

# A Perspective on the Competitiveness of the Colombian Productive Sector, from Face to Internationalization

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## Abstract

This document seeks to contribute to the debate on Colombia's international competitiveness through a proposal that covers the economy as a whole, but that especially focuses on the Colombian manufacturing sector (as a generator of added value) and the economic environment in which they are immersed. Although, the importance of the firm, it is argued that the macroeconomic, sectoral and institutional factors are one of the main determinants of productivity achieved by firms, the added value and the competitive embed achieved in both the national and international markets. For this document, statistical and documentary information is used, from government agencies and various authors in order to contrast and support the above.

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**Index terms**— colombia, manufacturing, industry, productivity, competitiveness, international trade policy.

## 1 Introduction

oday, Colombia faces globalization with a serious lack of competitiveness. The technological lag that characterizes it, the scarce development in logistics and transport infrastructure, the little innovation carried out by its firms in aspects of production and others of organizational type, as well as the low participation of the industrial and manufacturing sector in the exports of the country and in total GDP, have contributed to the deficient performance of Colombia in the world scenario.

The weakness of the manufacturing productive sector and the constant fall, from 1980 to 2017, of the Industrial Added Value/GDP ratio, which has gone from 24% in the 80's, and before the opening, to 13% for 2017, they reflect the inability of firms to produce more valuable and differentiated goods in the market, determining the lack of competitiveness that today punishes the reality of Colombian international trade and the economy as a whole.

This almost inexistence of industrial sector in Colombia, several authors have called it as a stage of "premature deindustrialization", reflected by a growing dependence on the production and export of hydrocarbons, essentially oil and coal, forged mainly by the increase in their international prices, but which makes it clear that it is not an improvement in the capabilities and resources of innovation and production of Colombian firms (Penrose, 1959). Following the above, the National Planning Department and the Ministry of Commerce, Industry and Tourism, entities in charge of the country's trade policy, argue that today Colombia is not experiencing a process of deindustrialization, but that it is a stage of economic slowdown, and that therefore the strident preoccupation and the demand of industrial policies that call for academic and business cries to improve competitiveness are not justified.

The argument on which these organizations are based is that the Government has already created the macroeconomic foundations and the necessary programs so that the companies and the economy have a better performance. Although it is demonstrated that macroeconomic variables have an important influence on the good performance of an economy, these are not the only factors that support it. A more detailed look at the companies and the productivity with which they develop is what really matters when designing policies that

### 3 PRODUCTIVITY OF THE TOTAL SUM OF FACTORS IN COLOMBIA A) LABOR PRODUCTIVITY INDEX IN COLOMBIA

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make a nation competitive and not the other way around (Porter, 1990; Rugman, 1999), since the first they make the capabilities of the signatures enhanced. The synergy and strategic mix that is generated between the macroeconomic variables and those that depend exclusively on the firm, as well as the symbiosis between the Government and the companies, based on innovation and new ideas, are an important way to make. Therefore, this essay proceeds as follows: in addition to this introduction, section II will examine the competitiveness factor associated with the average productivity of labor in Colombia, as well as an approximation of this variable in the industry manufacturing. In section III, some macroeconomic conditions that impact on the efficiency and competitiveness of firms will be considered; understanding the latter as the point where development policies and strategies should be specified. Section IV proposes some paths or recommendations for a new design of the commercial policy that will make Colombian firms gain international competitiveness. It ends with a series of conclusions.

## 2 II.

### 3 Productivity of the Total Sum of Factors in Colombia a) Labor productivity index in Colombia

The analysis of Total Factor Productivity (TFP) as an indicator of efficiency has been developing since the 1950s with the Solow trials (1956), remaining valid with the ideas on the competitiveness of Porter (1990), the Inter-American Development (BID) (2010), Delgado, Ketels, Porter and Stern (2012) and Haltiwanger and Eslava (2017).

The Productive premise allows us to evaluate, in part, the performance of companies and industries, since they are the first ones that consequently conform to the second (industries) (Porter, 1991), where firms must use a series of capacities and tangible and internal intangible resources, which are used to increase the production of their goods and/or services, although without ignoring the relevance of the existence of certain exogenous variables (such as institutions and policies) that determine the efficient use of said own resources, (Peng and Heath 1996, Peng, Li, S; Pinkham and Chen 2009); and that determine other competences in the way that allows them to gain competitiveness and improve their performance.

In this sense, if we look at the performance of Colombian aggregate labor productivity, we have that, as shown in Figure 1, labor unproductivity within firms has been increasing. Since 2000 Colombia has shown an unproductive trend, where a greater number of workers has been necessary to reach the level of production, and only if it is compared with similar economies such as Mexico and Chile during the years 2000-2006 shows to have had a better performance productive; however, after 2006 this advantage is reversed and Colombia is overtaken by Chile and in 2011 by Mexico, with important differences, especially with the latter, although not extremely important since 2014, where they seem to converge. Although these neighboring countries show a similar behavior among them, the situation when compared with advanced countries such as Switzerland, the United States or Denmark, makes the gap really exist and be dramatic. Although the productivity of labor in each of the countries has been increasing, from 2000 to 2017, except for 2009 when in all countries this indicator falls as a consequence of the 2008 crisis, the most advanced countries present a rate of growth, from year to year, greater than the other countries in the sample. In Colombia, for the years 2010-2011, productivity increased by 4.73% and for 2011-2012 this productivity reached 4.96%. On the other hand, in countries such as Chile and Mexico, in the 2010-2011 period said productivity varied by 7.11% and 7.36%, respectively and for the periods 2011-2012, their productivity moved. What seen from this perspective supposes an important lag of Colombia in the region with regard to Labor productivity.

Comparing with more advanced countries such as Switzerland, the United States and Denmark, the gap is also important. While our labor productivity rates vary from year to year by 0.24%, approximately, they do so at 1.50% and at a faster pace; putting us at a serious disadvantage to compete in international markets. Behind this productivity indicator, there are many variables that determine it. For example, the education system of the country and the rules that govern it, labor flexibility, the ease of access to education, the productivity of the sectors, among others. For example, the costs of hiring and firing people for companies are relatively high. Fedesarrollo's studies calculate that for an employer the hiring costs, different from the salary, increase by 73%, due to the contributions that the bosses-ICBF and SENA must make.

Additionally, workers who are employed by means of a contract must compulsorily quote health and pension, which increases their transaction costs and this translates for them into a decrease in their income and consumption. These variables constitute an important reason for people to consider hiring and hiring in companies that are not legally or informally constituted. This is a crucial issue of competitiveness if we consider that these informal companies will find it difficult to be more productive since access to credit, which allows to increase installed capacity, invest in R & D, allocate budget for marketing and advertising, etc., will be denied by banks since they only grant loans to legally constituted companies. Also informal companies will have little opportunity to improve since the attraction of trained personnel will be limited because if the company is not productive it will not be able to pay better wages that persuade the workers and therefore in these companies the hand will prevail of unskilled and unspecialized works, making firms lose competitiveness by not having a stock of human capital that promotes Research, innovation and development.

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If we add to the previous line the fact that, according to DANE statistics, by the end of 2012 57% of the business sector was in the informal sector and 51% of the workers were employed under these informality schemes, we would have a problem more complex and of a structural nature, where the quality of our human capital is deteriorating, as are our companies and where the policies carried out to date are not going in the right direction, since they are generating an adverse effect on the achievement of competitiveness, further promoting the unproductive sphere of informality.

## 4 b) Total Productivity Index by industrial sector in Colombia

Consider the examination of the most productive industries in Colombia and their geographical location, is to consider the productivity of the firms themselves, and that implies a starting point for the strategic creation of trade policies, focused on the most promising sectors for Colombia.

According to studies by the Banco de la República, the productivity of the total sum of the productive factors in Colombia differs from industry to industry and from city to city (Iregui, Ramírez and Melo, 2006). According to Figure 2, for 2016 the industries of various beverages and foods, of paper, of ferrous materials and that of chemical substances and other chemical products (cosmetics), constitute the most productive industries in the country. These industries are located mainly in Bogotá, Cartagena, Cali, Medellín and Barranquilla and exceed, in some cases, the average index of 100. On the other hand, we have that the least efficient or least productive industries are the textile and clothing industry. clothing, footwear and furniture and accessories manufacturing. In each of the regions studied these industries are the common denominator and their pattern of inefficiency is repeated. Likewise, there are industries that do not have very low productivity indicators (they are higher than 50), such as those of non-metallic mineral products, manufacturing of metal products, construction of machinery-except the electric and transport material industry. These industries, although they do not have high levels of efficiency, if they are to be taken into account, not only because they remain in the average range of productivity, but also because they are sectors that serve as inputs for other industries and their specialization and development would become the specialization and development of those sectors to which it provides. In this way, the aggregate productivity levels of the country are increased, and with this competitiveness for Colombia (Porter, 1981).

This partial productivity test may give rise to some reflections on the good or bad decisions that have been taken today in matters of commercial policy. Noting that there are low productivity industries, such as textiles, garments and footwear, it is not logical that today they are the same industries that are protected by tariffs, as was done in January 2013 and until today. While it is true that there is a strong competition that is China and that this affects the workers of these industries due to the displacement generated by imports and that creates a reduction in jobs internally, it is also true that since the opening this has been I saw it coming and that the policies for its use have been of low impact and that on the contrary they have fostered greater inefficiency.

Ignoring the fact that some industries fulfill the function of providing for others, generates worse losses than those prior to free trade. Following the case of textiles and the garment sector, while textiles are protected with an ad-valorem tariff of 5% to 10% per kilo imported, not only is an inefficient industry being protected, but they are also increasing the costs for the manufacture of garments, an industry that is also protected; making the protection rates for garments ineffective, thus continuing the vicious circle of unproductiveness, since neither of the two industries will advance, especially that of confection, with such high production costs (Krugman and Obstfeld, 2010).

On the other hand, we have, through the Program of Productive Transformation, created in 2004, the policy has also focused on efficient sectors such as chemicals and their preparations and transport material, making today the companies of these industries, to a greater degree that of chemical preparations, have been developed under the fundamental principle of innovation and differentiation, key to the success of the firms. At this point, the subsidiaries have played a fundamental role, since these were the ones that settled in Colombia with new ideas of innovation in their products.

Although the PTP was an approach for the development of strategic industries in Colombia and with export profiles, it fell short of proposals, since the deepest needs of the sectors go beyond the positioning of these products in the international market or their products. international flows; these needs are even more important, seeking to be a source of positive technologies externalities, especially those of the engines that concern other industries, and that the articulation between these is the opportunity to generate more value to the demand and supply, national and international.

## 5 III. Efficient Macro Policies for Micro Efficiency

The structural adjustments are of general impact with transcendence in the particular. Failures in key general aspects of competitiveness in Colombia and affecting the micro level, are in the low activity and lack of solidity of the institutions in charge of each of the aspects that affect the country. As a result of such inactivity, important deficiencies are now observed in aspects such as the road infrastructure that connects the country, where, by 2017, only 40% of the total roads and streets were paved (World Economic Forum, 2018) and therefore it translates into an increase in the transaction costs of the firms when doing business.

A macroeconomic policy regarding public spending on R & D is of vital importance. The current government has been reducing the budget given to Colciencias, an entity that promotes Research and Development in Colombia. Today said spending on R & D is only 0.53% of GDP, which represents a major impediment to the development of competitiveness in the country.

If this percentage is compared with that of other countries in South America, Brazil or Chile, who allocate approximately 1.2% of their GDP; or with more advanced countries such as the United States, Germany or Sweden, among others, who allocate 3%, in the case of the United States, to 5.5%, in the case of Germany and Sweden, of their GDP (Data World Bank ), we can find the reasons why these countries do have products and a more diversified and sophisticated export basket than ours; and that where a devalued currency does not constitute the primary factor to gain international competitiveness.

This last factor has been crucial in the loss of competitiveness of Colombian products abroad, since the sustained revaluation of the peso in recent years has caused our products to become more expensive in the international market and reduce our sales. Although an economy that is in the process of development, such as the Colombian one, a devalued currency is synonymous with competitiveness, it is clear that in view of the volatility with which the world moves, this must be The tiny Colombian expenditure on R & D not only does the Government, but also replicated by our companies, allocating only 0.28%, as a proportion of GDP; making the Colombian situation even worse. The most prominent investment that firms make is in technological modernization, which is important but not enough, since there are other factors also relevant such as innovation and the development of new and more sophisticated products, which is achieved through research (Private Council of Competitiveness, 2016).

Thus, one can observe a bad focus on the strategy of both the Government and the companies, since, and following the words of Porter (1996), the strategy is not to do what is necessary or something like it and improve it, or to resort to the latest practices, as promoted by current policies; It means finding a place where our industries generate value.

In this order of ideas, if we stay focused on equalizing processes or doing things a little better we will not be able to shine, the brightness does not depend on whether it is a very large or very small company, or an advanced or emerging economy, the brightness is a function of the ability to improve and create at the same time, generate differentials in products and services as well as in the way of governing, deriving value for all parties because this will depend on the success or failure of the company and as a consequence of your nation. For all the above, it is evident that an efficient macro structure, generated by the development policies proposed by the governments, are essential for a good and productive performance of national companies. The high prices of fuel, of cement for the construction sector, as well as the low development in electricity infrastructure are also deficiencies that house our macroeconomic policies. These problems are fundamental to solve them because with inadequate infrastructure transport times are increased, the value of the freight is increased and therefore the final price of the goods increases, which generates a zero-sum game, where the inevitable losers will be producers and consumers, while the profits will undoubtedly be obtained by the transport sector and oil suppliers at the expense of all.

It is important to specify that the objective is not to benefit the most "important" or more productive sectors, but to create value in each of the links that make up the productive chains of companies, therefore, a focus on the non-productive goods industry. tradable is also indispensable (Porter, 1990).

## 6 IV.

Proposal for the Design of a New Commercial Policy that Promotes the Competitiveness of Colombian Firms Competitiveness is not something static, but lies in the constant improvement and innovation, and requires that the programs for its achievement are based on strategies that identify points of flexibility that can be modified without altering its essence, and that rather create comparative advantages different dynamics (Gunther, 2013).

The trade policy that has characterized the country has been a policy of reaction rather than creation. Its approach has been in response to the effects that new international conditions have had on the interior of the country, without being able to have the space to make deeper or better focused decisions, resulting in the discernment and understanding of the needs of each one of them. the Colombian industries. Therefore, for Colombian trade policy to work, and with it our competitiveness, it does not depend solely on one governmental entity but on many, nor does it depend on a single policy, it depends on many other needs such as education, health, innovation, culture , among other.

Competitiveness is not separated from social development, it is more, this is an imperishable union that demands a healthy society and in favorable conditions in their living standards, so that the productive apparatus can also grow. It is for the foregoing that some paths are proposed for a better design of trade policy and development in Colombia, which will make us gain international competitiveness:

1) The signing of FTAs does not guarantee that our products have definitive access to the linked markets. Failing to consider our shortcomings and our needs is the biggest mistake, which has managed to overshadow the benefits of this type of agreement and for which the population today declares its most complete disagreement. Just as the unions and producers of the industries that compete with imports are grouped and press the decisions of the Government, it is necessary that the exporters have an equal concentration. The concentration of these groups makes the needs of their members better heard. The representativeness in these associations is fundamental

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to make the requests effective and work efficiently to be included in the policies. where the specialization at each level that conforms to it is vital. This knowledge is also determinant for the creation of Colombian industrial policy. Knowing this relationship is key to creating truly effective protection rates and not repeating the errors found in the PTP. These agglomerations allow to reduce transport costs, times, increase the flow of inputs, of people, due to its geographical proximity, making the sector more productive. The knowledge of the industries allows to converge also according to their interests. These interests can be based on the suppliers, the target market, the technology used, among others, which allows strengthening the capabilities of those who make up the clusters and develop their productivity. This makes it possible to identify spaces that companies take advantage of to differentiate themselves from the competition. 11) Access to international financing through international multilateral banking is necessary to face the development policies that are required. 12) Making our demand and our institutions a worldclass bet is undoubtedly a national responsibility. Not having solid and demanding institutions with requirements that guarantee admissible levels of risk in their products and services is a factor that not only makes these institutions competitive, but also shapes our demand, making it as demanding as the international one. 13) The programs that are carried out and the valuable ideas that are developed, must be without a doubt state policies, and thus avoid the constant change in the objectives that are outlined by companies and governments, and the uncertainty that this entails. Create a single country approach 14) Finally, a revolution is necessary in the ideas of those who govern us, and even more so, of us as a society. Creativity is there to be exploited and implemented in visualization as a country, and in the solution of its setbacks. Appealing to the old policy instruments is already evident that they do not work, times changed, as well as the magnitude of their problems, therefore, one must be bolder in the design of policies, although here I do not represent it! must be installed "chips" renewed in the citizenship, different to those that have implemented the pessimism and the limitations derived from the war (here, advertising and government management, play an important role), because only then, Colombia will play and will compete as a world-class Team.

V.

## 7 Conclusions

Competitiveness is not something static, but something dynamic; Therefore, innovation and creation must be constant.

Being competitive depends on an efficient and flexible macro character structure and a micro nature. The first is determined by the development policies that are created in the country, which affect the micro sphere (companies) and the nation as a whole. These policies are economic, social, labor, etc., which build a framework that influences the decision making of the different agents of a nation. The second structure is made up of the productive sector, that is, companies. The effective mix that exists between these two types of structures is a compelling reason why an economy can gain or lose competitiveness.

The growing boom that the mining-energy sector has had in Colombia, forged mainly by the increase in its international prices, has caused the Colombian industry to be neglected, since it has generated a concentration of efforts, policies and aid towards this sector, leaving Neglected the needs of the industrial sphere.

The productivity of the total sum of the factors of production in a nation (TFP) and the individual examination of the productivity of the labor factor is a very important measure to assess the competitiveness of a country. Colombia presents high gaps in labor productivity not only with developed countries, but with their neighboring countries. While in Colombia for 2012 the productivity of work grew by 4.96%, Chile and Mexico grew at rates of 10% and 7%, respectively, which generates an important lag for Colombia in the region, in terms of competitiveness.

An examination of the TFP in the most important sectors of the country, it is found that their productivities differ from sector to sector and from city to city. Thus, the most productive sectors are those of processed foods, paper and chemical products, located mainly in the cities of Bogotá, Cartagena, Medellín, Cali and Barranquilla, which means that a redistribution of the factors towards these potential sectors must be made. We also have unproductive sectors, such as clothing, textiles and footwear, which are now protected, and which in the words of Krugman and Obstfeld (2010), what this protection does is to create more inefficiency and less competitiveness of the industry and the companies that work in it.

The macro conditions that surround the country are truly inefficient. Inadequate infrastructure, low public spending on R & D, the imbalance of the labor market, as well as the costs of hiring and firing workers constitute an important barrier to the good performance of companies. Concluding that it has been the policies that have been misdirected and those that have allowed the poor performance of the companies and the economy as a whole. Of course, the private sector is not blamed for not creating strategies to differentiate their goods and/or services. <sup>1</sup>



Figure 1: Figure 1 :



Figure 2:



Figure 3: Figure 2 :

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continuous monitoring of these, is an option of this type of mutual aid.

- 3) Companies should be understood as the axis where public strategies are specified. It is convenient to consider that the role of Procolombia and the Chambers of Commerce of the country should be oriented to firms and investors have specific and sophisticated market studies, and not as widespread as today. The model of the "five forces" strategically posed by Michael Porter in the 1990s must be vigorously promoted in these institutions, since it would be possible to propose a better approach for decision-making; understand how different industries are related, identify their limits and re-conceptua-

markets; and within many other variables, understanding

- 4) international demand, and companies must comply.

the demands to characterize

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2) Deepening the articulation between government and

business, is transcendental. The synergy between the Public and Private spheres is fundamental if we want to generate an important transformation in the country's competitiveness. Here the fiscal incentives to companies for investing in large-scale works in the municipalities and less favored departments and the





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