrepreneurs in the area and successful business role models in the community, have a remarkable effect on the decision to create a company. Additionally, the family environment can affect the entrepreneur, families where there have been experiences of entrepreneurship, can motivate its members in business activities.

North stands out among the exponents of institutional theory, which has different aspects, where he contributes in the nature of social change and economic development in the creation of companies; also notes

that transaction costs are a critical factor in economic performance; individuals form organizations to embrace the gains from specialization and division of labor. The author refers to the different factors or mechanisms devised by society to conduct relationships or human behavior, he said that organizations or organisms were constituted by groups of individuals united by a common purpose in order to achieve certain objectives. (North, 1990)

The use of networks has been studied as a positive aspect where the entrepreneur maintains links with people and organizations that interact, and these contacts expand the possibility of resources in the creation of new companies, although their results may vary according to the knowledge in use of technologies, the level of education and other factors

Psychological Approach

As for the psychological characteristics of the personality that distinguish an entrepreneur and his decision-making processes; from the different theoretical approaches we can point out the need for achievement, risk tolerance, the desire for independence, objectives and achievements of a continuous effort, drive, personal values and authority.

The cognitive process is related in the way the entrepreneur stores, transforms, retrieves and uses information. Possessing the prior information to identify an opportunity and the cognitive abilities to evaluate that opportunity. It is also considered that human behavior is strongly influenced by the confidence that people have in their ability to act, essential in an entrepreneur. (Bandura, 1977)

Another example, linked to this Psychological factor, is illustrated by shapero's model, which explains his theory on business creation, and the entrepreneur based on the previous steps, the desire and the decision to create the company, in the previous phase are: events, positive or negative, will predispose the entrepreneur to constitute his company; in the Desire Phase: circumstances, which affect the formation of the entrepreneur, family, culture and friendships; and in the third Phase of action: Under a series of conditions the individual will finally decide to create his company.. (Shapero, 1982)

Opportunity Approach

Opportunities always exist, some do not make the decisions to take advantage of them, but the difference is that successful entrepreneurs see opportunities in situations where other people see risks. (Sarasvathy, 1998)

In these decisions, aspects that influence them intervene, depending on the different perceptions of people to take risks, because in any creation of a company requires investing time, money and effort before making a profit.

There are three factors that lead to the identification of opportunities; the commitment to an active search where information is essential; be alert through the analytical capacity, intelligence and cognitive skills of entrepreneurs; and prior knowledge of the industry and the market, where previous experiences are important. (Baron, 2006)

A multidisciplinary approach allows a better approximation and valuation of entrepreneurial activities and the creation of new companies. From Schumpeter's work, the concept of "entrepreneur as innovator" is adopted and considered as a key factor in driving economic development. (Schumpeter J. A., 1934)

Characteristics of economic growth in Panama.

Panama is among the highest economic growth rates in the region, but shows a decrease compared to previous years. After GDP growth rates of over 8.0%, in 2018 it reached 3.7%. Unemployment as of August 2019 was 7.1%, and informal employment accounted for 43.6%. (UNDP, 2021)

For its part, the Union of Industrialists in Panama (SIP), in its 2019 economic report, indicates that the lower growth is mainly due to the slowdown in key sectors for national development such as construction, real estate activities, manufacturing industry, hotels and restaurants, fishing sector, commerce in general, among others. The lower dynamism of the economy is explained by the greater number of economic sectors that contract, manufacturing industry, construction, hotels and restaurants, real estate activities, fishing sector and a low growth of the trade sector. (Espinoza, 2020)

According to the World Bank, "Despite recent growth, workers in high-growth sectors remained vulnerable, with more than a fifth of them living on less than $13 a day in 2018 (in purchasing power parity terms). In addition, inequality remained among the highest in the world (Gini coefficient of 49.8 in 2019)." (The World Bank,2021).

Economic growth in a global market, with the impacts of the global COVID-19 pandemic, requires rethinking public policies, expanding opportunities taking into account how the economic context of the region develops, recognizing the dissatisfaction of citizens with their governments and public institutions, in this sense according to ECLAC, "the objective of promoting growth must be accompanied by the creation of better

employment opportunities , greater macroeconomic stability and better prospects for socio-economic progress for citizens. In this sense, a fundamental area for institutional transformation must be aimed at boosting trade, trade integration, productive diversification and adding value to production." . Not forgetting greater investment in research, development, science and technology.(OECD/CAF/ECLAC, 2018)

Non-financial companies (ENF).

They are those whose main activity is the production of non-financial market goods or services, whose income comes mainly from the sale of production. They represent most of the productive system.

Non-financial enterprises, comprising a wide variety of activities, can be both public and private. This sectorization of non-financial companies is used by international organizations when they prepare statistical reports on the external debt of countries, such as the OECD, IMF, and World Bank.

The public ones, incorporate both at the level of government companies in general non-financial, autonomous entities and municipalities. Non-financial public enterprises occupy an intermediate position between business and government. They are engaged in commercial operations, although they have been selected by the government as instruments for the execution of economic policy. (Fund, 2014)

Private companies include corporations, companies, and privately owned associations, as well as public companies that engage in the marketing of non-financial goods and services and that generally spend most of their expenses with their income. Its activities are distinct from the provision of financial and insurance services.

In non-financial companies, variables such as gross disposable income, gross savings, financing capacity/need, net acquisition of financial assets, net liabilities incurred, and balance of financial assets and liabilities, among others, are measured.

III. Material And Methods

Quantitative Non-Experimental Design, Longitudinal (from 2012 to 2017),of Correlational scope, under the Linear Model. It is based on   secondary information,   from the official database [1] of the State In this research we have 1 independent variable (GDP) and we seek to correlate that both affects the behavior of GDP, to various variables that depend (number of companies created, total income, purchases and expenses, remunerations, staff employed in total and by sex), which allow us to analyze non-financial companies. The central hypothesis of this research is that the behaviorof GDP, positively impacts the behavior of non-financial companies. The statistical decision will be based on the "p value" where if "$p \leq 0.05$" the null hypothesis is rejected and the alternative is accepted, likewise if "$p \geq 0.05$" the null hypothesis is not rejected.

In relation to the temeno variables the following:

Independent Variable (x): GDP

Dependent Variables (y):

(y1) Number of Non-Financial Companies in Panama.

(y2) Total revenue

(y3) Purchases and expenses

(y4) Remunerations

(y5) Total Occupied Staff

The Pearson correlation   coefficient and   the coefficient of determination shall be used as procedures. Pearson's correlation coefficient "R" establishes whether or not there is correlation and how strong it is, and in the case of the Coefficient of Determination "R2" it measures the proportion of the variation of the dependent variable (y) based on the behavior of the independent variable (x).

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[1] https://www.inec.gob.pa/publicaciones/Default2.aspx?ID_CATEGORIA=4&ID_SUBCATEGORIA=17

Para the pearson correlation calculation uses the following equation:
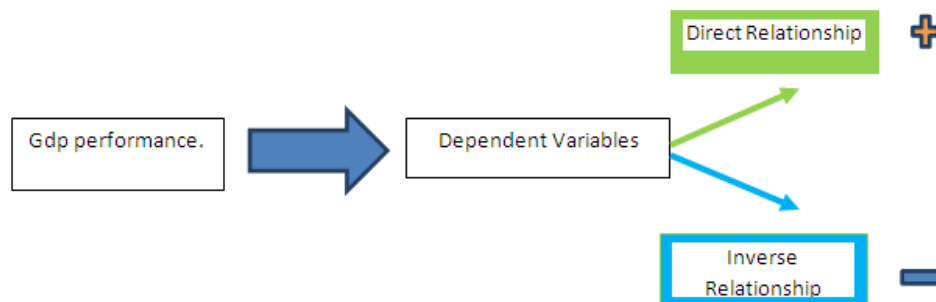
$$r = \frac{\sum xy - n\bar{X}\bar{Y}}{(n-1)S_x S_y}$$

Para the coefficient of determination of the model simply raises to the table the linear correlation, "r2"

We have then

Xi = Behavior of GDP.
Yi = Each of the dependent variables

Pearson's Correlation Coefficient also represented by "R", likewise establishes the directionality of this correlation, if it presents negative sign it is indicated that the relationship is inverse and if positive the relationship would be direct. In the case of finding a correlation of R ≥ 0.8, then we proceed to determine if it is possible to make projections by calculating the "R2" also known as the "R squared" or the "Coefficient of Determination", the condition is that the "R2 > 0.80" in case of having this result, the last step is the verification of the assumptions of : linearity, normality, homoscedasticity and independence from errors. If the assumptions are met, estimates are then made. The model to be used methodologically are those of linear regression, depending on which the variables are quantitative.

It should be specified that the fact that there is a correlation does not imply that estimates can be made in this regard of a predictive nature, unless the conditions indicated above are met.

Additionally, heopts for the simple linear regression model, which is used to explain the behavior of the variable (y) with a predictive variable (x) using a linear function. In other words, using a linear regression model, test whether there is a relationship between any of the dependent variables and the independent variable by calculating the linear correlation. This implies an estimation process for each of the dependent variables listed. Then the equation of the regression line must be calculated.

The regression line can be obtained by the equation:

$$\hat{Y} = a + bX, a = \bar{Y} - b\bar{X}$$

Where:

$$b = \frac{\sum xy - n\bar{X}\bar{Y}}{\sum x^2 - n(\bar{X})^2}$$

Finally, in order to make estimates with the equation, the assumptions of linearity, normality and homoscedasticity must be checked.

IV. Result

At a descriptive level, we have the behavior of GDP according to Table 1, it is of constant and sustained growth.

Table 1 GDP of Panama 2011 - 2018

year	PIB
2011	$ 34,686,200,000.00
2012	$ 40,429,700,000.00
2013	$ 45,600,000,000.00
2014	$ 49,921,500,000.00
2015	$ 54,091,700,000.00
2016	$ 57,907,700,000.00
2017	$ 62,219,000,000.00
2018	$ 65,128,200,000.00

Source: https://datos.bancomundial.org/indicador/NY.GDP.PCAP.CD?end=2019&locations=PA&start=2011

On the other hand, the behavior of the economic and labor characteristics of non-financial companies is very interesting, according to Table 2 we have the following:

Table 2 Economic and Labor Characteristics of Non-Financial Companies of Panama 2011-2018

year	Total Companies	Total Revenue	Purchases and Expenses	Remunerations	Busy staff		Total staff employed
					men	women	
2011	8,792	49,335,421	43,846,328	3,855,297	206,429	138,171	338,945
2012	8,739	54,023,452	48,007,466	4,292,636	202,566	138,124	338,530
2013	8,646	55,565,043	48,323,508	4,800,342	207,132	149,958	353,673
2014	8,644	56,349,636	48,620,310	5,236,965	211,408	148,976	357,627
2015	8,549	54,143,382	46,606,244	5,853,107	218,457	164,887	380,837
2016	8,670	52,177,001	43,448,435	5,961,336	217,564	163,003	380,752
2017	8,236	54,842,758	46,759,678	6,202,014	211,808	163,029	374,837
2018	8,097	55,329,474	47,234,314	6,328,969	210,871	160,377	371,248

Source:https://www.inec.gob.pa/publicaciones/Default2.aspx?ID_CATEGORIA=4&ID_SUBCATEGORIA=17

The result of establishing the presence or absence of correlation between the study variables, we find the following:

Table 3 Results of the crossing of the variables.

Independent Variable	Dependent Variables	Pearson's Correlation Coefficient (R) and its p-value		Coefficient of Determination (R2)
PIB	Number of Non-Financial Companies	-0.849	p<0.05	0.720
	Number of Staff Employed	0.876	p<0.05	0.768
	Total, Revenue	0.483	p>0.05	It is not calculated based on the p value of the "R" being greater than 0.005
	Total, expenses + purchases.	0.52	p>0.05	It is not calculated based on the p value of the "R" being greater than 0.005
	Total, Remuneration	0.988	p<0,01	0.977

V. Discussion

Based on the GDP data, which appear in Table 1, we can identify that there is a link between GDP and economic growth, which impacts labor growth, however, it does not represent the same level of economic growth, which as explained in previous lines, are influenced by other factors that limit investments and creation of new companies.

Table 2,on the economic and labor characteristics of the companies under study, shows us that, in 2011, there were the largest number of non-financial companies in the country, which are decreasing their presence year after year; without this situation compromising income, on the contrary, to lower companies higher incomes.

As for the employed personnel, it varies with a trend of increasing in 2015 with 380,837 people employed, keeping small difference to 2016, with 380, 752 people employed; then since 2017 continue to decrease, but always with amounts higher than those contracted in 2011 that amounted to 338,945. In other words, contrary to what might be expected, as the table shows, a greater number of established companies did not increase employment opportunities.

On the other hand, if we observe the disaggregation of human resource data by gender, it is observed that there are fewer job opportunities for women, maintaining a higher average of more than 50 thousand employed men, in relation to women.

As for purchases and expenses, it is interesting to note that in 2014, for example, it was the year with the highest revenues of 56,349,636 and purchases and expenses reaching 68,620,320, which shows the opposite of the hypothesis that many propose that during the electoral processes there is a tendency to shrink the economy.

The results of the research presented in table 3 are very interesting, on the one hand, we have that there is a correlation between GDP and the number of non-financial companies, but not in the expected way, instead of increasing, they are decreasing; but at the same time the number of employed personnel increases despite being fewer companies. But what is most striking is that there is no correlation with income, purchases + expenses, however; whether there is correlation with remuneration. To such an extent that even the coefficient of determination presents a result of 0.977

VI. Conclusion

1. Non-Financial Companies are an essential pillar in the economy of any country and the market system.
2. There is a correlation between the behavior of GDP and the number of Non-Financial Companies, but the fact of increasing GDP in the case of Panama does not necessarily imply that many new companies were created.
3. Despite the increase in the country's GDP and wealth, from 2011 to 2018, this increase in GDP did not translate into an increase in Non-Financial Companies.
4. According to the analysis of the data, we have no correlation between the behavior of GDP and the income of Non-Financial Companies. It would be expected that, if GDP increases, somehow the incomes of these companies will increase.
5. It is also evident that we have no correlation between the behavior of GDP and the variable purchase and expenses of Non-Financial Companies.
6. There is a significant correlation between the behavior of GDP and remuneration of Non-Financial Companies of Panama between 2011-2018.

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