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VOLUME 19    ISSUE 1    VERSION 1.0



GLOBAL JOURNAL OF MANAGEMENT AND BUSINESS RESEARCH: B  
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VOLUME 19 ISSUE 1 (VER. 1.0)

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GLOBAL JOURNAL OF MANAGEMENT AND BUSINESS RESEARCH: B  
ECONOMICS AND COMMERCE

Volume 19 Issue 1 Version 1.0 Year 2019

Type: Double Blind Peer Reviewed International Research Journal

Publisher: Global Journals

Online ISSN: 2249-4588 & Print ISSN: 0975-5853

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

By Lemos Mejía & María Ximena

*University Center of Economic Administrative Sciences*

**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.

**Keywords:** colombia, manufacturing, industry, productivity, competitiveness, international trade policy.

**GJMBR-B Classification:** JEL Code: D23, F13, M21



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

Lemos Mejía <sup>α</sup> & María Ximena <sup>ο</sup>

**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.

**Keywords:** colombia, manufacturing, industry, productivity, competitiveness, international trade policy.

**Resumen-** El presente documento busca aportar al debate sobre competitividad internacional en Colombia a través de una propuesta que abarca a la economía en su conjunto, pero que especialmente se centra en las firmas del sector manufacturero colombiano (como generador de valor agregado) y el entorno económico en el que se encuentra inmerso. Si bien, la competitividad que logran las firmas depende en gran medida del esfuerzo propio de estas, se argumenta que los factores macroeconómicos, sectoriales e institucionales son uno de los principales determinantes de la productividad que alcanzan las firmas, del valor agregado que generan y del enclave competitivo que logran tanto en el mercado nacional, como en el internacional. Para el presente documento se hace uso de información estadística y documental de organismos gubernamentales y de diversos autores, con el fin de contrastar y soportar lo expuesto.

**Palabras clave:** colombia, industrial manufacturera, productividad, competitividad, política comercial.

## I. INTRODUCTION

Today, 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 make a nation competitive and not the other way around (Porter, 1990; Krugman, 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 a more prosperous country (McGraham and Porter, 1997).

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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.

## II. 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.

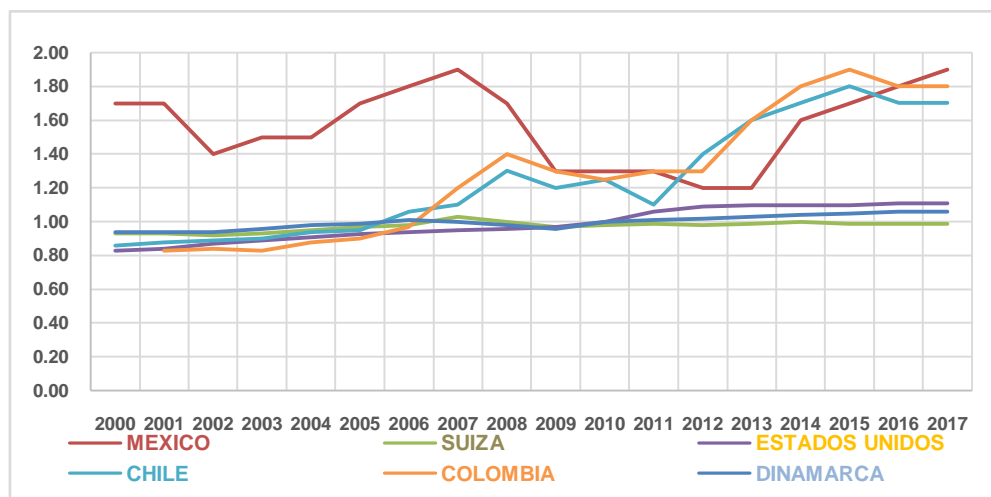


Figure 1: Labor Productivity: Colombia, Mexico, Mexico, United States, Switzerland and Denmark. 2000- 2017. The index is in its entirety from the total national production (GDP in constant dollars of 2010) and the amount of work in that production.

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

in greater proportions, 10, 85% Chile and 7.78% Mexico. 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.

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.

*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.

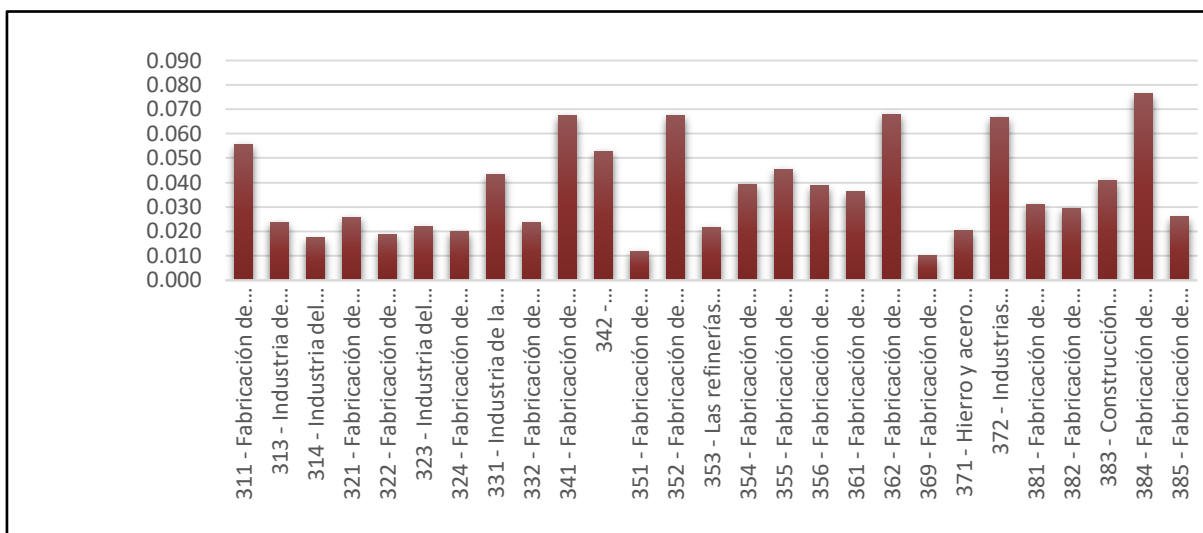


Figure 2: Total Productivity Index, by Industry. 2016. Own elaboration based on CepalStat

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.

### 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 changed, since it is this type of clashes that today they immerse us in great economic and social problems.



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).

#### 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 to make the requests effective and work efficiently to be included in the policies.*
- 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*

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 reconceptualizations, understand to what extent institutionality is facilitating competition or failures in markets; and within many other variables, understanding the demands characterize international demand, and companies must comply.
- 4) By having the previous detailed knowledge of the industries, it is necessary to open the way to the creation of Clusters and make them more efficient, 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.
- 5) A policy that promotes and legitimizes the Government's expenditure on Research and Development is Right Now! The Government must increase its spending, at least 2.0% of GDP in R & D, this budget can not be left to the availability of resources. It is a cost that must be assumed obligatorily. For those companies whose inventions are applicable in other sectors, spillovers, the tax exemption can occur for a sustained period.
- 6) Being a country rich in Natural Resources already makes us rich, but not knowing what to do with them and leaving them in their simplest presentation (as raw materials) is what stagnates us. Therefore, the manufacture of this type of goods should be the direction taken by this sector. Making it more productive does not depend, in principle, on the peasants, it also depends on the most technified companies that can efficiently produce them and manufacture them in union with the peasants. Because of this, better conditions of access to credit, effectively lower interest rates, training in agriculture, but also in financial management, are some needs for agricultural projects to generate value.
- 7) It can not deny the benefits generated by Foreign Investment in any type of economy. But these benefits can not be absorbed if you do not know where to direct it. Today productive sectors such as beverages and food products, as well as the chemicals sector, can be large recipients of FDI and can these complement their techniques. Local content requirements for such investment is valid insofar as the local industries that provide inputs are specialized and can benefit from said FDI. For this, specialists in the field, for this chemical case, as well as the dialogue between Pro Colombia, health entities, and companies, is essential. These dialogues are precise that are from now on so that we Colombians who decide that Investment is the necessary to attract and how to obtain their benefits. Foreign Investment has a close relationship in the formation of clusters. If, for example, for the FDI that reaches the mining sector today clusters that provide tools, parts or pieces of their machines, would not impose requirements of local content, but the use of our inputs would be something natural. For this, an attitude and an aptitude to apprehend and create knowledge is fundamental to develop these productive schemes.
- 8) If for our exporters there is no local industry that provides high quality inputs is necessary to dismantle tariffs and requires a thorough study by the entities in charge.
- 9) Productivity and competitiveness is a function of many more elements and education is a factor that can not be ignored. Improving quality and pedagogy in primary, secondary and higher education, as well as ensuring free access to these, is vital to make Colombia an epicenter of well-educated people, even from an early age, with skills focused on the labor market. We must emphasize technical education, we are a country that does not reach a high level of development, therefore, technical work is demanded at all levels of production in the country, know how to do, and from here you can start to make the productive apparatus of the country.
- 10) The labor market is also a determinant indicator of competitiveness, for this reason, policies that forge labor flexibility are important to eliminate obstacles that increase the inefficiency of this market and cause many companies today to leave informality and decide to contract in the formality.



- 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 world-class 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. 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.

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GLOBAL JOURNAL OF MANAGEMENT AND BUSINESS RESEARCH: B  
ECONOMICS AND COMMERCE

Volume 19 Issue 1 Version 1.0 Year 2019

Type: Double Blind Peer Reviewed International Research Journal

Publisher: Global Journals

Online ISSN: 2249-4588 & Print ISSN: 0975-5853

## Determinants of Exchange Rate Fluctuations of Uzbek Sum

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*Keywords:* exchange rates, interest rate, money supply, net trade, remittance.

*GJMBR-B Classification:* JEL Code: F00



*Strictly as per the compliance and regulations of:*



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# Determinants of Exchange Rate Fluctuations of Uzbek Sum

Zafar Berdinazarov <sup>α</sup>, Khasanjon Dodoev <sup>σ</sup>, Jamshid Mamasalaev <sup>ρ</sup> & Jakhongirmirzo Fakhodjonov <sup>ω</sup>

**Abstract-** This paper examines the determinants of exchange rate fluctuations of Uzbek sum by using three econometric models OLS (Ordinary Least Squares), ARIMA (Autoregressive Integrated Moving Average) and ML ARCH (Multivariate Long memory Autoregressive Conditional Heteroskadasticity). Model results show that the effects of money supply and remittances to the nominal and real exchange rates (USD/UZS) are found statistically significant; the impacts of inflation and interest rate are not econometrically meaningful. Also, it should be noted that the level of net trade influences to the exchange rate is not conclusive in our econometric analysis.

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## I. INTRODUCTION

It is a well-known fact that trade policy plays a crucial role in ensuring a higher level of output and stable price level. To guarantee a high level of Gross Domestic Product and stable price level, the main focus of the economy should be on exchange rate policy. Therefore, here for monetary policy one way to reach its aim is by having a stable exchange rate. It is widely believed that too highly appreciation of local currency depresses the external demand for domestic goods meaning that the amount of export is affected negatively. But at the same time, with too rapid depreciation of local currency, the exporters are unlikely to get benefit from selling their goods. Having considered all, to control and keep the foreign exchange rate at a desirable level for the economy, it is necessary for each economy to define main influencing factors (determinants) of the exchange rate.

## II. LITERATURE REVIEW

Since the economic importance of foreign exchange rate will play a desirable factor for trading economies, there has been taken significant emphasis on the study of foreign exchange rate determinants in recent decades. Determinants of exchange rate volatility have frequently been an area of interest for many macroeconomists worldwide. Still, this subject in transition economies remains empirically unexplored.

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Some of the researches in the cases of other countries will be reviewed in chronological order as follows.

The preliminary interests on this study commenced after the introduction of optimal currency area by R. Mundell [1] in the 1960s and constitution of European Monetary Union where floating exchange rate has been considered an optimal policy for *Euro zone*. Consequently, majority macroeconomists were involved to examine the factors of exchange rate volatility. One of them, A. Rose et al. [2] reported that the best interference instrument in exchange changes in interest rate which is an independent variable which explains the sensitivity of exchange rate. Whereas, D. Ariccia [3] proved that exchange rate volatility is also affected by financial variables, especially external debt.

'Fisher effect' a theory proposed by Irving Fisher also describes interest rate differential tend to reflect the exchange rate expectation. The assumption further illustrates that an expected change in the current exchange rate between any two currencies is approximately equivalent to the differences between the two countries the nominal interest rates for that time [4, 5]. Spot exchange rate is expected to change equally but in the opposite direction of the interest rate differential. Thus, the currency of the country with the higher nominal interest rate expected to depreciate against the currency of the country with the lower nominal interest rate, as higher nominal interest rate reflect an expectation of inflation. High real interest rate significantly reduces exchange rate volatility [6].

Madura, J. [7] proved that in the long run, it is not the ideal relationship between exchange rates and inflation rates differential. However, he argued that in the long run, inflation differentials might be used for forecasting of exchange rate volatility. An exchange rate is not only determined by the domestic interest rate, but it is also influenced by the changes in the interest rate by the major world economies. Hence, it may be concluded that in case of a single economy, a negative correlation exists between exchange rate volatility and interest rate [8].

While the focus of the previous literature has been on the effect of exchange rate uncertainty on the incentive impacts on net trade, a few authors have examined the "reverse" relationship on the impacts of international trade on the exchange rate. Mundell's [9] optimal currency area assumptions suggest inverse causality, whereby trade flows stabilize real exchange

rate fluctuations, hence reducing real exchange rate volatility. Broda and Romalis [10] state additionally that such causality should be addressed as "...most of the exciting studies have focused on the effects of exchange rate regimes or volatility on trade by assuming that the exchange rate process is driven by exogenous shocks and is unaffected by other variables.

Broad research has been accomplished to check the remittance and exchange rate relationship. During the panel data analysis of 13 Latin American economies over 20 years, Amuedo-Dorantes and Pozo [11] exposed that worker remittance appreciates exchange rates. Also, the researchers claim that doubling the remittances to GDP ratio led to a real exchange rate appreciation above 22%. In a relevant analysis, Barajas et al. [12] disagree that the effect of remittances on exchange rates varies across countries. More lately, Mandelman and Acosta [13, 14 and 15] checked that remittances are a cause of real exchange rate appreciation. Similar results are taken in other panel initiatives conducted by Hassan and Holmes [16]. In contrast, Rajan and Subramanian [17] for instance,

argue that remittances do not result in the phenomenon known as the Dutch disease (negative consequences arising from considerable increases in the value of a country's currency from any significant influx of foreign currency into a country).

Lately, Tariq [18] conducted research to examine the correlation of money supply and exchange rate volatility in the case of Pakistan. By empirical evidence, it is concluded that money supply has a reverse relationship with exchange rate volatility. It has also been found that money supply (policy variable) has an inverse relationship with exchange rate volatility. Therefore, to restraint the exchange rate volatility, money supply may be efficient.

### III. DATA DESCRIPTION

To define exchange rate determinants in Uzbekistan, the study hypothetically sets the following five variables throughout 2007q1-2018q1: money Supply (M2); net export (export-import); inflation; remittances and interest rate (see Table 1).

Table 1: Summary Statistics

	Nominal Exrate_ Official	Rem_S	M2	Net_Trade	Infl	I_Rate
Mean	2342.109	4044.035	2.73E+13	547.2689	2.877647	15.98889
Median	1914.800	3500.145	2.32E+13	595.1000	2.986291	16.20000
Maximum	8156.680	13223.96	7.41E+13	2015.500	7.871467	20.20000
Minimum	1243.600	356.8818	4.72E+12	-769.0000	-0.034984	13.40000
Std. Dev.	1485.075	2912.185	1.95E+13	602.3994	1.813764	1.795857
Skewness	2.806774	0.975118	0.951092	0.259045	0.213938	0.133564
Kurtosis	11.07957	3.766163	3.068164	2.648873	2.635516	2.188610
Jarque-Bera	181.4839	8.232043	6.793035	0.734452	0.592361	1.368210
Probability	0.000000	0.016309	0.033490	0.692653	0.743653	0.504542
Sum	105394.9	181981.6	1.23E+15	24627.10	129.4941	719.5000
Sum Sq. Dev.	97039753	3.73E+08	1.67E+28	15966942	144.7486	141.9044
Observations	45	45	45	45	45	45

According to the table of the summary statistics, quarterly average official exchange rate (\$1 USD=UZS) was equal to approximately 2342 UZS for the period. Indeed, the figure above illustrates that the minimum exchange rate stood at 1243 UZS at the beginning of the selected period, while the maximum exchange rate was 8156 UZS per a US dollar. However, quarterly interest rate and inflation rate fluctuated over the period and made up an average of 16% and 3% respectively. Even though there were some fluctuations in interest rate, its overall trend was downward. The quarterly inflation rate was unstable between 2007q1 and 2018q1. The mean of money supply (M2) during 2007Q1 – 2018Q1 was equal to around 27.3 billion per quarter.

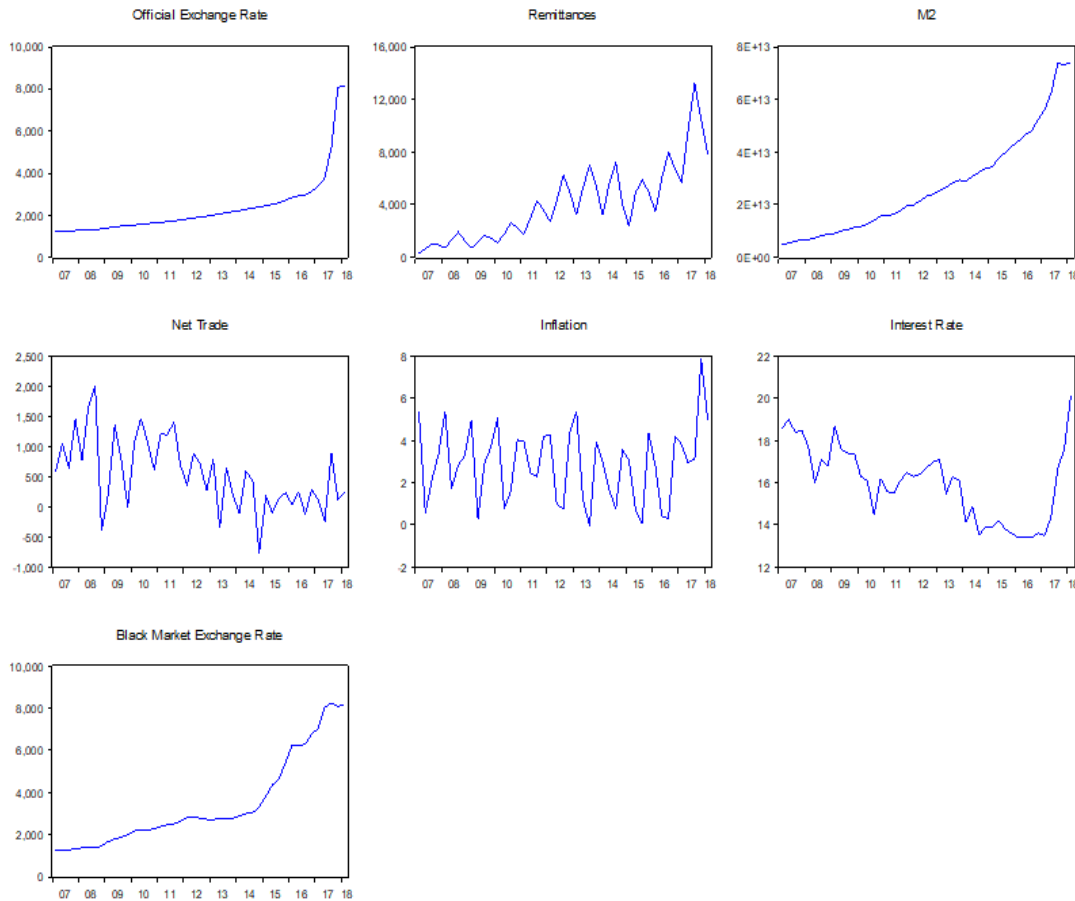
According to the summary statistics table, minimum money supply equals 47.2 billion UZS, while maximum M2 was equal to 74.1 billion UZS. Furthermore, the quarterly average of the net export was around 547 million USD. It should be noted that the minimum level of net export for the period was negative, namely 770 million USD, while the highest point was almost 2 billion of US dollars. The last but not least determinant of the exchange rate, the average amount of remittances to the host economy recorded approximately 4.896 billion USD in 2017 and 3.827 billion in 2018Q3 (accumulated).

In general, while exchange rate, money supply (M2) and remittances showed an upward trend during



the selected period, interest rate and the amount of net trade in the economy decreased over the time-frame.

Quarterly inflation rate fluctuated over the period ranging from roughly 0 to 8% (See below graph).



Graph 1: Determinants Trend

#### IV. EMPIRICAL METHODOLOGY

Since the underlying research aims to define the determinants of the exchange rate in Uzbekistan economy, it initially approaches to the OLS method to analyze and estimate the extent of the abovementioned variables on the exchange rate. Then, due to the presence of non-stationary and heteroskedasticity, the research is also conducted using one of the time-series models ARIMA and ML ARCH respectively.

The current study also approaches some econometric specification tests. Namely, Breusch-In this empirical study, the standard model is as follows:

$$Y = X(0) + C(1)*X1 + C(2)*X2 + C(3)*X3 + C(4)*X4 + C(5)*X5 + \mu$$

Where:

Y – the logarithm of [exchange rate (\$1=UZS)]

X0 – constant term

X1 – the log of money supply (M2)

X2 – inflation rate

X3 – the logarithm of remittances in USD

X4 – interest rate

X5 – the log of net trade in USD

$\mu$  - error term (disturbance)

Pagan-Godfrey and ARCH tests are applied to determine whether heteroskedasticity is present or not in the obtained data (see Appendices, Table 1 and Table 2). Breusch-Godfrey Serial Correlation LM Test is used to define whether the residuals are correlated across the series (Table 3). Also, whereas the underlying study carries out the Ramsey test (Table 4) to check whether there is the sign of omitting variable or not, the Chow test (Table 5) is applied for detecting the structural break within the taken period.



## V. SPECIFICATION TESTS AND ITS RESULTS

It is evident from Table 1 illustrated in the appendices that p-value of the Breusch-Pagan-Godfrey test is not statistically significant meaning that there is insufficient evidence to conclude that variances are not constant across the series. But ARCH test shows that variances are constant across the series and the sum of the ARCH and GARCH coefficients is very close to one. Moreover, when Breusch-Godfrey Serial Correlation LM test was applied, it was found that there is strong first-level of autocorrelation (serial correlation) across the residuals. At the same time, to define whether the constructed model has omitted variables or not, the

study approaches to the Ramsey test. As it is clear from the p-value, which is equal to almost 0, there is enough evidence to conclude that the constructed model has no omitted variables. Also, to ensure the reliability of the estimates, the study checks whether the data is normally distributed or not, and it found that the residuals are normally distributed by Jarque-Bera (see Table 6 in appendices).

The following table indicates the corresponding coefficients of each regressor included in the model (standard errors of the coefficients in parentheses). Significance levels are depicted by the stars, \* $p < 0.05$ , \*\* $p < 0.01$  and \*\*\* $p < 0.001$  respectively.

Table 2: Model Findings

Explanatory Variables	OLS	ARIMA	ML ARCH
<b>I_RATE</b>			
Coefficient	0.0103	0.0103	-0.0124
Std. error	(0.0153)	(0.0247)	(0.0092)
P-value	0.5030	0.675	0.1776
<b>INFLATION</b>			
Coefficient	-0.0022	-0.0022	-0.0060
Std. error	(0.0131)	(0.0172)	(0.0068)
P-value	0.8654	0.896	0.3823
<b>M2</b>			
Coefficient	1.0073***	1.0073***	0.8175
Std. error	(0.0823)	(0.1153)	(0.0470)
P-value	0.0000	0.000	0.0000
<b>NET_TRADE</b>			
Coefficient	0.0382*	0.0382*	0.0317*
Std. error	(0.0181)	(0.0592)	(0.0165)
P-value	0.0422	0.519	0.0554
<b>REMMITTANCE</b>			
Coefficient	-0.2467	-0.2467	-0.2039
Std. error	(0.0676)	(0.0731)	(0.0338)
P-value	0.0028	0.001	0.0000
<b>CONSTANT</b>			
Coefficient	-14.4112	-14.4112	1.4124
Std. error	(1.6076)	(2.6104)	(0.3852)
P-value	0.3850	0.000	0.0002
<b>R-SQUARED</b>	0.9549	0.9549	0.9167
<b>Adjusted R-squared</b>	0.9492	0.9492	0.9061
<b>p &gt; F or CHI2</b>	0.0000	0.0000	0.0537

Before turning to the next section, it is highly essential to note that interpretations of the obtained results will be provided based on the three models, namely OLS, ARIMA, and MARCH. Starting with the OLS model, the obtained results present that the interest rate has no impact on determining the exchange rate in Uzbekistan economy during the period of 2007q1 and

2018q1. This insignificant relationship between exchange rate and the interest rate is also confirmed by the statistics provided by ARIMA and MARCH models at even 1% significance level. Meanwhile, inflation is not found to have a statistically significant effect on the exchange rate by three econometric models namely OLS, ARIMA, and MARCH.

Turning to the discussion of money supply and its impact on the exchange rate, it is clear that money supply (M2) is found to be an essential factor in determining the exchange rate. Specifically, all selected models, namely OLS, ARIMA, and MARCH indicate that a 1% increase in M2 results in approximately 1% depreciation of Uzbek sums against US dollars. Obtaining the same result through using different models highly confirms and increases the reliability of the coefficient obtained. More strikingly, according to the all models above, net trade and exchange rate are positively associated during the selected period. However, the ARIMA model shows that the effect of net trade on the exchange rate is statistically insignificant (p-value 0.519). As previously mentioned in the literature part, the number of remittances and exchange rate are positively correlated meaning that if the inflow of remittances to the host country increases, it leads to the appreciation of local currency. In our empirical analysis, it is found that a 1% rise in the inflow of remittances in USD to Uzbekistan economy should cause roughly 0.24% appreciation of Uzbek sums against US dollars. The underlying correlation is also affirmed by all three models.

## VI. CONCLUSION

All in all, while the effects of remittances and money supply on the dynamic of exchange rate are found statistically significant, the impacts of inflation and interest rate are not econometrically meaningful. It is also should be noted that the way the level of net trade influences the exchange rate is not conclusive in our econometric analysis.

Having considered all above, the following might be suggested to policymakers and related parties:

- First of all, Central bank should carefully control the level of money supply (M2) in the economy so that it can keep the exchange rate at an appropriate level for the economy;
- Secondly, all conducted econometric models within the study did not affirm the significance of net trade on the level of exchange rate; it is highly emphasized by other studies as stated in the literature review part that it has its positive impact on shaping the level of exchange rate. Therefore, the responsible parties of the government should highly pay attention to the participation of Uzbekistan workforce in other foreign economies, and redirect their salary to Uzbekistan;
- Thirdly, regardless of the fact that the study did not find strong simultaneous evidence to confirm the sensible effect of the interest rate by commercial banks, at least one model shows a strong negative correlation between commercial interest rate and the level of exchange rate meaning that an increase in interest rate should appreciate UZS against USD;

- Finally, since the study found no credible evidence concerning the effect of inflation on shaping the level of exchange rate, while the goal of the government is keeping an appropriate level of exchange rate, holding the desirable inflation rate should not be at the center of feature to consider.

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APPENDICES

Table 1: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.549365	Prob. F(5,39)	0.1972
Obs*R-squared	7.457343	Prob. Chi-Square(5)	0.1888
Scaled explained SS	6.017053	Prob. Chi-Square(5)	0.3046

Table 2: Heteroskedasticity Test: ARCH

F-statistic	3.881121	Prob. F(1,42)	0.0554
Obs*R-squared	3.721995	Prob. Chi-Square(1)	0.0537

Table 3: Breusch-Godfrey Serial Correlation LM Test:

F-statistic	18.12219	Prob. F(4,35)	0.0000
Obs*R-squared	30.34731	Prob. Chi-Square(4)	0.0000

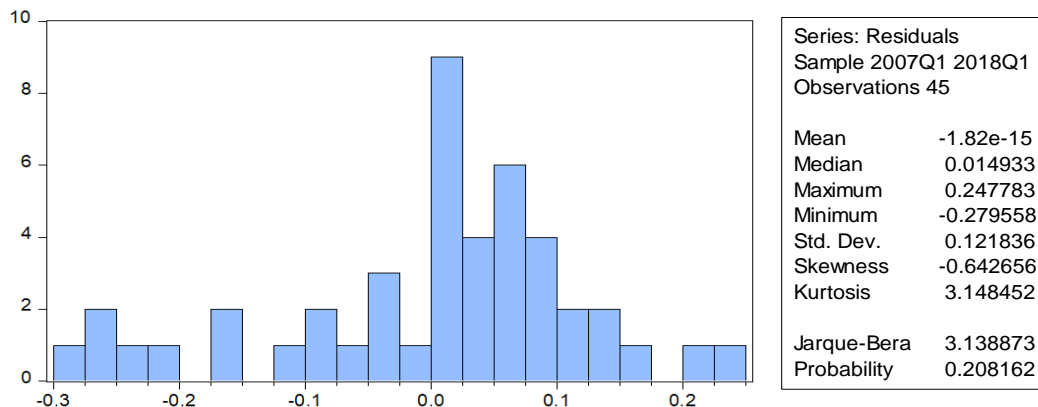
Table 4: Ramsey RESET Test

Equation: EQ01 OLS			
Specification: LN_NEXRATE LN_M2 INFL_I RATE LN_NTRADE LN_REM S C			
Omitted Variables: Squares of fitted values			
	<b>Value</b>	<b>df</b>	<b>Probability</b>
t-statistic	4.349319	38	0.0001
F-statistic	18.91658	(1, 38)	0.0001
Likelihood ratio	18.18002	1	0.0000

Table 5: Chow Breakpoint Test: 2008Q4

Null Hypothesis: No breaks at specified breakpoints			
Varying regressors: All equation variables			
Equation Sample: 2007Q1 2018Q1			
F-statistic	0.554364	Prob. F(6,33)	0.7630
Log likelihood ratio	4.321402	Prob. Chi-Square(6)	0.6333
Wald Statistic	3.326181	Prob. Chi-Square(6)	0.7669

Table 6: Histogram Normality Test (residuals)



*Table 7:* Null Hypothesis: Var has a unit root (non-stationary) p-value

<b>I_RATE</b>	
Augmented Dickey-Fuller test statistic	-1.9640
<b>INFLATION</b>	
Augmented Dickey-Fuller test statistic	-1.5095
<b>M2</b>	
Augmented Dickey-Fuller test statistic	-1.8502
<b>NET_TRADE</b>	
Augmented Dickey-Fuller test statistic	-6.2283
<b>REM</b>	
Augmented Dickey-Fuller test statistic	-0.0558
<b>N_EXRATE</b>	
Augmented Dickey-Fuller test statistic	-0.1353

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GLOBAL JOURNAL OF MANAGEMENT AND BUSINESS RESEARCH: B  
ECONOMICS AND COMMERCE

Volume 19 Issue 1 Version 1.0 Year 2019

Type: Double Blind Peer Reviewed International Research Journal

Publisher: Global Journals

Online ISSN: 2249-4588 & Print ISSN: 0975-5853

# L'effet De L'auto-Efficacité Entrepreneuriale Sur Innovation Entrepreneuriale: Une Étude Auprès Des Dirigeants Des PME Camerounaises

By Abouna Adam Mahamat, Math Mazra & Halidou Mamoudou

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**Abstract-** In such a highly competitive environment and competing with large resource-based firms, the competitive advantage lies in the ability of businesses, especially SMEs, to embrace the entrepreneurial innovation strategy. The purpose of this work is the explanation of entrepreneurial self-efficacy on entrepreneurial innovation of SMEs. To do this, we started from a theoretical framework to formulate the hypotheses that will be tested through a quantitative approach. Multiple regression analysis shows that the model is globally significant. Indeed, the ability to define the fundamental purpose, human and conceptual competence, the ability to recognize opportunities and the ability to financially manage determine positively the entrepreneurial innovation of SMEs. However, the ability to formally plan is not significant.

**Keywords:** *entrepreneurial innovation, entrepreneurial self-efficacy and SMEs.*

**GJMBR-B Classification:** *JEL Code: L26*



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# L'effet De L'auto-Efficacité Entrepreneuriale Sur Innovation Entrepreneuriale: Une Étude Auprès Des Dirigeants Des PME Camerounaises

Abouna Adam Mahamat <sup>α</sup>, Math Mazra <sup>σ</sup> & Halidou Mamoudou <sup>ρ</sup>

**Résumé-** Dans un environnement hautement compétitif et en concurrence avec les grandes entreprises dotées des ressources, l'avantage concurrentiel réside dans la capacité des entreprises, notamment les PME à adopter la stratégie d'innovation entrepreneuriale. L'objectif de ce travail est d'expliquer l'effet de l'auto-efficacité entrepreneuriale sur l'innovation entrepreneuriale des PME. Pour ce faire, nous sommes partis d'un cadre théorique pour formuler des hypothèses. L'analyse de la régression multiple montre que l'auto-efficacité entrepreneuriale influence positivement l'innovation entrepreneuriale des PME mais pas sur toutes les dimensions. En effet, la capacité à définir la finalité fondamentale, la compétence humaine et conceptuelle, la capacité à reconnaître des opportunités et capacité à gérer financièrement déterminent positivement l'innovation entrepreneuriale des PME. Par contre, la capacité à planifier formellement est non significative.

**Mots-clés:** innovation entrepreneuriale, auto-efficacité entrepreneuriale et PME.

**Abstract-** In such a highly competitive environment and competing with large resource-based firms, the competitive advantage lies in the ability of businesses, especially SMEs, to embrace the entrepreneurial innovation strategy. The purpose of this work is the explanation of entrepreneurial self-efficacy on entrepreneurial innovation of SMEs. To do this, we started from a theoretical framework to formulate the hypotheses that will be tested through a quantitative approach. Multiple regression analysis shows that the model is globally significant. Indeed, the ability to define the fundamental purpose, human and conceptual competence, the ability to recognize opportunities and the ability to financially manage determine positively the entrepreneurial innovation of SMEs. However, the ability to formally plan is not significant.

**Keywords:** entrepreneurial innovation, entrepreneurial self-efficacy and SMEs.

## I. INTRODUCTION

L'entrepreneuriat et PME occupent une place de choix tant pour les pouvoirs publics que pour les chercheurs. Pour Lumpkin et dess (1996), l'acte essentiel de l'entrepreneuriat est la nouvelle entrée impulsée par un individu entrepreneur (Verstraete et

Fayolle, 2005). S'inscrivant dans le cadre de la PME, les études considèrent la PME comme une structure appartenant aux propriétaires-dirigeants. Or entrepreneuriat et PME sont indissociables au point où Torrès (1999), pense que si la PME est aujourd'hui un modèle de référence, l'entrepreneuriat deviendra la philosophie dominante des affaires. Ainsi, le champ des PME n'étant qu'un aspect du domaine plus global de l'entrepreneuriat (Torrès, 1999), il semble difficile de distinguer les travaux portant sur l'entrepreneur des travaux portant sur le dirigeant de PME (Grandclaude et Nobre, 2013). Ainsiquand on étudie le contexte spécifique des PME et les facteurs susceptibles d'influencer la croissance économique des nations, on conclut rapidement que les PME jouent un rôle primordial dans la plupart des pays au monde. On assiste depuis quelques temps à une augmentation croissante des programmes de promotion provenant des Etats et des organismes dédiés au développement et à la croissance des PME, et, ce tant pour les pays industrialisés que pour les pays en voie de développement. Au Cameroun, plusieurs actions ont été entreprises par les pouvoirs publics en faveur des PME donc l'objectif poursuivi est de garantir la croissance.

Malgré les efforts consentis en faveur de PME, il faut relever avec Ndzana, (2014), que la contribution des PME à la création d'emploi et à l'éradication de la pauvreté reste à améliorer dans les pays en voie de développement car en dessous des pays développés qui, atteint les 60% (Oséo, 2008). En plus, le dynamisme environnemental et la concurrence engendrée par le changement rapide des goûts et des habitudes de consommation des clients, le raccourcissement des cycles de vie des produits et l'utilisation des nouvelles technologies d'information et de la communication(NTIC) obligent les entreprises qui veulent maintenir leurs parts de marché à innover continuellement.

Plusieurs études ont tenté de comprendre pourquoi certaines entreprises réussissent à innover plus que d'autres en essayant d'identifier les particularités des PME en matière d'innovation afin de mieux cerner les éléments explicatifs. Parmi les facteurs déterminants les auteurs ont identifié la taille (Galbraith 1952), la structure (Gopalakrishnan et Damanpour, 1994; Becheikh et aL, 2006), la coopération

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(kouba'asalah, 2014), les compétences (Carrier et Julien, 2005 ;Vinding, 2006; St Pierre et Trépanier, 2007), les ressources financière (Becheikh et al. 2006 ), le leadership (De Jon et Den Hartog, 2003; St-Pierre, 2004; St-Pierre et Mathieu 2003), les activités de R &D(Raymond L. et St Pierre J., 201; Becheikh et al., 2006; Baldwin et al, 2000), mais l'auto-efficacité a bien peu explorée (Zahra, F. et Zemzami, I. 2014) en relation avec l'innovation entrepreneuriale dans notre contexte.

Pourtant, l'auto-efficacité entrepreneuriale permet de déterminer les facteurs cognitifs, affectives et motivationnels qui poussent l'individu à s'engager dans des activités entrepreneuriales (Shane et Venkataramen, 2000). Ainsi, l'adoption de l'innovation dans les PME est fonction de ce que le dirigeant veut, compte tenu de ses capacités à mobiliser les ressources, à détecter les opportunités entrepreneuriales et à planifier.

Cette étude a pour objectif d'étudier l'effet de l'auto-efficacité entrepreneuriale sur l'innovation entrepreneuriale des PME. Pour ce faire, quatre principales parties seront détaillées à savoir : le cadre théorique et les hypothèses de l'étude, la méthodologie et les résultats suivis de la discussion et des implications.

#### a) *Cadre théorique et hypothèses*

Deux points seront développés dans cette section. Le premier point portera sur la présentation du concept d'innovation entrepreneuriale et l'auto-efficacité entrepreneuriale. Le second sur la relation entre l'auto-efficacité entrepreneuriale et innovation entrepreneuriale des PME.

##### i. *Innovation entrepreneuriale des PME*

Le domaine de l'entrepreneuriat existe avant mais c'est Schumpeter (1934) qui donne l'envol du domaine de l'entrepreneuriat (Fillion, 1997) avec le concept d'innovation via la recombinaison des ressources. Pour Schumpeter (1934) l'innovation est « un processus de destruction créatrice », où la richesse est créée lorsque les structures existantes du marché sont perturbées par l'introduction des biens nouveaux, provoquant ainsi la création d'organisations nouvelles.

Le concept d'innovation constitue donc le fondement de l'entrepreneuriat donc Mohiédine et Murat, (2011), pensent qu'il existe plusieurs définitions, logiques et des conceptualisations. Pour Puech, (2014), l'innovation est défini comme un processus, ou encore comme le résultat. Julien et Marchesnay, (1996) en adoptant le processus définissent l'innovation comme étant le processus qui consiste à créer une entreprise différente de ce qu'on connaissait auparavant, c'est découvrir ou transformer un produit, c'est proposer une nouvelle façon de faire, de distribuer ou vendre. concernant, le résultat, Puech,(2014), pense que la définition de Schumpeter et la nouvelle entrée de

Lumpkin et Dess(1996) reste les plus utilisées en entrepreneuriat.

Dans le cadre de l'entrepreneuriat organisationnel, Miller et Friesen, (1983) définissent l'innovation comme étant le fait pour les dirigeants d'une entreprise d'accorder de l'importance aux activités de recherche et développement (R&D); de rechercher constamment de nouvelles idées (nouveaux processus, nouveaux produits/services) à travers la créativité et les expériences. Dans le même ordre d'idée, Lumpkin & Dess (1996) définissent l'innovation comme « la nouvelle entrée » (*new entry*), c'est à dire la création de nouveaux produits/ services, la conquête de nouveaux marchés, la création d'une nouvelle entreprise (start-up, corporate venture, essaimage,...) (Cherchem et Fayolle, 2011). Ainsi, l'innovation consiste pour les entreprises à introduit de nouveaux produits, des nouveaux procédé, et le renouvellement des nouvelles activités au sein des entreprises existantes. En considérant l'innovation comme une stratégie entrepreneuriale des PME, Etrillard (2004) pense que la stratégie entrepreneuriale est adapté aux structures de petite taille et par conséquent la dynamique entrepreneuriale résulte processus de prise décision faiblement formalisé engageant l'entreprise dans une démarche proactive et dépendant de l'initiative du dirigeant-proprétaire de la PME.

##### ii. *Auto efficacité entrepreneuriale*

L'auto-efficacité est la croyance d'une personne en sa capacité d'organiser et mener une action requise pour produire des résultats souhaités (Bandura, 2003). Le concept renvoie aux croyances relatives à ce qu'un individu est capable de faire dans les différentes situations, quelles que soient ses aptitudes (Bandura, 2003), aux croyances de l'individu à mobiliser la motivation, les ressources cognitives et les comportements nécessaires pour exercer un contrôle sur les événements de la vie (Bandura et Wood, 1989), aux jugements personnels à propos de la capacité à réaliser l'ensemble d'actions requises pour atteindre des types de performances désirées (Bandura, 1986). Ainsi, l'auto-efficacité examine simultanément l'interaction dynamique entre les choix des gens pour les activités à faire et l'environnement dans lequel ils vont évoluer (Bandura, 2003) pour produire un comportement permettant à une personne de s'orienter plus facilement vers des activités pour lesquelles elle pense avoir les capacités nécessaires (Bandura, 1986). Il constitue un fondement majeur du comportement humain et exerce une influence sur la manière de penser et d'agir de l'individu (R. Charaf-Eddine Et L. Haddou, 2016).

Cependant, McGee, et al. (2009) soulignent que le concept est traité de façon général dans plusieurs domaines du fonctionnement humain. Dans le champ de l'entrepreneuriat le concept est appelé auto-efficacité entrepreneuriale (S. Sadaoui, 2015) et est

étudier comme facteur déterminant de l'intention entrepreneuriale (Boyd et Vozikis 1994; Krueger et Brazeal 1994). Dans ce sens, l'auto-efficacité entrepreneuriale est définie par les auteurs comme étant la croyance qu'a une personne en ses capacités à poursuivre les opportunités (de noble et al, 1999), à rassembler les ressources et compétences (baron, 2004) lui permettant d'atteindre un objectif spécifiques (Zahooet al, 2005) ou de s'engager dans des activités entrepreneuriales (Shane et Venkataramen, 2000). De ce fait McGee, et al. (2009) proposent un outil de mesure de l'auto-efficacité entrepreneuriale renfermant cinq dimensions spécifiques et des tâches reliées à l'entrepreneuriat à savoir : la reconnaissance d'opportunités, la planification, la définition de la finalité de l'entreprise, les compétences humaines ou conceptuelles et les compétences financières. Nous nous attarderons spécifiquement sur les travaux de McGee et al. (2009) dans la mesure où leurs travaux apportent un supplément d'information par rapport aux autres travaux traitant des compétences entrepreneuriales.

iii. *L'auto-efficacité entrepreneuriale détermine l'innovation entrepreneuriale des PME*

L'activité entrepreneuriale conduire à de nouvelles activités au sein des organisations existantes ou peut considérablement transformer les organisations à travers une variété d'initiatives entrepreneuriales (Slevin et Covin, 1991). Pour les petites et moyennes entreprises, la stratégie d'innovation entrepreneuriale est particulièrement le reflet des caractéristiques des individus, dont le plus important est évidemment le propriétaire-dirigeant. Le propriétaire-dirigeant est reconnu comme étant le principal si ce n'est le seul preneur de décisions au sein de la PME. À ce titre, Covin et Slevin (1991) le placent au cœur du comportement stratégique de l'entreprise. Pour Etrillard (2004), la stratégie entrepreneuriale est adapté aux structures de petite taille et par conséquent la dynamique entrepreneuriale résulte processus de prise décision faiblement formalisé engageant l'entreprise dans une démarche proactive et dépendant de l'initiative du dirigeant-propriétaire de la PME.

Parmi les caractéristiques des propriétaires dirigeants qui déterminent la dynamique entrepreneuriale des firmes, l'auto-efficacité joue un rôle important. En effet, l'auto-efficacité examine simultanément l'interaction dynamique entre les choix des gens pour les activités à faire et l'environnement dans lequel ils vont évolué (Bandura, 2003) pour produire un comportement permettant à une personne de s'orienter plus facilement vers des activités pour lesquelles elle pense avoir les capacités nécessaires (Bandura, 1986). L'interaction dynamique entre l'individu et l'environnement explique quels processus cognitifs, motivationnels et affectifs sont impliqués dans la

décision d'un individu de s'engager dans des activités entrepreneuriales (Shane et Venkataramen, 2000). Pour Randerson et al, (2011), le sentiment d'efficacité personnelle réfère à la croyance qu'un individu a de sa capacité à réussir des tâches spécifiques (Randerson et al, 2011). Ces croyances sont les déterminants de la façon de penser, d'agir et de percevoir. St-jean et C. Mathieu, (2011), pensent que les personnes disposant des fortes croyances en leurs compétences se montrent les plus persistantes dans leurs efforts et notamment en ce qui concerne la maîtrise des défis. Dans le même ordre d'idée Randerson et al, (2011) pensent que les individus ayant un niveau élevé d'auto-efficacité entrepreneuriale possèdent un haut niveau de croyance en leurs bonnes idées. Ils croient en outre en leurs capacités à relever des challenges, introduire de nouveaux produits.

Dans le champ de l'entrepreneuriat McGee, et al. (2009) proposent un outil de mesure de l'auto-efficacité entrepreneuriale renfermant cinq dimensions spécifiques et des tâches reliées à l'entrepreneuriat à savoir: la reconnaissance d'opportunités, la planification, la définition de la finalité de l'entreprise, les compétences humaines ou conceptuelles et les compétences financières. Ainsi donc notre hypothèse centrale se formule de la manière suivante:

*H: l'auto-efficacité- entrepreneuriale influence positivement l'innovation entrepreneuriale des PME.*

*De cette hypothèse découle plusieurs hypothèses à avoir:*

*H.1: Les capacités à reconnaître des opportunités influencent positivement l'innovation entrepreneuriale des PME.*

*H.2: Les Capacité à planifier formellement influencent positivement l'innovation entrepreneuriale des PME.*

*H.3: Les capacités à définir la finalité fondamentale influencent positivement l'innovation entrepreneuriale des PME.*

*H.4: Les compétences humaines et conceptuelles déterminent l'innovation entrepreneuriale des PME.*

*H.5: Les capacités à gérer financièrement déterminent l'innovation entrepreneuriale des PME.*



### CADRE CONCEPTUEL DE L'ÉTUDE

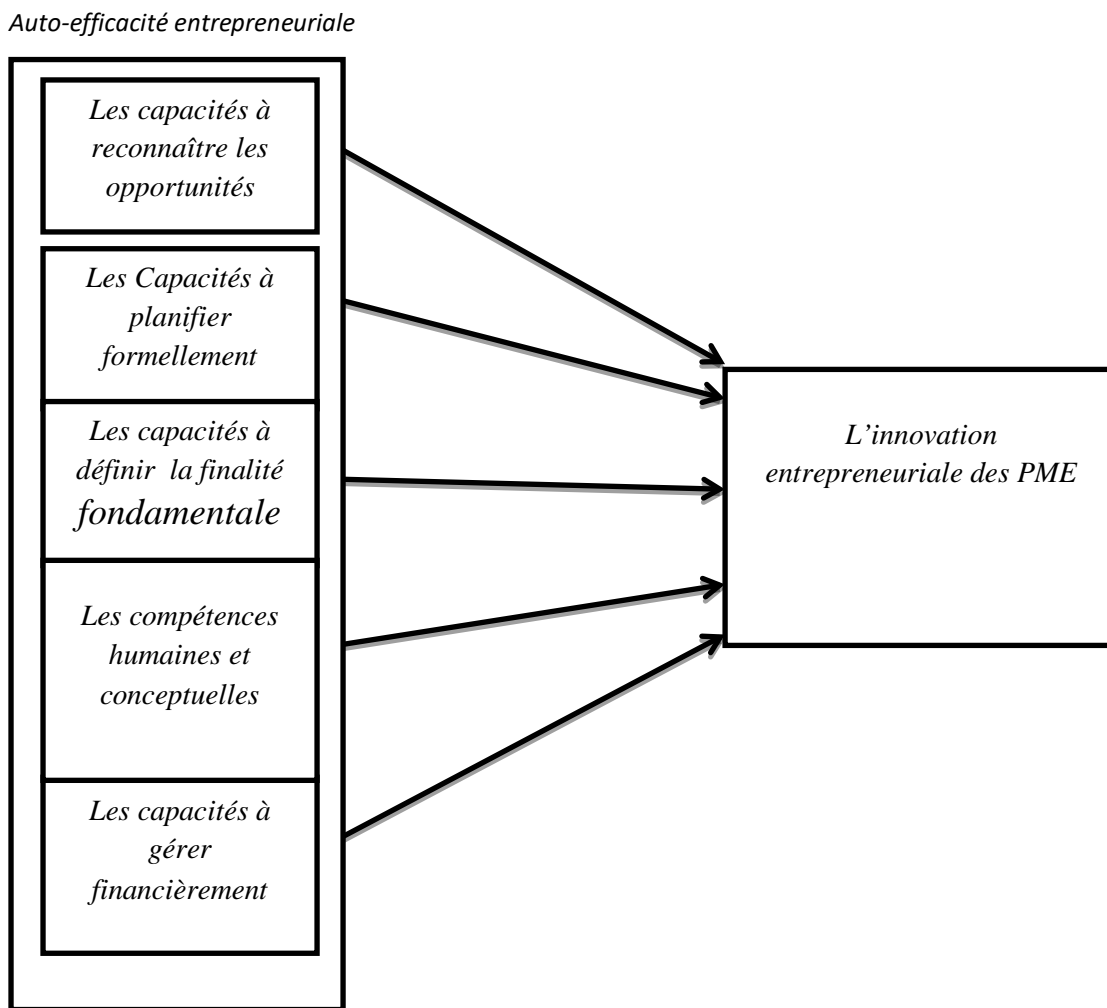


Figure 1

## II. METHODOLOGIE

Dans le cadre de cette recherche, il sera question de mettre en évidence l'auto-efficacité entrepreneuriale des PME et de ressortir clairement le degré d'influence de celui-ci sur l'innovation entrepreneuriale dans la PME Camerounaise. Par conséquent nous avons adopté dans cette étude la démarche hypothético-déductive. Cette démarche scientifique consiste à construire à partir de la littérature existante des réponses théoriques sur le phénomène étudié et de les confronter à la réalité par une recherche empirique, c'est-à-dire, poser les hypothèses puis émettre les types d'observations qui démontreront la validation ou non des hypothèses déjà formulées. Pour mener à bien cette investigation, nous avons constitué un échantillon composé uniquement de petites entreprises à partir des annuaires de l'INS et de chambre des commerces. La méthode de collecte des

données est l'enquête par questionnaire avec administration directe auprès des dirigeants des petites entreprises. Notre démarche est suivie par l'analyse des données pour laquelle nous avons utilisé le logiciel SPSS. Afin de tester nos hypothèses, nous avons réalisé l'analyse des régressions linéaires.

### a) Échantillon et caractéristiques

La taille de l'échantillon fait référence au nombre de questionnaire exploitable après dépouillement et au nombre d'individus interviewés respectivement pour les études quantitatives et qualitatives. Le tableau suivant en fait une synthèse.

Tableau 1: La répartition de l'échantillon

Villes	Questionnaires					
	Administrés		Récupérés		Exploitable	
	Effectifs	%	Effectifs	%	Effectifs	%
Douala	160	43,25	129	46,57	121	47,83
Yaoundé	140	37,84	103	37,18	98	38,74
Garoua	15	4,05	12	4,34	07	2,76
Ngaoundéré	30	8,10	13	4,69	10	3,95
Maroua	25	6,76	20	7,22	17	6,72
Total	370	100	277	100	253	100

Source: Nos analyses

Nous avons administré 160 à Douala (43,25 %), 140 à Yaoundé (37,84 %), 15 à Garoua (4,05 %), 30 à Ngaoundere(8,10 %) et à 25 à Maroua (6,76 %). Cette répartition suit en quelque sorte la répartition théorique des PME au Cameroun avec la ville de Douala (capitale économique) qui vient en tête avec près de la moitié des PME camerounaises. Au total, nous avons distribué environ 370 questionnaires et nous avons reçu 277 remplis, soit un taux de réponse de 74,86%. Après vérification, nous avons retenu 253 questionnaires exploitables ce qui atteste que notre questionnaire était compréhensible.

#### b) Présentation des variables

Pour opérationnaliser les variables de notre recherche, nous avons utilisé une échelle de Likert à 5 points, les répondants avaient à choisir l'énoncé qui convient à la situation de leur entreprise eu égard aux items: « 1 » = totalement pas d'accord « 2 » = pas d'accord; « 3 » = neutre; « 4 » = d'accord;« 5 » = totalement d'accord. Nous présentons ci-dessous l'origine de chaque échelle.

##### i. Innovation entrepreneuriale

Pour la mesure de l'innovation entrepreneuriale, nous avons adapté et combinés les items issus des travaux de Covin et Slevin (1991) et Hughes and Morgan (2007). L'innovation entrepreneuriale est mesurée par 7 items. Sur une échelle de Likert à 5 points, les répondants avaient à choisir l'énoncé qui convient à la situation de leur entreprise eu égard aux items: « 1 » = totalement pas d'accord « 2 » = pas d'accord; « 3 » = neutre; « 4 » = d'accord;« 5 » = totalement d'accord.

Pour mesurer la cohérence interne des items, nous avons retenu cinq (alpha de crombach= 0,885 supérieur à 0,5.Sur la base du critère de Kaiser qui préconise de ne retenir que les facteurs ayant une valeur propre supérieur à 1, nous retenons donc un seul facteur. Ce facteur explique 69,690 %. De plus l'indice de de KMO donne une valeur de 0,855 considérée comme bon. De même le test de sphéricité de Bartlett est significatif. Ceci signifie que l'ACP est pertinent pour nos données.

##### ii. Auto- efficacité entrepreneuriale

Pour opérationnaliser les dimensions de l'auto-efficacité, nous avons adopté l'échelle de mesure de de

St Jean et Mathieu, (2011). L'échelle de mesure de l'auto-efficacité- entrepreneuriale est explorée en proposant aux répondants cinq dimensions. Chaque dimension est mesurée par 3 items. Les coefficients de cohérence interne (alpha de crombach) sont tous supérieur à 0,7 à l'exception des dernières dimensions qui est également proche de 0,7(0,686). Les analyses préalables à l'établissement du tableau de l'analyse factorielle montrent que les données sont factorisables avec un indice KMO de 0,654 et un test de sphéricité de Bartlett de 1702,325 (avec une significativité de l'ordre de 0,000 très significatif à 105 degré de liberté). Une observation du tableau montre que la qualité de la représentation des items est acceptable. En effet, toutes les communalités sont supérieures à 0,50, sauf dans le cas de l'item 3 de la *capacité à reconnaître des opportunités (F3)* qui représente une communalité de 0,496.





Tableau 2: Analyse factorielle des items d'auto-efficacité entrepreneuriale (rotation VARIMAX)

Items	Composantes					Communalités
	F1	F2	F3	F4	F5	
Je peux développer un plan d'action pour poursuivre une opportunité	,912					,850
Je peux inspirer les autres à endosser ma vision de mon entreprise et mes valeurs	,908					,832
Je peux énoncer la vision que j'ai de mon entreprise et de mes valeurs,	,875					,789
Je peux faire rouler mon entreprise sans problème		,910				,868
Je peux organiser et motiver les autres		,877				,867
Je peux superviser, influencer et diriger		,868				,678
Je peux discerner les opportunités d'affaires			,930			,893
Je peux reconnaître les produits voués au succès			,884			,802
Je peux percevoir les besoins non comblés dans le marché			,700			,496
13) Je peux gérer les dépenses,				,817		,685
14) Je peux contrôler les coûts d'opération de mon entreprise				,780		,633
15) Je peux gérer les entrées et sorties de fonds				,775		,609
Je peux traduire ma vision en stratégie					,862	,747
Je peux communiquer mes objectifs par écrit					,787	,656
Je peux écrire des plans formels,					,688	,515
Valeurs propres	3,284	2,396	2,037	1,741	1,468	
% variance expliquée	21,892	15,974	13,581	11,605	9,787	
% variance expliquée cumulé	21,892	37,866	51,447	63,052	72,839	
alpha de Cronbach	,892	,875	,807	,712	,686	

Source: Nos analyses

L'on constate que, tous le tableau de pourcentage de la variance fait apparaitre l'existence des 5 composantes ayant des valeurs propres supérieures à 1. L'ensemble des facteurs retenus restitue 72,839 % du pourcentage de la variance expliquée. Ces facteurs peuvent être nommés respectivement: *Capacité à définir la finalité fondamentale (F1)*, *La compétence humaine et conceptuelle (F2)*, *Capacité à reconnaître des opportunités (F3)*, *Capacité à gérer financièrement (F4)* et *Capacité à planifier formellement (F5)*.

les variables sont toutes inférieures au seuil de 0,7. Ces corrélations n'étant donc pas significatives, nous pouvons passer à l'analyse de régression multiple modérée sans exclure de variable.

### III. MODÈLE PRÉDICTIF DE L'ÉTUDE

L'analyse en composante principales nous donne onze sous dimensions dans l'ensemble. Le tableau suivant détaille les statistiques descriptives des corrélations bivariées relatives aux différentes variables de l'étude. En effet, ce test de corrélation est effectué pour confirmer qu'on peut continuer les analyses étant rassuré qu'aucune des variables n'est identique à une autre. D'après le tableau, les corrélations bivariées entre



Tableau 3: Corrélation entre innovation et les dimensions de l'auto-efficacité entrepreneuriale

		1	2	3	4	5	6
1. INNOV	Corrélation de Pearson	1	,194**	,201**	,054	,152*	,243**
	Sig. (bil)		,002	,001	,392	,016	,000
	N	253	253	253	253	253	253
2. (DCP)	Corrélation de Pearson	,194**	1	,101	-,043	,064	,101
	Sig. (bil)	,002		,109	,492	,309	,109
	N	253	253	253	253	253	253
3. (HCC).	Corrélation de Pearson	,201**	,390**	1	,080	,132*	,364**
	Sig. (bil)	,001	,000		,205	,035	,000
	N	253	253	253	253	253	253
4. (OR)	Corrélation de Pearson	,054	,462**	,207**	1	,203**	,108
	Sig. (bil)	,392	,000	,001		,001	,086
	N	253	253	253	253	253	253
5. (EM)	Corrélation de Pearson	,152*	,283**	,055	,009	1	,283**
	Sig. (bil)	,016	,000	,386	,883		,000
	N	253	253	253	253	253	253
6. (FP)	Corrélation de Pearson	,243**	,390**	,293**	,222**	,390**	1
	Sig. (bil)	,000	,000	,000	,000	,000	
	N	253	253	253	253	253	253

Source: Nos analyses

De manière générale, le modèle est satisfaisant. L'intensité de la liaison entre les variables est forte (R=0,608). L'auto-efficacité entrepreneuriale explique pratiquement 14,7% de la variation de l'innovation entrepreneuriale des PME (R-deux ajusté) et les termes d'erreurs sont indépendants (DW=1,344). De plus, les coefficients standardisés entre les variables sont

significativement différent de zéro et les coefficients t de Student sont supérieurs à 2 pour toutes les dimensions à l'exception de la capacité à planifier formellement. Les résultats de l'analyse de la régression multiple sont présentés dans le tableau suivant:

Tableau 4: Régression de l'auto-efficacité entrepreneuriale sur l'innovation entrepreneuriale des PME

Modèle	Coefficients non standardisés		Coefficients standardisés	T	Sig.
	A	Erreur standard	Bêta		
(Constante)	4,556E-017	,058		,000	1,000
1 Capacité à définir la finalité fondamentale (DCP)	,194	,058	,194	3,340	,001
La compétence humaine et conceptuelle (HCC).	,201	,058	,201	3,457	,001
Capacité à reconnaître des opportunités (OR)	,243	,058	,243	4,184	,000
Capacité à gérer financièrement (EM)	,152	,058	,152	2,606	,010
Capacité à planifier formellement (FP)	,054	,058	,054	,928	,354

a. Variable dépendante: INNOVATION ENTREPRENEURIALE

Source: Nos analyses

L'analyse du tableau montre que, quatre dimensions sur le cinq déterminent l'innovation entrepreneuriale.

Ainsi, la capacité à définir la finalité fondamentale, La compétence humaine et conceptuelle (HCC), la capacité à reconnaître des opportunités et capacité à planifier formellement détermine positivement l'innovation entrepreneuriale des PME. Validant ainsi, hypothèse H1, H3, H4, H5.

Par contre, la capacité à planifier formellement est non significative, et nous pouvons conclure que les hypothèses H2.

#### IV. DISCUSSIONS DES RÉSULTATS

L'auto- efficacité relatives à la capacité à définir la finalité de l'entreprise, à reconnaître les opportunités, la compétence humaine et conceptuelle et la capacité à gérer financièrement sont positivement corrélées à l'innovation entrepreneuriale dans les PME. Ces résultats sont conformes avec certains travaux effectués dans le domaine (Diop pape, 2012; Cherchem et Fayolle, 2010; Randerson et al, 2011 et MighriZouhayer, 2013; K. Tamzini et al, 2016). En effet, les items de l'auto-efficacité relative à la capacité des propriétaires dirigeants à définir la finalité de l'entreprise font allusions à la vision entrepreneuriale au sens de Fillion (1991). Ainsi les dirigeants ayant une vision claire innover dans les PME. L'auto-efficacité entrepreneuriale à reconnaître les opportunités d'affaires détermine l'innovation entrepreneuriale des PME. Ces résultats viennent confirmés la conception de Chabaud et Messeghem, (2010) sur la recherches permanents des opportunités. Pour ces auteurs, même si le marché approche un état d'équilibre, la recherche des opportunités par les individus combinée à la tentation du profit et l'avancée des connaissances et des technologies détruira l'équilibre tôt ou tard. Cette destruction créatrice constitue ce que Schumpeter appelle l'innovation entrepreneuriale (Jaziri R. et Paturel R, 2009). Ainsi la capacité à reconnaître les opportunités détermine l'innovation entrepreneuriale des PME.

L'auto-efficacité entrepreneuriale relative à la compétence humaine et conceptuelle fait explicitement référence aux capacités de supervision, aux capacités à motiver les employés et à influencer les autres. Ces différentes qualités influencent significativement l'innovation entrepreneuriale des PME.

Enfin, l'auto-efficacité entrepreneuriale relative à la capacité à gérer les ressources influence également l'innovation entrepreneuriale de PME ces résultats confirment les études réalisées par Baldauf et Rank (2005) sur la relation positive des ressources financières des PME suisse mais en contradiction a ceux réalisés par Chabaud et sattin (2010) selon laquelle la dimension financière ne semble donc pas constituer un frein au développement des projets innovants à partir du

moment où les idées peuvent être formalisées au sein de la firme, ce qui correspond à la vision défendue par Stevenson et Jarillo (1990).

Par contre, la capacité de planification formelle est négativement corrélées à l'innovation entrepreneuriale dans les PME. En effet, les entreprises de petite taille n'ont pas une planification formelle. Ce résultat corrobore avec la définition d'Etrillard (2004), selon laquelle la stratégie entrepreneuriale est adapté aux structures de petite taille et par conséquent la dynamique entrepreneuriale résulte processus de prise décision faiblement formalisé engageant l'entreprise dans une démarche proactive et dépendant de l'initiative du dirigeant-propriétaire de la PME.

#### V. CONCLUSION

L'objet de ce travail était de chercher l'influence de l'auto-efficacité entrepreneuriale de PME. A l'issue de ce travail de recherche, nous sommes arrivés à la conclusion que l'auto- efficacité entrepreneuriale influence positivement l'innovation entrepreneuriale des PME mais pas sur toutes les dimensions. En effet, la capacité à définir la finalité fondamentale, La compétence humaine et conceptuelle (HCC), la capacité à reconnaître des opportunités et capacité à gérer financièrement déterminent positivement l'innovation entrepreneuriale des PME. Validant ainsi, hypothèse H1, H3, H4, H5.

Par contre, la capacité à planifier formellement est non significative, et nous pouvons conclure que les hypothèses H2.

Ces résultats montrent que la dynamique entrepreneuriale résulte d'un processus de prise décision est intuitive et faiblement formalisé (Etrillard, 2004). Cependant l'adoption d'une stratégie entrepreneuriale axé sur l'innovation est fonction des capacités des propriétaires dirigeants à définir la finalité, la compétence, à reconnaître les opportunités entrepreneuriales et à gérer les ressources. Ainsi, ce travail présente un double apport:

*Sur le plan théorique*, cette étude permet de dépasser les difficultés de mis en place d'une stratégie entrepreneuriale au sein des PME. D'ailleurs la plupart des études font références aux trois dimensions de l'orientation entrepreneuriale pour définir la structure entrepreneuriale. Or l'orientation est un concept multidimensionnel et dépendant de l'environnement et du contexte dans lequel il est étudié. Cette étude retient seule l'innovation car elle constitue le cœur de l'entrepreneuriat et une stratégie de compétitivité pour la PME.

En plus, les traits sont de nature stable et ne tient pas compte de l'environnement. Or l'auto-efficacité est une dimension cognitif et permet d'examiner simultanément l'interaction dynamique entre l'individu et l'environnement en expliquant quels

processus cognitifs, motivationnels et affectifs sont impliqués dans la décision d'un individu de s'engager dans des activités entrepreneuriales (Shane et Venkataramen, 2000).

Sur le plan managérial, les dirigeants des PME devraient également prendre en compte dans l'élaboration stratégique de leur firme l'auto-efficacité entrepreneuriale, car elle permet de s'orienter vers les activités pour lesquelles on peut atteindre la performance désirée. Cette dimension cognitive constitue également une ressource non négligeable dans l'implémentation d'une innovation entrepreneuriale au sein des PME.

Comme aucune recherche n'est parfaite, la nôtre souffre des certaines limites: La toute première est liée à la taille de l'échantillon. Notre échantillon comporte exclusivement les PME de la ville de Yaoundé, Douala, Garoua et de N'Gaoundéré, alors nos résultats ne sauraient être généralisés à tous les autres PME, d'une part et, d'autre part tous les secteurs ont été touché par nos enquêtes or chaque secteur a ses particularités. Par ailleurs, la même recherche sur un échantillon plus étendu et dans un secteur précis mènerait à des résultats davantage généralisables.

La question d'innovation entrepreneuriale appelle à une combinaison de l'auto-efficacité entrepreneuriale et des autres traits psychologiques tel que le lieu de contrôle, la propension à la prise de risque etc... car la combinaison entre les traits et l'auto-efficacité permettra d'avoir une vision du phénomène qu'on veut étudier.

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GLOBAL JOURNAL OF MANAGEMENT AND BUSINESS RESEARCH: B  
ECONOMICS AND COMMERCE

Volume 19 Issue 1 Version 1.0 Year 2019

Type: Double Blind Peer Reviewed International Research Journal

Publisher: Global Journals

Online ISSN: 2249-4588 & Print ISSN: 0975-5853

# The Impact of Governance on FDI Attractiveness: The MENA Countries Case

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**Abstract-** In this paper, we attempt to study the influence of institutional quality on the attractiveness of foreign direct investment (FDI) with a sample of MENA countries during a study period from 1996 to 2015. For this purpose, we will synthesize different empirical researches that have described direct and indirect correlation between governance and FDI. Thus, we will collect a database from the World Bank and the International Monetary Fund on macroeconomic variables, institutional variables and FDI on national wealth. We will use the Static Panel technique to identify the governance effect on FDI for the MENA region.

**Keywords:** *governance; FDI attractiveness; relationship*

**GJMBR-B Classification:** *JEL Code: D00*



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# The Impact of Governance on FDI Attractiveness: The MENA Countries Case

Mgadmi Nidhal <sup>α</sup> & Moussa Wajdi <sup>σ</sup>

**Abstract-** In this paper, we attempt to study the influence of institutional quality on the attractiveness of foreign direct investment (FDI) with a sample of MENA countries during a study period from 1996 to 2015. For this purpose, we will synthesize different empirical researches that have described direct and indirect correlation between governance and FDI. Thus, we will collect a database from the World Bank and the International Monetary Fund on macroeconomic variables, institutional variables and FDI on national wealth. We will use the Static Panel technique to identify the governance effect on FDI for the MENA region.

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## I. INTRODUCTION

Country governance quality plays, in a wide sense, a very important part to attract more FDI<sup>1</sup>(Jan-Yan Lin et al.,2016). Thus, governance type and its effectiveness depend in a great measurement on social, economic and legal environment of the country host (Shaonin Li<sup>2</sup>, 2005). However, governance and these determinants belonged to the investment climate. The idea is that, this investment environment is one of the most important subjects related to the capacity of competitiveness in order to attract the FDI. It is considered as an important investments financing source in the productive economic sectors and the services. Institutional environment transparency of the state and companies is very important for the external investors because good governance represents a crucial factor for the investor's protection mechanisms. This good governance implies with existing transparent laws, legal system and a legislation of the reliable public financial information and a strong public confidence (Li and Filer<sup>3</sup>, 2004). For that, it is said that transparency and reliability of information allow crucial governance factors and they match upto important obligations so that investors supervise their business. In contrary, the lack of transparency can involve an information asymmetry between the contracting parties that reduces

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1-FDI : foreign direct investment

2-Shaonin Li (2005) why a poor governance environment does not deter foreign direct investment: the close of china and its implication fear investment protection, (Elsevier).

3-Li and Filer (2004)

confidence between them (Li<sup>4</sup>, 2003). On the other hand, the lack of positive climate constitutes a significant threat for the recipient countries of FDI (waste of resources).

In this respect, in the economic literature, the debate on the governance role in increasing the FDI constitutes a basic element of several economic researches to define the influencing factors to FDI entry. While being based on several research studies, the major stake of this article is thus to control the governance indicators in an efficient and effective way in order to reduce uncertainty for the foreign investors and to build a climate of trust with its partners since, the decision to invest in a country is not an easy task. The objective of our research is to release the whole of the factors, which explain FDI entering flows in MENA region (Middle East and North Africa).

This article is articulated around two parts. In the first part, we will synthesize principal empirical works that treated the governance impact in increasing FDI. In the second part, we will empirically check the existence of a static relationship that connects FDI according to governance variables for a sample of the twelve countries from MENA region for a studying period going from 1996 up to 2015 on annual frequencies.

### a) Review of the literature

Several theorists studied the role of the traditional governance indicators in increasing FDI. Kaufmann<sup>5</sup> and Kray<sup>6</sup>(1997) noted that the FDI attraction in the host countries is influenced by several governance determinants of the institutional and political orders. David et al. (1995) showed that institutional good quality is a necessary condition to FDI collection through the indicators of civil laws, rights of the properties, economic-policy freedom and to reduce corruption. These indicators have positively influences on the FDI. From where, these indicators encourage the FDI realizing of an institutional good quality worked out by the host countries.

Saskia and Stanley (1998) found that institutional quality could attract FDI from institutional

4-Johushu Li (2003): relation-based versus rule-based governance: an explanation of the East Asian miracle and Asian crisis. (Review of international economics 11(4), 651-673).

5-Daniel Kaufmann, Director of the Global Governance Program at the BM Institute

6-AartKraay, Senior Economist in the World Bank Research Group.

scores. When these scores are very high, they encourage private foreign agents to invest in host countries. *Saskia and Stanley (1998)* spoke about the role of transparency and trustworthy in the attractiveness of FDI. Hence, institutional quality attracts FDI. Corruption is an institutional variable that has a decisive role in attracting FDI. This corruption is related to bureaucratic quality and represents a major determinant of FDI. At this stage, we will study this institutional quality from property rights & corruption and the impacts of this quality on increasing FDI.

*Nicholson (2002)* affirmed that a protection of intellectual properties rights encourages the companies to undertake with the foreign production because of widened protection increases their advantages as regards property. *Asid et al. (2004)* checked that the reinforcement of intellectual properties rights for the developed countries. In addition, developed countries are profiting in terms of FDI from technology transfer where to incite diffusing and sharing the research and development advantages.

*Shleifer and Vishny (1992)* noted that corruption reduces investment incentives of economic agents. Corruption increases the investing responsibilities through irregular taxes and generating a bad allocation of resources as well as reduction of firms' production capacity (*Zhao, Kim and Du, 2003*). In addition, corruption makes it possible to increase the transaction costs and to slow down the investment incentives (*Shleifer & Vishny, 1993; Mauro, 1995 and Wei, 2000*).

Thus, corruption is a sabre with dual mission it makes it possible to reduce, at the same time, volumes and effectiveness of investments (*Sarkar and Hassan, 2001*). *Dewheeler & Mody (1992)* and *Hines (1995)* considered that corruption is a governance factor of the companies at the institutional level and macroeconomic level in the determination of FDI flows. The results of *Dewheeler & Mody (1992)* and *Hines (1995)* have support the position of most previous researches that corruption exercises a negative effect on FDI.

*Wei and Shleifer (2000)* studied corruption and global capital markets in the flows towards emerging countries and they noted that corruption affects negatively at the same time volumes and composition of capital entry in the emerging markets, because it reduces considerably FDI entries. *Wei and Shleifer (2000)* noted that FDI are more sensitive and vulnerable to corruption that the foreign portfolio investments and the other shapes of capital entries. *Morisset and Olivier (2002)* found that corruption generates bad governance and it increases the administrative costs, as it discourages FDI entries.

*Kaugmann (1997)* noted that corruption exerts negative effects on the FDI attractiveness especially in more corrupted host country, the investment costs increased. *Kaugmann (1997)* affirmed that corruption in

a host country increases the costs of foreign investors and discourages the FDI. *Hines (1995)* noticed that the American multinational firms settled in the less corrupted countries. *Wei (2000)* empirically validated the negative effects of corruption on FDI from the cross sectional data and from general correlation matrix.

*Habib and Zurawicki (2002)* analyzed the relationship between corruption and FDI from the individual data on 89 developed and less developed countries. *Habib and Zurawicki (2002)* noted that corruption prevents FDI. *Busse et al. (1996)* specified the main function of corruption in the attraction of FDI and they showed that believers investors that the government created reforms to slow down corruption.

Other researches showed that corruption exerts positive impacts on FDI since it produces economic advantages and it makes it possible to circumvent the bureaucracy inefficiency. *Beck & Maher (2006)*, *Bojinova & Tøndel (2008)* and *Saha (2001)* held that corruption could help the economy. They used several theoretical models and they indicated damage to the business. These authors stated that corruption can be effective "lubricating" for a rigid economic regulation and bureaucracy. Thus, corruption could be particularly true for the international companies operating in developing countries. *Wheeler & Mody (1992)* and *Egger & Winner (2005)* concluded that corruption in the host country encouraged the FDI and they affirmed that corruption could be regarded as a stimulus for FDI. These authors supported the result released by *Akçay (2001)*. The latter captured a positive and significant relationship between corruption and FDI for a sample of twenty-five less-developed countries. *Glass and Wu (2002)* considered that corruption supports FDI, i.e. corruption accumulates FDI, and consequently corruption in the host countries can have a positive impact on the attraction of foreign investments.

*Tumanand Emmert (2004)* stressed that political instability affected FDI entries in developing country. *Friedrich & Frey (2001)* and *Zhao (2003)* put agreement, in their analyses, that political instability reduces FDI flows. In addition, *Batana (2005)* affirmed that political instability is determinant of FDI flows. *Asiedu (2002)* showed, in his analysis, that there is no relationship between political stability and FDI. Moreover, *David and Guisinger (1995)* proved the existence of a dependence relationship between political stability and FDI during their period's studies. On the other hand, *Singh & Jun (1995)* and *Wheeler & Mody (1992)* observed that political instability does not affect FDI flows.

*Parker (1999)* illustrated that the objective of the public services regulation is to establish a favorable political environment in order to encourage the investors and to enter within the market. *Globerman and Shapiro (2002)* used new developed indicators to examine the effects of the governance infrastructure on entering and

outgoing FDI flows for a large sample of developed and underdeveloped countries between 1995 and 1997. These authors stressed that the influence of framework regulation in transition countries and underdeveloped economies dominated political stability and even the rule of law.

*Gani (2007)* studied the relationship between governance indicators and FDI by using a sample of countries from Asia and Latin America. While controlling the FDI standard variables, the results strongly confirm the findings of *Habib and Zurawicki (2002)*.

*Rutihind (2005)* found a positive relationship between voice and responsibility effect on FDI attractiveness in an analysis for factors influencing FDI choices in underdeveloped countries. Thus, presence of a great responsibility and democratic institutions support the foreign investors delocalized towards these countries. *Li and Reuveny (2003)* found a relationship between capital expanding, including FDI, and the voice and responsibility. These authors released a positive and significant relationship between this opening and this voice and this responsibility. On the other hand, *Quinu (2001)* proved that there exists a negative correlation between FDI and the voice and responsibility.

*Zidi and Ali (2016)* analyzed in a study the relationship between FDI and governance indicators of MENA region. These authors found that the voice and responsibility, the regulation quality and the right role are important variables for FDI entries. *Coelho (2010)* concluded that the taxes role is regularly an important tool for political decision makers in order to attract FDI. In addition, *Chen Bing (2007)* noted that the tax incentives play a driving role in the attraction of FDI. *Chen Bing (2007)* checked that the infrastructure had a positive and significant impact in his study.

*Cleeve (2008)* analyzed the impact of tax incentives on FDI attractiveness in sub-Saharan Africa. He used traditional and recent variables in order to validate the impacts of tax incentives on FDI attractiveness. *Cleeve (2008)* showed that traditional variables and government policies exert important effects in FDI attractiveness in sub-Saharan Africa. This author checked that tax incentives or tax exemptions seem to be most important for FDI attractiveness. *Eicher (2011)* noted that the creation of government policy, based on the impositions rates reduction, is an FDI stimulative. On the other hand, *Wheeler & Modi (1992)*, *Chakrabarti (2001)* and *Mooij and Ederveen (2005)* validated empirically that impositions rates do not affect FDI flows.

*Busse (2004)* studied the impact of civil liberties, policies level and institutions quality on FDI. *Busse (2004)* found a positive and significant relationship between democracy and FDI flows. *Harms and Orsperung (2002)* noted that political rights and civil

liberties increased individual FDI flows. In addition, *Kolstad & Villanger (2004)* and *Desider & Mayer (2004)* suggested that the increase in political freedom and civil liberties raises FDI flows. On the other hand, *Singh and John (1995)* checked that there is no relationship between political rights and FDI on GDP for a sample of some developing countries. *Norbachet al. (2001)* affirmed the absence of relationship between civil laws and FDI flows in their empirical study.

*Nishimizu & Robinson (1986)*, *Nishimizu & Page (1991)*, *Tybout (1992)* and *Helleiner (2002)* showed that open trade reduced the manufacturing costs and generated an economic growth realizing of profits rise. In addition, this opening encourages FDI by information easy access. *Asiedu (2002)* noted that trade opening to a lesser extent encourages FDI in sub-Saharan Africa compared to other developing economies. On another side, *Bojinova and Tøndel (2008)* noted that opening receptivity is actually larger for sub-Saharan Africa than for other countries. *Seim (2009)* noted that foreign companies, which aim to widen their market, could solve this problem in spite of opening high degree, little restrictions and low commercial costs. However, the market could be better been useful by an export rather than by FDI. Consequently, a high degree of opening can be related to a low level of FDI entries. *Busse & Hefeker (2007)* and *Globerman & Shapiro (2002)* checked the absence of a relationship between FDI and commercial opening.

## II. EMPIRICAL VALIDATION

In this article, we will analyze the effect of good governance in FDI attractiveness, i.e. we will show the contribution of good governance in creating a favorable climate towards FDI. For that, we will check this contribution from a sample of twelve countries of MENA region during a study period going from 1996 to 2015. The sample covers the following countries: *Tunisia, Morocco, Algeria, Bahrain, Egypt, Republic Iran, Jordan, Oman, Saudi Arabia, Sudan, Mauritania and Turkey.*

We will use several variables in order to understand the importance of governance on FDI increasing. For that, we will approximate governance impact on FDI attractiveness from endogenous variable FDI-GDP. This variable is expressed by FDI flows compared to gross domestic product (GDP). FDI denote net investments entries to acquire a durable participation in company operating in another economy than the investment one. This variable relates to the summation of equities, of the reinvestment of benefits, other long-term capital and short-term capital. This variable expresses nets flows entries of new investments in the declaring economy by foreign investors and it is divided by GDP. Our endogenous variable is released in the World Bank.

The explanatory variables, which will be used in FDI attractiveness, are diversified between governance and macroeconomic variables. The governance variables are Infrastructure, Citizen Voices & Responsibility, Political Stability & Absence of Violence, Government Effectiveness, Rule of Law, Regulatory Quality and Anti-Corruption. The macroeconomic variable represents gross domestic product per capita in constant dollars for the base year of 2010, which measures purchasing power parity, inflation rate and human capital.

The infrastructure (Infr) is approximated by the number of the phone-lines for cent inhabitants. It is a variable which represents the infrastructure in the host country. We obtained this variable from the World Bank and this one denotes the industrial factor which has a crucial influence in FDI increase in a country.

- The variable citizen Voice and responsibility (VOA) is reflected by the perception of the extent to which the citizens of a country are able to take part in their governance selection. Like expression freedom, association freedom and free media. This VOA has an institutional power and we are based on work of Kaufman et al. (1999), "Transparency International", in order to obtain the data base of this variable during the period going from 1996 to 2015.
- Political stability and absence of violence (SPAV) are represented the probability that the government is destabilized or reversed by unconstitutional or violent means including politically justified violence and terrorism. This stability is an institutional variable obtained from Kaufman et al. (1999) work.
- Effectiveness of public authorities (EPP) is measured by public services quality, quality of civil services and degree of its independence compared to political pressures, quality of policies formulation and the implementation of commitment credibility of

the government to these policies. This EPP is an institutional variable released like the work of Kaufman et al. (1999).

- State of the right (ED) is reflected by the perception of measurement which the agents trust and fulfill with the rules of the society and in particular the execution quality of the contracts, of the property rights, the police & the courts, the probability of the crime and violence. This ED is estimated like in Kaufman et al. (1999) work and it is an institutional factor.

The regulation Quality and the fight against corruption (QRLC) are the government capacity to formulate and apply policies and regulations which allow the development of the private sector. This Quality is obtained from Kaufman et al. (1999).

The human capital (CH) is measured by the schooling rate in the secondary. This capital is the commercial factor of FDI attractiveness.

The inflation rate (INF) is measured from the consumption price index. This rate is giving the FDI influence on the general level of local prices. Economic growth is approximated by gross domestic product (GDP). This growth is due to the foreign investments.

This data base contains two dimensions: twenty years as temporal dimension and an individual dimension of twelve countries in MENA region. For that, we will use technical advanced econometrics in order to consider these individual-temporal data.

a) Descriptive analysis

We will use position indicators and dispersion and form indicators for studying this data base for a sample of the MENA countries during a period going from 1996 to 2015. The table below shows position indicators for this data base.

Table n°1: Position Indicators

	Mean	Median	Maximum	Minimum
FDI -GDP	3.336976	2.037949	37.16593	-4.699521
Infr	-0.177867	-.1026653	0.6314899	-1.556922
VOA	-0.1970169	-0.0528085	0.7554815	-1.633496
SPAV	-0.960479	-0.9125755	0.1921429	-1.883319
EPP	-0.2691478	-0.1069397	0.8668382	-1.730304
ED	-0.6037501	-0.5210468	1.072188	-2.65486
QRLC	-0.2616505	-0.2214134	0.8327547	-1.513797
CH	76.55387	71.41025	164.1154	17.85861
INF	8.821758	4.247471	132.8238	-1.347894
L GDP	4.288584	4.241787	18.8691	-6.608687



From the position indicators, we can see that the averages are negative for the explanatory variables of infrastructure, political stability, citizen voice, governance, regulation quality & fight against corruption and the State & law. On the other hand, these averages are positive for the endogenous variable (FDI-GDP) and gross domestic product, inflation & human capital. The median shares the population of each variable into two

equal parts. In addition, we notice that the number of observations equals 240 and the cross-section equals 12.

We will study the estimation quality and the adjustment of each component of this database from the indicators of absolute and relative dispersions. For this, the table below shows the dispersion criteria for these variables.

Table n°2: Dispersion Indicators

	Std. Dev	Variance	Variation Coefficient
FDI -GDP	4.931495	24.31964	1.477833
Infr	0.5357296	0.2870062	-3.011968
VOA	0.6021353	0.3625669	-3.056262
SPAV	0.4730836	0.2238081	-0.4925497
EPP	0.6857901	0.4703081	-2.548006
ED	0.8087664	0.654103	-1.339571
QRLC	0.4920324	0.2420959	-1.880495
CH	32.73923	1071.857	0.4276627
INF	15.26777	233.1048	1.730695
LPIB	3.037651	9.227325	0.708311

We note from the dispersions indicators that the standard deviations are very weak for the variables VOA, Stability, Governance, Quality & regulation & the fight against corruption and State & right, thus it is a good adjustment for these variables. On the other hand, the standard deviations are high for the endogenous variable and the macro-economic variables. Thus, the linear adjustment, of these variables, is very bad. The precision indicator is bad for the endogenous variable

because the variance of this variable is very high. On the other hand, the risks for the variables of the governance are very weak. We will study the normality of these explanatory variables and the contribution of FDI in the economic growth for the twelve countries of MENA region from the statistics of Jarque & Bera. The table below summarizes the indicators of the forms for these variables.

Table n°3: Indicators of the forms

	Skewness	Kurtosis	Jarque-Bera	Significance
FDI -GDP	3.686808	20.82609	137.2904	0.000000
Infr	-0.549992	2.567469	4.302526	0.116337
VOA	-0.6123835	2.436066	3.539106	0.170409
SPAV	-0.0468986	2.4516	5.286786	0.071120
EPP	-0.52603	2.311012	1.021586	0.600019
ED	-0.3811942	2.943606	1.938767	0.379317
QRLC	-0.3697159	2.841374	21.89580	0.000018
CH	0.4413759	2.360987	16.21255	0.000302
INF	4.48135	28.26731	3.380421	0.184481
LGDP	-0.0175252	5.889507	200.5122	0.000000

While referring to this table, we can note that variables VOA, Infr, EPP, ED and INF follow normal laws since the statistics of Jarque & Bera are lower than the tabulated value of Chi2 to two degrees of freedom. On the other hand, the endogenous variable, i.e. the contribution of FDI in the economic growth for the

sample of the countries MENA region during our study period does not follow the normal law because the statistics of Jarque & Bera are significant with the threshold of risk of 1%. The non-normality of this variable is explained by the information asymmetry for FDI compared to the gross domestic product and non-



flattening. In addition, the fight against corruption, SPAV, the GDP and CH do not follow the normal law because their statistics of Jarque & Bera are higher than the critical value of the law of Chi2 to two degrees of freedom. Governance variable follows the normal law only in threshold of risk of 5% and 1%.

b) *Estimation and Interpretation Results*

We will consider a static relationship that describes the contribution of foreign direct investments comparing to GDP according to several explanatory variables that are: infrastructure (Inf), citizen Voice &

responsibility (VOA), Political stability & absence of violence (SPAV), Effectiveness of public authorities (EPP), Rule of law (ED) and Regulation Quality & the fight against corruption (QRLC). The macro-economic variable characterizes the gross domestic product (GDP) per capita in constant dollars for the basic year of 2010, which measure the purchasing power parity, the human capital and the inflation rate during the period of 1996 to 2015 for a sample of twelve countries. The model of reference is symbolized in the linear form according to:

$$FDIGDP_{it} = \alpha_i + \beta_i Infr_{it} + \chi_i VOX_{it} + \delta_i SPAV_{it} + \phi_i EPP_{it} + \gamma_i ED_{it} + \lambda_i QRLC_{it} + \varphi_i INF_{it} + \eta_i LPIB_{it} + \tau_i LCH_{it} + \varepsilon_{it}$$

The table below shows the homogeneity-heterogeneity tests for the model that measures the effect of the good governance on FDI attractiveness.

Table n°4: Homogeneity-Heterogeneity Tests

	Constants Homogeneity	Coefficients Homogeneity
FDI-GDP <sub>it</sub>	5.04 (0,000)	1.107 (0,1317)

The remark addresses to this table is that all the coefficients of good governance on FDI attractiveness are identical for the countries of MENA region, although the invariants effects are heterogeneous between these countries for this good governance. The specification tests show that theoretical model can be formalized like a Panel with individual effects. Therefore, to estimate

good governance on FDI attractiveness for these countries we will use within and GLS techniques. The table below will recapitulate these two estimation procedures in the observation of the two static relationships describing the impact of good governance on FDI attractiveness.

Table n°5: Static Estimation of good governance and FDI

	Within Estimation		GLS Estimation	
	Coefficients	Significance	Coefficients	Significance
Infr	3.60328	0.060	1.295944	0.406
VOA	-3.154676	0.082	-3.585694	0.012
SPAV	-0.4672251	0.703	-0.2425087	0.786
EPP	-0.6652985	0.690	-0.7476247	0.515
ED	0.1032952	0.914	1.41371	0.000
QRLC	0.3659666	0.797	-0.687441	0.903
CH	0.1855774	0.000	0.12678	0.000
INF	-0.0061056	0.771	-0.0060608	0.766
LGDP	0.1690067	0.047	0.2402997	0.004

The estimation of the static relationship that describes the contribution of FDI compared to the GDP for the sample of the MENA countries gives expected and significant results. Nevertheless, the Rule of law exert positive and not significant impact for the within method or LSDV. On the other hand, the fight against corruption has a negative and significant effect by GLS method. The right and the State play a positive and not significant role in the increase in FDI volumes for the

within technique but significant by GLS procedure. The gross domestic product has a positive and significant influence for the two suitable techniques. Political stability has a negative and not significant effect in FDI volumes. The regulation quality & the fight against corruption (QRLC) exert a positive and not significant impact on FDI for the MENA countries. We will use the arbitration test of Hausman (1978) in order to identify the nature of the individual effects.

The table below shows the *Hausman (1978)* test for the contribution of FDI on the GDP for the MENA region during a study period going from 2000 until 2014.

Table n°6: Hausman Test

	FDI-GDP <sub>it</sub>
Stat-Hausman	$\chi^2(9) = 23.23 (0.0031)$

From this table, we note that *Hausman (1978)* statistics are statistically significant with the threshold of risk of 1%. For that, we retain the alternative assumption where the individual effects are fixed, i.e. the special characters are invariants during the time for the twelve countries of MENA region. We referred to the within procedure in order to estimate the static relationship which connects FDI according to the explanatory variables of governance and macro-economic ones. We will refer to the estimated results by the within method to interpret this static relationship.

The infrastructure variable exerts a positive and significant effect on FDI entries for the MENA region with the risk of 10%. This variable had a crucial influence in the FDI increase in this region. This result is perfectly coherent with the study of *Seung-Hyun Lee et al. (2016)*.

The variable citizen Voice and responsibility (VOA), for the MENA countries, had a negative and significant impact on FDI with the threshold of risk of 10%. Thus, this variable can influence in a negative way on FDI flows, in spite of the bearable efforts of the MENA countries as regards democracy namely: expression freedom, association freedom & the media freedom with a substantial and institutional responsibility. This result does not comply with the works of *Dutta & Roy (2009)*, *Gholipouret al. (2011)* and *Eichengreen & Leblang (2008)*.

The variable political stability & the absence of violence (SPAV) had a negative and non significant effect on FDI for the sample of the MENA countries. This variable in the countries of North Africa and the Middle East remains doubtful with the political violence like the riots and terrorism. Thus, in spite of the minor role of this variable in FDI attractiveness, the countries of this sample are obliged to well control the level of political stability in order to ensure a stable environment for the investors. This result is contradictory with works of *Musibahet al. (2015)* and *Mgadmiet al. (2017)*.

The effectiveness of the public authority (EPP) is statistically nonsignificant and negatively related with FDI for the MENA region. This indicates that there exist in this region limits for public services quality, independence compared to the political pressures, policies formulation quality and for implementation & credibility of government.

The right and the State (ED) have a positive and nonsignificant impact in the increase of FDI volumes. This impact follows to the study of *Mgadmiet al. (2017)*. Thus, the right primacy, in Middle East and North Africa

countries, is not negligible and does not have any influence on FDI attractiveness. From those results, the economic agents have confidence and comply with the society rules in particular the execution quality of the contracts, property rights, policies and courts. This impact comply with the work of *Mgadmiet al. (2017)* and of *Gutierrez (2015)*, this implies that regulation quality and the fight against corruption in this region were controlled so that the foreign investors can inspect other important indicators.

The variable of the human capital from the within technique plays a positive and significant role on FDI flows for the MENA countries, i.e. the schooling level has a positive effect in FDI volumes attractiveness.

Inflation exerts a negative and no-significant effect on FDI attractiveness for the MENA region. This effect is identical to the results of the studies of *Vijaya kumaret al. (2010)* and of *Suleiman et al. (2015)* where inflation has noxious impacts on FDI. The adoption of a monetary policy which aims of target the inflation rate is an irreversible condition in order to attract FDI. For that, the MENA countries are obliged to control this target for improving the purchasing power and the consumption within the local markets.

Gross domestic product (PIB) has a positive and significant effect with the threshold of risk of 5% on FDI flows for the MENA region, i.e. the rise of the economic growth generates an increase in FDI entries. Thus, most MENA countries are interested in increasing the rate of economic growth to attract FDI. Indeed, the foreign investors are more interested in the potential of an economy in full growth since this latter offer an additional opportunity for these investors. In addition, a high rate of economic growth allowed the foreign investors to generate better returns of their capital, better anticipation of exports and offer a warranty as regards sufficient currencies entries. This positive effect, of the economic growth on FDI, is confirmed with the study of *Vijayakumaret al. (2010)*.

### III. CONCLUSION

Generally, FDI play a significant role in the promotion of the long-term economic growth in the developed and underdeveloped countries because of the increase in the rough creation of the fixed capital. Indeed, these FDI can contribute to economic development in terms of technology transfer, creation of industries on a large scale and upwards of the total factors of productivity (PGF).

During last years, the debate on economic development and the political speech are interested in the concept of good governance that became a significant factor of good performance of the countries in the market and, consequently, in FDI attractiveness. On the other side, the governments that seek to attract FDI should create a climate more favorable for the Multinational corporations thanks to the improvement of the political and economic institutions which stimulate the FDI entries. However, several factors such as corruption, political instability and macroeconomic instability affect this climate negatively.

We determined in this article the influence of macro-economic indicators and of governance indicators on FDI for a sample of twelve MENA countries during the period 1996-2015. We referred to the structure of Static Panel with individual effects from the Fisher tests of homogeneity-heterogeneity. We considered the static relationship that connects the endogenous variable FDI with the economic growth according to the macroeconomic variables and the governance variables by the suitable techniques.

We carried out expected and significant results in the estimation by the within and GLS methods of the static relationships of FDI on the economic growth according to macroeconomic and governance variables. These results conform to several previous studies that studied the impact of governance quality on FDI attractiveness. We used an arbitration test in order to identify the nature of individual effects. This *Hausman* (1979) test of arbitration is statistically significant with the threshold of risk of 1%, i.e. the special characters, for this relationship, are invariants during the time in the sample. For that, we specified the model that describes FDI according to macroeconomic variables and governance variables from a Panel with fixed individual effects.

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GLOBAL JOURNAL OF MANAGEMENT AND BUSINESS RESEARCH: B  
ECONOMICS AND COMMERCE

Volume 19 Issue 1 Version 1.0 Year 2019

Type: Double Blind Peer Reviewed International Research Journal

Publisher: Global Journals

Online ISSN: 2249-4588 & Print ISSN: 0975-5853

## External Public Debt and Economic Growth in Morocco: Assessment and Impacts

By Driss Chkiriba & Nor-Eddine Oumansour

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**GJMBR-B Classification:** *JEL Code: F43*



*Strictly as per the compliance and regulations of:*



# External Public Debt and Economic Growth in Morocco: Assessment and Impacts

Driss Chkiriba <sup>α</sup> & Nor-Eddine Oumansour <sup>σ</sup>

**Abstract-** This paper has the aim to study the impact of the external public debt on the economic growth in Morocco. The estimates cover the period 1988-2016. The econometric instrument used for estimating the model parameters is based on the "ARDL bound testing" method. The results confirm the high public debt has a negative and largely significant effect on the economic growth, for the short as well as for the long term. The effect is much more important in the short term than in the long term. The results corroborate most studies stating that the external debt has a negative impact on economic growth.

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## I. INTRODUCTION

The relationship between external public debt and economic growth continues attracting the interest of policy makers and academicians. This has allowed boosting the debate on the impact of external debt on growth.

According to some theoretical studies, the indebtedness has beneficial effects on financing a national economy. It can help on reducing capital over-accumulation (Diamond, 1965), as it can face the liquidity constraints affecting some economic agents (Woodford, 1990), and reduce the losses associated with non-lump-sum taxation (Barro, 1979). It enables developing the financial intermediation capabilities of an economy (Saint-Paul, 1993), and helps finance public expenditures. The theoretical literature suggests that foreign borrowing has a positive impact on investment and growth up to a certain threshold. Beyond this level, its impact becomes negative.

The theoretical literature dealing with the relationship between outstanding external debt and growth (Krugman, 1988) focus largely on the negative effects of debt overhang, which can be defined as a situation in which the prepayment of the external debt is lower than the contractual value of the debt. If a country's debt level exceeds its reimbursement capacity with a certain probability in the future, the expected debt service is likely to be a growing function of its production level. Thus, some returns on investment in the national economy are effectively "taxed" by existing foreign creditors, and investment by domestic and foreign

investors is discouraged (Clements et al., 2003) leading to a negative impact on the economic growth.

Debt Overhang reduces investment and growth by increasing uncertainty. By increasing the stock of the public debt, it is expected that the debt service obligations will be financed by taxation measures (Agénor et al., 1996). Potential private investors will prefer to exercise their waiting option (Serven, 1997)). Moreover, any engaged investment is likely to be diverted to fast-return activities rather than long-term, high-risk, and irreversible projects. Rapid debt accumulation can be accompanied by increasing capital flight if the private sector fears imminent devaluation and / or higher taxes (Oks and Sweder, 1995).

As indicated by Cohen (1993), the relationship between the nominal value of debt and investment can be represented as a kind of "Laffer curve". When outstanding debt exceeds a threshold, the anticipated reimbursement declines due to the mentioned adverse effects previously.

In Morocco, as an economy classified by the World Bank in the "lower-middle-class income" category, the public debt continues increasing. Indeed, the stock of the treasury debt alone evaluated to 657.5 billion dirhams in 2016, which represents 65% of GDP against 430.9 billion in 2011, an increase of 52.6%. By integrating the sector of public institutions and enterprises, Morocco's total outstanding debt exceeded 970 billion dirhams in 2016, compared to 520.4 billion in 2011, an increase of 86.4%. As for Morocco's public external debt, it follows the same logic. Its outstanding amount increased from \$ 22.048 billion in 2011 to 30.95 in 2016, an increase of 65.3%<sup>1</sup>.

Moreover, the low growth rates achieved by the Moroccan economy during the study period and their volatility are often attributed to the importance of the level of public debt. The so conducted study of the effects of external indebtedness on economic growth is a current and particularly important subject of research. The purpose of this paper is to assess the impact of external public debt on economic growth in Morocco. To test these effects, we will use a quantitative empirical methodology based on the "ARDL bound testing"

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<sup>1</sup> Data published by the Ministry of Economy and Finance of Morocco. Retrieved from: <https://www.finances.gov.ma/fr/Pages/Statistiques.aspx?Active=Dette&m=vous%20%C3%Aates?>

regression model. The estimates cover the period 1988-2016.

To achieve the purpose of this paper, we carry out in the first part an empirical literature dealing with the topic of the study. The part will deal with the stylized facts relating to growth and external indebtedness in Morocco. The specification of the empirical model and the presentation of the estimation method and variables are the subject of the third part. The last part concludes and discusses the implications of the results.

## II. REVIEW OF THE EMPIRICAL LITERATURE

The empirical literature on the effect of external debt on the performance of the economy reveals diversified empirical support for the theory of debt overhang. Empirical studies of this relationship have been largely developed since the late 1980s. Their goal was often to evaluate the validity of the debt overhang theory (Abdelhafidh, 2014). According to this theory, the negative impact of debt on growth is confirmed only when its weight is high and when there are reimbursement shortcomings (Corden 1988; Krugman 1988).

Empirical studies that dealt with the relationship between external debt and economic growth focus either on a group of countries or on the particular cases. Looking at a sample of countries during the period 1982-1999, Chowdhury (2001) found a negative effect of debt on growth in poor and highly indebted countries and other countries, which are not poor and indebted.

On the basis of data from Latin American countries for the period (1970-2000) and Asian countries for the period (1982-2002), Sen et al. (2007) found that the effect of external debt on growth is negative, but more important in the first group countries. The used instrument in Sen et al. (2007) study are the ordinary least squares (OLS), the fixed effects models, the random effects models, and the instrumental variable models.

Having identified debt thresholds in a group of 93 developing countries over the period 1969-1998, Pattillo et al. (2002) found that the average impact of external debt per capita GDP growth is negative for the net present value of debt levels above 160-170% of exports and 35-40% of GDP.

On the other hand, high levels of public debt seem to affect growth because of their moderating effects on physical capital accumulation and total factor productivity growth. In another study of a group of 61 developing countries in Sub-Saharan Africa, Asia, Latin America and the Middle East for the period 1969-1998, Pattillo et al. (2004) found that the doubling of debt levels leads necessarily to a slowdown of almost 1 percentage point in the growth of physical capital per capita and the growth of total factor productivity.

In the same logic, Clements et al. (2003) concluded on the basis of a sample composed exclusively of low-income countries during the period 1970-1999 that high levels of debt can restrain economic growth. Debt seems to affect growth by its effect on the efficiency of resource use. Debt, however, has a harmful effect on growth only after reaching a threshold level. This threshold is estimated at around 50% of GDP for the nominal value of the external debt and at around 20 to 25% of GDP for its estimated net present value.

The external debt service can also affect growth by crowding out private investment or reducing the amount of resources available for infrastructure and human capital, which negatively impacts growth (Oxfam International, 1999). Similarly, the stock of debt is assumed to directly affect growth, by reducing incentives to undertake structural reforms by the state and indirectly by acting on investment.

In another recent study, based on a total sample of 35 countries in the euro area, the European Union and advanced countries, over the period 2006-2013, using the generalized dynamic moments method, Ben Ltaief (2014) concludes that the high burden of public debt has a negative effect on growth.

Based on the panel data modeling for a sample of six countries<sup>2</sup> of the West African Economic and Monetary Union Economic (WAEMU) during the period 1985-2010, Jerome (2013) concludes that the external debt is in favor of the growth. However, when this debt reaches a certain threshold, it influence negatively the growth. The external debt leads to an enhancement of the economic growth of the region when it is less than 51% of the GDP. Beyond this threshold, any accumulation of external debt constitutes an obstacle for the economic growth of the Union.

Based on the panel data from a sample of eight countries of the same region throughout the period 1972-2012, and by using the PTR model, Guissé (2016) concludes that below a threshold of 80% relative to GDP, external public debt has a positive effect on the growth. Beyond this threshold, the debt negatively and significantly influences the growth of the WAEMU countries.

Hwang et al. (2010) used panel data from 20 high external debt countries selected in Asia and Latin America over the period 1982-2004 to study the relationship between financial sector development and economic growth and the external debt on the other hand. The authors found that among 20 countries with high external debt, the external debt-to-GDP ratio is strongly negatively correlated with economic growth rates, indicating that excessive indebtedness weakens economic growth in a country.

<sup>2</sup> Burkina Faso, Côte d'Ivoire, Mali, Niger, Sénégal and Togo

Ferreira (2009) conducted Granger causality tests for twenty OECD countries over the period 1988-2001, and showed that rising debt ratios have negative effects on economic growth. The effect is statistically significant in both cases: high public debt reduces economic growth, and weaker growth exacerbates debt. The use of time series econometrics has also examined the relationship between external debt and growth in particular country cases.

Having used the ARDL approach on data for the period 1970-2010, Abdelhafidh (2014) concludes that the effect of the debt on the growth of Tunisia was negative over the entire period under study.

Karagöl (2002) also showed a negative effect of debt service on Turkey's growth over the period 1956-1996 in the long and short terms. Hameed et al. (2008) confirmed the same result in the case of Pakistan over the period 1970-2003. For its part, were (2001) showed that current debt flows and accumulated debt stock in the past negatively impact Kenya's GDP growth for the period 1970-1995.

Based on endogenous growth models, Maghyereh et al. (2002) examined the relationship between external debt and economic growth in Jordan over the period 1970-2000. After taking into account the possibility of the existence of a threshold effect, the authors conclude that the external debt below a certain threshold (53%) has a positive impact on economic growth. In other words, once the external debt exceeds this level, its impact on the performance of the Jordanian economy becomes negative and statistically significant.

Using a microeconomic model with overlapping generations, Crettezet al. (1997) analyzed the effects on growth and well-being of two modes of financing productive public expenditure (education expenditure). It is a balanced budget policy (financing expenses only

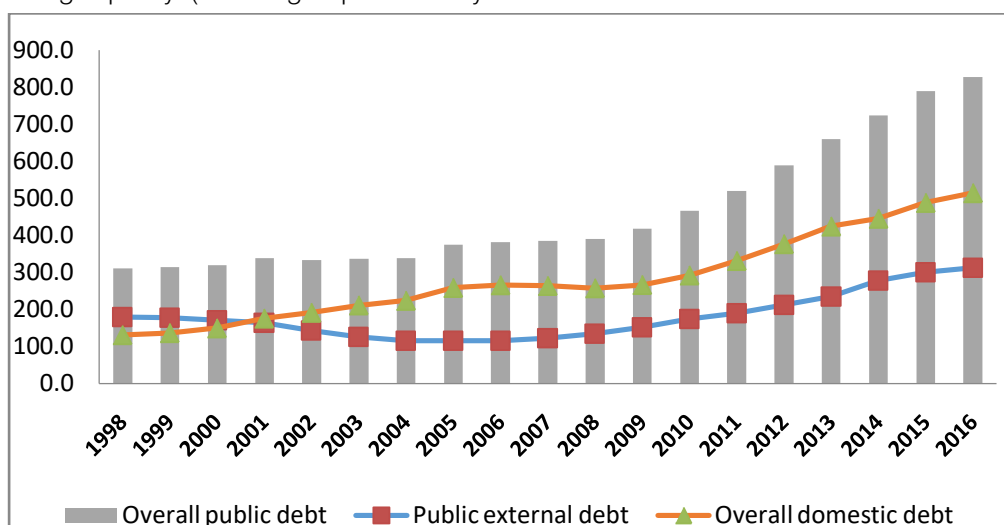
through taxes) and a public debt policy. The authors have shown that with a balanced budget policy, the equilibrium growth rate is always greater than what is achieved with debt financing.

### III. EXTERNAL DEBT LEVEL AND COMPOSITION: MAJOR TRENDS

The external debt concerns the relationship between local debtors (public sector, institutions and public enterprises, local authorities, and the private sector) and foreign creditors (international organizations, commercial banks, holders of bonds and titles). Thus, the study of the evolution of this economic phenomenon remains incomprehensible and any attempt of explanation suffers from severe limitations or inconsistencies, if one does not take into account the economic reality of the country under study and in particular the transformations that occur in the internal economy and condition the behavior of external debtors (Basualdo, 2006).

In the implementation of its new strategy to adoption the new sectoral policies (industrial acceleration plan, Morocco Green Plan, Halieutiste plan ...), Morocco intends to accelerate its economic growth through a reinforcement of the investments financed particularly and largely by the indebtedness. A descriptive analysis of Morocco's external debt, of its components as well as its relations with certain key variables should allow a better understanding of its behavior and produce some indications a priori about its implications.

The figure 1 below shows that the evolution of the public debt in Morocco during the period 1998-2016 is strongly linked to that of the external debt with a weight lower than that of the domestic debt. However, with an upward trend especially from of the year 2007.



Source: Elaboration of authors based on data<sup>3</sup> from the Ministry of Economy and Finance of Morocco

Figure 1: Evolution of Moroccan public debt (billions of DH)

<sup>3</sup><https://www.finances.gov.ma/fr/Pages/Finances-publiques.aspx?m=NOS%20METIERS&p=32>

Since 2005, the stock of total public debt has seen an upward trend from MAD 374 billion in 2005 to MAD 827 billion in 2016, an increase of nearly 221% and with an average annual growth rate of 6.8%. This increase is attributable in part to the spectacular rise in the order of 169% of the total external debt which rose from 116 billion dirhams in 2005 to 312 billion dirhams in 2016, contrary to the period 1998-2004 of which it has decreased by 36% from 179 billion dirhams to 115 billion.

In total, over the entire period 1998-2016, the external debt increased by 74% with an average annual growth rate of 3%.

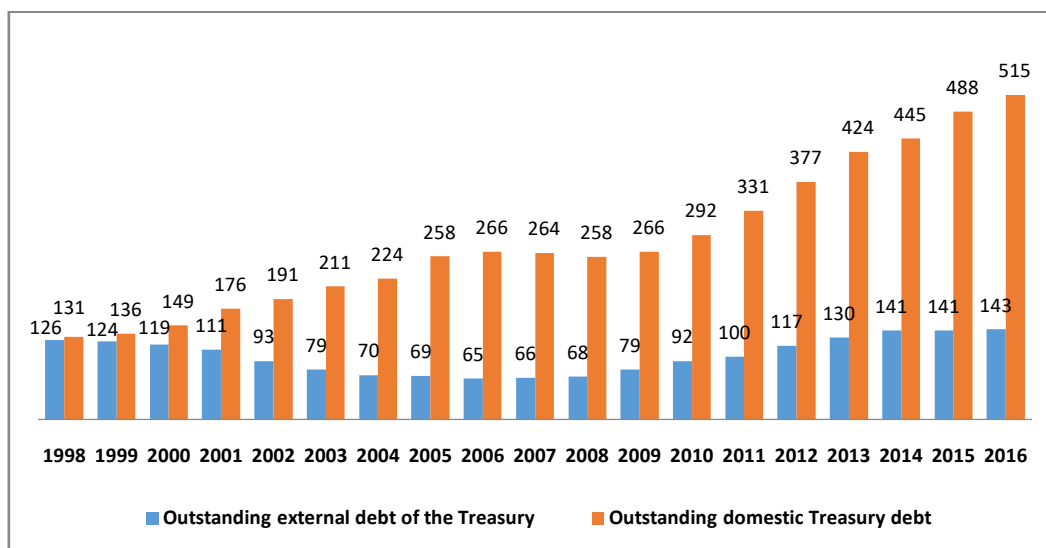
In the same way, domestic debt has seen an upward trend, rising from 131 billion DH in 1998 to 515 billion DH in 2016, an evolution of 293%, and an average annual growth rate of 7.5%.

Between 2012 and 2016, the external debt has evolved by 47% while the domestic debt has only

increased by 37%. This shows that Morocco has resorted more to external indebtedness in recent years, even if the domestic debt is still higher with a 62% of the total stock of public debt in 2016. Further analysis, the structure of the debt, would permit a better understanding of their evolution.

The outstanding external debt of the treasury has decreased by 48% between 1998 and 2006, from 126 to 65 billion DH, before recording an increase of 117% to 143 billion DH in 2016 against DH 66 billion in 2007.

The outstanding domestic debt of the treasury had a first upward trend until 2006 to reach 266 billion DH, before stabilizing in 2008 to 258 billion DH and then again saw a spectacular uptrend to reach 515 billion of DH during the period 2009-2016.



Source: Elaboration of authors based on data from the Ministry of Economy and Finance of Morocco

Figure 2: Evolution of outstanding treasury debt (billion DH)

Moreover, unlike the share of the treasury in the total external debt, which fell from 54.9% in 2012 to 45.6% in 2016, Public Entities and Enterprises saw their weight in the outstanding total external debt increased from 44.5% to 54.4%.

This contrasting trend can be explained by the continued commitment of Morocco to achieve its sectoral strategies (Morocco green, industrial acceleration plan, Halieutis...) whose main operators are the public sector.

Table 1: Structure of the external public debt

	2012	2013	2014	2015	2016
External public debt (billion DH)	212,7	234,7	278,0	301,0	312,5
▪ Treasury (%)	54,9	55,3	50,7	46,8	45,6
▪ Public institutions (%)	44,5	44,3	48,9	52,9	54,4
% of GDP	25,7	26,9	30,1	30,6	30,8

Source: Elaboration of authors based on data<sup>4</sup> from the Ministry of Economy and Finance of Morocco

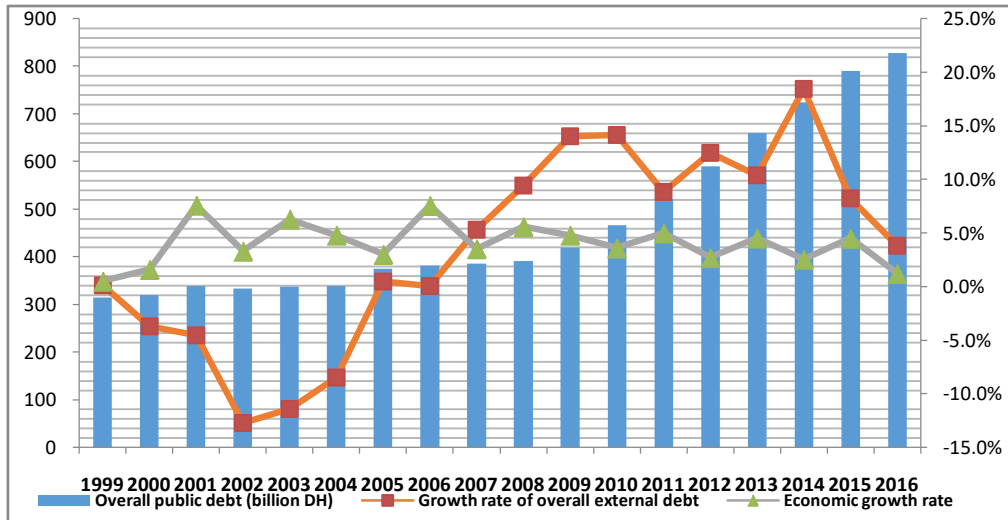
<sup>4</sup> <https://www.finances.gov.ma/fr/Pages/Finances-publiques.aspx?m=NOS%20METIERS&p=32>



Related to GDP, the total debt of the treasury reached 64.8% in 2016 against 58.2% in 2012, an increase of 6.6 points. This trend is largely attributable to the increase in domestic debt of 6.3 points of GDP, from 44.4% in 2012 to 50.7% in 2016. Indeed, the external debt ratio of the treasury has increased from 13.8% of GDP in 2012 to 14.1% in 2016.

Moreover, the growth rate of Morocco's economy and that of the public external debt have

evolved in the opposite way and with different magnitudes. Indeed, during the period 1999-2007, the external debt grew annually on average by- 3.9% against an economic growth rate of 4.2%. On the other hand, the level of external indebtedness experienced an average annual evolution of 11.1% over the period 2008-2016, while the growth rate increased by only 3.8%.



Source: Elaboration of authors based on data from the Ministry of Economy and Finance of Morocco

Figure 3: Evolution of the economic growth rate, the growth rate of public external debt (right axis in %) and the total public debt (left axis in billion DH)

#### IV. EMPIRICAL METHODS AND PROCEDURES

##### a) Model specification

In order to assess the impact of the public external debt on economic growth, we assume a function of producing constant returns to scale of the form:

$$Y_t = K_t^\alpha H_t^\beta (A_t L_t)^{1-\alpha-\beta} \quad (1)$$

Where K measures physical capital,

$$\ln(y_t) - \ln(y_{t-1}) = \alpha [\ln(k_t) - \ln(k_{t-1})] + \beta [\ln(h_t) - \ln(h_{t-1})] + [\ln(A_t) - \ln(A_{t-1})] \quad (2)$$

Equation (2) shows the growth of GDP per capita (y), explained by the contribution of growth in physical capital per capita (k), human capital per capita (h), and Total Productivity of factors(A).

Following the endogenous growth models (known as the AK models) developed by Romer (1986), Lucas (1988) and Pagano (1993), we use the following specification to examine the relationship between external debt and economic growth:

$$\Delta \ln Y_t = \alpha_t + \beta X_t + \gamma D_t + \varepsilon_t \quad (3)$$

H measures human capital (educational level), and L is labor.

This specification is coherent with the Solow growth model developed by Mankiw et al. (1992) and with more recent work by Klenow and Rodriguez-Clare (1997) and Cohen (1997).

Taking into account the GDP per capita and introducing the log, equation (1) can be rewritten after first differentiation as follows:

Where  $\Delta \ln Y_t$  is the dependent variable (the first logarithmic difference in GDP per capita),

$X_t$  is the set of explanatory variables (including the logarithm of GDP lagged per capita, the first logarithmic difference in gross fixed capital formation as a percentage GDP, the terms of trade (TRAD), the inflation rate (INF) ...).

Variable  $D_t$  includes debt (including the first log difference in external debt as a percentage of GDP and the first logarithmic difference in debt service as a percentage of exports of goods, services and income streams) and  $\varepsilon_t$  is the error term.

b) *Presentation of the estimation method and variables*

The cointegration methods developed by Johansen (1988), Johansen-Juselius (1990), and Pesaran (2001) as well as the ARDL methods are used in the economic literature to empirically determine the short-term (SR) and long-term (LR) between the variables. The ARDL model has some advantages over other cointegration approaches.

Indeed, the traditional methods of co-integration may encounter problems of endogeneity. Whereas the ARDL method makes it possible to distinguish the dependent and explanatory variables and to eradicate the problems that may arise due to the presence of autocorrelation or endogeneity. The ARDL method estimates the SR and LR relationships simultaneously and provides objective and efficient estimates. Also, the relevance of using this method is that it is based on a

The basic form of an ARDL regression model is:

$$y_t = \beta_0 + \beta_1 y_{t-1} + \dots + \beta_k y_{t-p} + \alpha_0 x_t + \alpha_1 x_{t-1} + \alpha_2 x_{t-2} + \dots + \alpha_q x_{t-q} + \varepsilon_t \quad (4)$$

Where  $y_t$  is the variable to explain,

$X_t$  is the set of explanatory variables and

$\varepsilon_t$  is a random term of "disturbance", which we will assume to be "well behaved" in the usual sense. In particular, it is independent of time.

$$\Delta grw_{(t)} = \alpha + \sum_{i=1}^k \mu_{1i} \Delta grw_{(t-i)} + \sum_{i=0}^p \mu_{ki} \Delta X_{(t-i)} + \beta_1 grw_{(t-1)} + \beta_k X_{t-1} + \varepsilon_{1(t)} \quad (5)$$

$grw$  and  $X$  are respectively the endogenous variable (the rate of economic growth) and the set of explanatory variables explained below.

The parameter  $\varepsilon$  represents the error term and  $\alpha$  the constant.

The long-term relationship between the variables of the model, according to the ARDL approach, exists when we reject the null hypothesis of the absence of co-integration ( $\theta_1 = \theta_k = 0$ ). This hypothesis is tested through Fisher's test where the calculated value of the statistic is compared to the critical values simulated by Pesaran et al. (2001).

This study uses annual time series data on economic growth rate ( $grw$ ), external debt ( $dx$ ), human capital ( $sh$ ), physical capital stock ( $sk$ ), corruption perception index ( $corrup$ ), inflation ( $Inf$ ) and openness to trade ( $ouv$ ) for the period 1988-2016 to examine the relationship between external debt and economic growth in Morocco. The data were collected from the database of the Ministry of Economy and Finance and the Office of the Higher Commissioner for Planning of Morocco, Transparency International and PWT9.

## V. RESULTS AND DISCUSSION

The first step in estimating an ARDL model is the analysis of the stationarity of the variables. Indeed, the results of the unit root tests show that the set of variables are not integrated of the same order ( $sh$  and

single equation framework. It also takes a sufficient number of offsets and directs the data generation process into a specific general modeling framework (Harvey, 1981).

Moreover, unlike other multivariate co-integration techniques such as Johansen and Juselius (1988), the ARDL method allows to estimate the co-integration relation by the methods of mean squares once the offset order of the model is identified. The Error Correction Model (ECM) can also be derived from the ARDL approach (Sezgin and Yildirim, 2003). This model provides results for LR estimates while the other traditional co-integration techniques do not provide such inferences. Similarly, the ECM combines SR adjustments with LR balance without losing information (Pesaran and Shin, 1999).

The ARDL approach also has the advantage of testing the existence of the long-term relationships in small samples and allows testing between variables with different integration orders (Senayand Merter, 2010). Based on equation (3), the ARDL form of the equations to estimate in our model is as below:

$grw$  are stationary in level and the other variables are integrated of order 1). As a result, none of the variables are integrated into an order greater than 1. From these two characteristics, we deduce respectively that to test co-integration, the use of the ARDL approach is possible and it is the most appropriate contrary to Johansen's approach.

The second step is to compute the F-statistics using the "Bound Testing" approach (Table 2). It is a question of testing the null hypothesis according to which the coefficients of the delayed variables of the equation (5) are null.

Pearson et al. (2001) tabulated two groups of critical values. One group assumes that all variables are of order I (1) while the other assumes that all are of order I (0). This provides a band covering all possible classifications of variables in I (0) or I (1) or even partially integrated.

The F-statistics are equal to 10.61 and 8.09 respectively for the two selected specifications. These values are to be compared to critical values below and above the significance level of 5% and 1%. The test statistics are higher than the upper bound of all the models (3.49 and 4.37 respectively). Therefore, the null hypothesis of no co-integration is rejected and the existence of a long term relationship between the variables of the two specifications is concluded.

Table 2: ARDL F-Bound Test

Critical values		
Meaning threshold	I(0) Bound	I(1) Bound
5%	2,56	3,49
1%	3,29	4,37
F-statistical		
Specification I	10,61	
Specification II	8,09	

Source: Author's estimate

After showing the existence of a co-integration relationship between the model variables estimated by the Bound Testing method, the choice of the most appropriate ARDL model is made using the AIC criterion. In our case, we chose an *ARDL* (2, 3, 3, 3, 2) for the first specification and an *ARDL* (1, 3, 0, 0, 0) for the second specification (see figures in the appendix).

The estimates presented in the tables below show that the explanatory power of the two selected specifications is important and most of the estimated coefficients are statistically significant.

Similarly, the error correction mechanism is maintained for both estimated specifications. It is negative and significant at the 1% level. Thus, the coefficient associated with the variable *grw* shifted by one period ( $\Delta$  (*grw* [-1])) being negative and significant at the 1% threshold for the two estimated specifications. Overall, the signs associated with the estimated short-term and long-term coefficients are overall satisfactory.

Table 3: Results of short-term estimates

	<i>Specification I</i> <i>ARDL(2, 3, 3, 3, 2)</i>	<i>Specification II</i> <i>ARDL(1, 3, 0, 0, 0)</i>
<i>lgrw</i> (-1)	-2.12 (-6.87)	-1.22 (-6.44)
<i>lsk</i> (-1)	0.23 (3.97)	0.02 (0.75)
<i>lsh</i> (-1)	0,19 (3,33)	
<i>ldx</i> (-1)	-0,26 (-3,82)	
<i>Ldx</i>		-0,04 (-1,91)
<i>IOUV</i> (-1)	-0,04 (-0,50)	
<i>D(lgrw</i> [-1])	0,26 (1,47)	
<i>IINF</i>		-0,06 (-1,98)
<i>Lcorrup</i>		-0,22 (-2,11)
<i>D(lsk)</i>	0,17 (3,27)	0,13 (2,20)
<i>D(lsk</i> [-1])	-0,07 (-1,13)	0,08 (1,27)
<i>D(lsk</i> [-2])	0,07 (1,31)	0,23 (3,41)
<i>D(lsh)</i>	2,97 (3,22)	
<i>D(lsk</i> [-1])	-4,38 (-3,06)	
<i>D(lsk</i> [-2])	1,59 (1,99)	
<i>D(ldx)</i>	0,04 (0,53)	

D(ldx[-1])	0,22 (1,93)	
D(ldx[-2])	0,10 (1,05)	
D(IOUV)	-0,09 (-2,10)	
D(IOUV[-1])	-0,07 (-1,49)	
ECT	-2,12 (-10,17)	-1,22 (-7,92)

Student's statistics are in parentheses

These estimates highlight two results in which external debt has a different impact on economic growth. In the short term, external debt has a negative and largely significant effect on economic growth.

The variable approaching trade openness has a negative and significant impact on economic growth in Morocco in the short term, which shows that the Moroccan economy is very vulnerable to external shocks, especially with a structurally deficit trade balance. This result corroborates most studies that stipulate that external indebtedness and openness have a negative impact on economic growth, and thus seeking to maintain a growth rate at an acceptable level, the country will go further into debt. This idea is, however, rejected by Yapó (2002) and Cashin and Potillo (2000) who show that the deterioration of the terms of trade does not necessarily explain debt.

With regard to the stock of physical capital and human capital, a number of conclusions are highlighted.

First, a one percentage point increase in physical capital stock is associated with a short and long-term increase of 0.23 and 0.11 percentage points, respectively, in the rate of economic growth. This result corroborates theoretical arguments and international empirical studies.

Second, the effect of human capital, measured by educational level, is positively and statistically significant. One percentage point increase in the human capital stock results in a short and long-term increase of 0.19 and 0.09 percentage points, respectively, in the rate of economic growth. This result is consistent with a number of theoretical points of view and empirical results. It also depends on the argument that the quality of human capital generates positive externalities and then puts the country on a higher growth path.

Table 4: Results of long-term estimates

	<i>Specification I</i> <i>ARDL(2, 3, 3, 3, 2)</i>	<i>Specification II</i> <i>ARDL(1, 3, 0, 0, 0)</i>
Lsk	0,11*** (5,90)	0,02 (0,76)
Lsh	0,09** (3,46)	-
Ldx	-0,12*** (-4,42)	-0,03 (-0,92)
IOUV	-0,02 (-0,51)	-
IINF	-	-0,04** (-2,008)
Lcorrup	-	-0,17** (-2,30)
Constant	-0,02*** (-4,13)	0,33** (2,28)
$R^2$	0,95	0,78
$\bar{R}^2$	0,85	0,68
Prob F-statistic	0,001	0,00018
DW	3,26	2,03
Hannan-Quinn criter	-5,27	-4,61

(\*\*\*): Significance at 1% level

(\*\*): Significance at 5% level

(\*): Significance at 10% level

Student's statistics are in parentheses

In the long term, the effect of the external debt appears negative in the two estimated specifications but not significant in the second specification after the introduction of corruption and inflation in the model.

According to estimates, Corruption<sup>5</sup> is estimated to have a negative and significant effect on short- and long-term economic growth, with elasticities of -0.22 and -0.17, respectively. This result confirms the idea that corruption has perverse effects on economic growth in Morocco. Mauro (2004) and Mo (2001) arrive at the same results in their studies.

Despite the efforts made by Morocco during the last two decades, in terms of investment in many infrastructure projects and equipment, financed mainly by external debt, these efforts seem to have not contributed to the improvement of long-term economic growth in Morocco.

What characterizes the accumulation of capital in Morocco, which could explain its low profitability, is that the investment effort was mainly made by the public sector. However, and despite the economic results qualified as significant, Morocco records results in terms of inclusive social and human development that are still below the expectations of the population. Morocco's Gini coefficient reflects high levels of income inequality (Chauffour, 2018).

We also tend to believe that the negative impact of external public debt can also be explained by the combined effect of a series of factors, namely a shortage of competent executives, persistent administrative dysfunctions, and a lack of horizontal and vertical coordination.

## VI. CONCLUSION

The main objective of this study is to examine the impact of Morocco's external indebtedness on its economic growth. This issue is important considering that the country's external debt stood at 312 billion dirhams in 2016, which represents about 30.8 percent of GDP.

The results of this study showed a negative effect of external debt on economic growth in the short term, which was slightly larger, as well as in the long term. Indeed, during the analysis period, the growth rate of the Moroccan economy and that of the public external debt evolved in the opposite direction and with different amplitudes.

The related signs of other coefficients, such as physical capital stock, human capital, openness, and

corruption allow us to conclude that these variables influence economic growth differently.

Although it is difficult to determine a critical threshold of public debt, several indicators suggest that the current level of Moroccan public debt is a constraint to long-term growth driven by public demand (Chauffour, 2018).

Indeed, an excessive debt, which leaves the whole problem of the optimal allocation, is translated in the long term by an exit of currencies, in the service of the external public debt towards the World Bank, superior to the drawings on the loans granted by this international financial institution in Morocco. This institution gives undue emphasis to financing activities that "self-amortize"<sup>6</sup> compared to those that "do not self-amortize" (Berrada, 2017).

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<sup>5</sup> This variable is approximated in the model by the perception index of corruption (ipc) which varies between 1 and 10. Closer it is to 10, the more the country shows a high probity and closer this index is to 1, higher is the corruption. This indicator has been re-parameterized so that a high score indicates a strong perception of corruption thus facilitating interpretation. Thus, we define the variable  $corrup = 10 - ipc$ . the IPC is now used in almost all scientific studies that places corruption at the heart of their analysis (Swaleheen, 2009 and 2007).

<sup>6</sup> That means those yielding an income, which makes it possible to cope, without great difficulty, with the service of the external debt.



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## Les Pre-Requis A La Mise En Place D'une Politique De Ciblage D'inflation Au Maroc

By Younes El Khattab & Chourouk Moudine

**Abstract-** Faced with the failure of monetary policies inspired by Keynesian and monetarist thinking, a new pragmatic regime emerged in 1989, called inflation targeting. The new regime was able to bypass inflationary slippages in a short time, while promoting growth and employment, prompting central banks in some developed and emerging countries to adopt it and abandon previous monetary regimes. The adoption of inflation targeting requires, however, the verification of a set of pre-requisites.

Morocco, like other countries, has failed in its monetary policy, since price stability has been ensured by the support of the State Budget, to certain products for consumption (Compensation Fund). With the increased partial decompensation, and in the event of a possible rise in commodity prices, inflation could reach very high levels. Therefore, Bank Al-Maghrib will be forced to revise its monetary policy to adopt the inflation targeting, as recommended by the IMF, but the verification of its prerequisites is necessary.

**Keywords:** *monetary policy, inflation targeting, central bank, transparency, independence, credibility, flexible exchange rate regime.*

**GJMBR-B Classification:** *JEL Code: G00*



LES PREREQUIS A LA MISE EN PLACE D'UNE POLITIQUE DE CIBLAGE D'INFLATION AU MAROC

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# Les Pre-Requis A La Mise En Place D'une Politique De Ciblage D'inflation Au Maroc

Younes El Khattab <sup>α</sup> & Chourouk Moudine <sup>σ</sup>

**Resume-** Face à l'échec des politiques monétaires d'inspiration keynésienne et monétariste, un nouveau régime pragmatique a émergé à partir de 1989, appelé le ciblage d'inflation. Ce nouveau régime a réussi en peu de temps à contourner les dérapages inflationnistes, tout en favorisant la croissance et l'emploi, ce qui a incité les Banques centrales de certains pays développés et émergents à l'adopter et à abandonner les régimes monétaires antérieurs. L'adoption du ciblage d'inflation requiert, toutefois, la vérification d'un ensemble de pré-requis.

Le Maroc, à l'instar des autres pays, a échoué dans sa politique monétaire, vu que la stabilité des prix a été assurée par l'appui du Budget de l'Etat, à certains produits à la consommation (Caisse de compensation). Avec la décompensation partielle accrue, et en cas d'une éventuelle hausse des prix des matières premières, l'inflation pourrait atteindre des niveaux très élevés. Dès lors, Bank Al-Maghrib sera obligée de revoir sa politique monétaire pour adopter le ciblage d'inflation, comme préconisé par le FMI, mais la vérification de ses pré-requis s'impose.

**Mots-clés:** politique monétaire, ciblage d'inflation, banque centrale, transparence, indépendance, crédibilité, flexibilité du taux de change.

**Abstract-** Faced with the failure of monetary policies inspired by Keynesian and monetarist thinking, a new pragmatic regime emerged in 1989, called inflation targeting. The new regime was able to bypass inflationary slippages in a short time, while promoting growth and employment, prompting central banks in some developed and emerging countries to adopt it and abandon previous monetary regimes. The adoption of inflation targeting requires, however, the verification of a set of pre-requisites.

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## I. INTRODUCTION

**D**urant les années 1970, l'économie mondiale a connu des niveaux d'inflation sans précédents, en lien avec le renchérissement des prix pétroliers. Le keynésianisme comme le monétarisme étaient en crise et ont échoué à faire face à cette augmentation des prix. Ainsi, un nouvel ancrage monétaire a été urgemment requis.

L'inflation qui dépassait les 15% à la fin des années 1980, a incité certains pays à adopter une nouvelle approche en matière de conduite de la politique monétaire (PM). C'est ainsi que le régime de ciblage d'inflation (CI) a émergé dans un contexte de quasi absence de fondements théoriques. Le CI a été ainsi le résultat des travaux des praticiens et non pas de ceux de la recherche académique. Toutefois, plusieurs approches théoriques pourraient être considérées comme des précurseurs de ce nouveau régime monétaire, à l'instar des courants keynésien, monétariste, néo-classique et nouveau-keynésien.

Les pays ayant adopté le ciblage d'inflation sans avoir développé des fondamentaux solides ont fini par renoncer au CI, tel était le cas de la Turquie, parce qu'il contraignait les autorités monétaires de faire la planche à billets. Le Maroc, en tant qu'une petite économie ouverte, est soumis à plusieurs obstacles qui le contraignent à adopter actuellement le régime de ciblage d'inflation. Le pays souffre de la fragilité de ses fondamentaux macroéconomiques et d'une imparfaite circulation des capitaux.

Le rétablissement des équilibres macroéconomiques constitue une priorité majeure que le Maroc doit s'assigner afin de favoriser, d'une part, un environnement sain et soutenable pour la croissance et le développement du pays et, d'autre part, l'adoption du ciblage d'inflation. En outre, l'efficacité de la politique monétaire reste tributaire de l'indépendance totale de Bank Al-Maghrib (BKAM). Par ailleurs, et conformément au triangle de MUNDALL, la Banque centrale (BC) ne peut pas mener une politique monétaire autonome, dans un cadre de libre circulation de capitaux et de régime de change fixe. Ainsi, pour éviter une dualité conflictuelle d'objectifs, la flexibilisation du taux de change s'impose. Enfin, le développement du marché financier conditionne la bonne transmission des effets de la politique monétaire, en minimisant le risque de dérapage par rapport aux objectifs fixés.

## Chapitre I: Les Prerequis Theoriques A L'adoption Du Ciblage D'inflation

La mise en œuvre de la politique de CI nécessite que certaines préconditions préalables soient réunies, dont le rôle est fondamental. Ces pré-requis sont d'ordre institutionnel et structurel.

En effet, la conduite d'une politique de ciblage d'inflation optimale est tributaire d'un ensemble de conditions institutionnelles. Les principales contributions traitant la question des pré-requis institutionnels de ciblage d'inflation sont celles de MISHKIN (2000) et BATINI et LAXTON (2005). Sur la base de ces travaux, quatre conditions peuvent être dégagées, soit la transparence, l'indépendance et la crédibilité des Banques centrales, ainsi que la flexibilité du taux de change.

Ces pré-requis institutionnels sont indispensables à l'adoption d'une politique de CI. Néanmoins, ils demeurent inefficaces sans une base structurelle développée pouvant soutenir la transparence et la crédibilité de la Banque centrale. Il s'agit, notamment, de la mise en place d'infrastructures techniques avancées, d'une structure économique et d'un système financier solide.

### Section 1: Les pré-requis institutionnels

Les BCs qui adopteraient le CI sans remplir les conditions préalables d'indépendance, de transparence, de crédibilité, ainsi que de flexibilité du taux de change seront condamnées à échouer dans la conduite de leur politique monétaire, et par conséquent à atteindre leurs cibles d'inflation.

#### 1. L'indépendance de la Banque centrale

Le principal engagement de la BC devrait être l'atteinte de la stabilité des prix à long terme. Cet engagement peut être formalisé sous forme de texte de loi inscrit dans le statut de la Banque centrale, tel est le cas de plusieurs pays. La Banque centrale, par ailleurs, doit bénéficier de toute la latitude d'actions pour atteindre cet objectif ultime, d'où la nécessité de renforcer son indépendance.

Accorder l'autonomie aux BCs signifie qu'elles détiennent le pouvoir d'interférer dans les décisions prises dans le cadre de l'exercice de leurs mandats. En d'autres termes, nul corps constitué du gouvernement, Parlement ou l'un de leurs membres respectifs, ne détient le pouvoir d'interférer dans les décisions prises par la BC dans l'exercice de sa mission statutaire et encore moins de renverser le cours des décisions prises.

Sur le plan théorique, ROGER (2009) a montré que cette indépendance est contrainte par l'intervention de l'État dans la prise de décision des autorités monétaires, à travers l'obligation de financement du déficit public. Toutefois, sur le plan pratique, l'indépendance est liée uniquement au degré

d'engagement de la Banque centrale à atteindre son objectif de politique monétaire.

Cette indépendance peut être exercée par la Banque centrale sur deux plans:

- *l'indépendance organisationnelle* qui concerne l'ensemble des dispositions régissant la formulation de la politique monétaire et l'organisation institutionnelle de la Banque centrale. Cette dernière concerne la composition des instances de décision, le mode de recrutement et de révocation des dirigeants, la durée du mandat, ainsi que la responsabilité des instances ;
- *l'indépendance économique* qui se décline en indépendance d'objectifs et en indépendance d'instruments. La dépendance d'objectifs désigne que la BC est libre de définir ses objectifs. L'indépendance d'instrument est la liberté conférée à la BC à fixer ses instruments sans aucune interférence politique. Elle confère à la BC une flexibilité pour mener sa politique monétaire et faire face aux chocs exogènes, quoique cette flexibilité ait été jugée par certains économistes, notamment CALVO (1999), comme un inconvénient à la bonne conduite de PM.

La littérature s'est longtemps intéressée à l'indépendance de la BC et à ses effets macroéconomiques. Plusieurs études empiriques se sont arrêtées sur les liens entre l'indépendance de la BC et l'inflation d'un côté et la performance économique d'un autre côté.

Selon certaines études, il a été avancé qu'un degré d'indépendance élevé est associé à une faible inflation. En effet, une plus grande indépendance aiderait la BC à s'engager efficacement en faveur de son objectif de stabilité des prix. ALESINA et SUMMERS (1993) ont validé cette relation négative entre indépendance et inflation pour 16 pays développés, entre 1955 et 1988. Selon ces auteurs, l'indépendance de la BC offre un pouvoir explicatif important de l'inflation.

D'autres études ont démontré qu'il existe une relation notable entre l'indépendance de la BC et l'amélioration de la performance économique. En effet, le renforcement de l'autonomie de la BC et son engagement à atteindre la stabilité des prix lui permettra de gagner en termes de crédibilité auprès des agents économiques. Cet environnement économique favorise l'investissement, la consommation et ainsi la croissance.

La quantification du degré d'indépendance de la BC a fait également l'objet de plusieurs études, on citera à cet effet les études de:

- CUKIERMAN et al. (1992) qui ont proposé une mesure globale d'indépendance en développant quatre indicateurs de base: i) l'indépendance légale à travers le statut du Gouverneur de la BC (durée du mandat et procédures de nomination et



de démission), ii) la formulation de la politique monétaire, iii) la définition des objectifs de la BC, iv) l'indépendance de la BC en se basant sur sa capacité à s'abstenir au financement du déficit budgétaire. L'indice global de CUKIERMAN et al. (1992) varie entre 0 et 1. La valeur 0 fait référence à une faible indépendance et la valeur 1 à une forte indépendance ;

- BATINI et LAXTON (2007) qui ont proposé un autre indice d'indépendance institutionnelle. Cet indice permet de tester la capacité de la BC à atteindre ses objectifs de politique monétaire, sans contrecarrer les autres objectifs budgétaires. Pour ce faire, ils regroupent 6 mesures pour en former un indice. Il s'agit de l'absence d'obligation fiscale<sup>1</sup>, l'indépendance opérationnelle, l'objectif de la Banque centrale<sup>2</sup>, la balance fiscale<sup>3</sup>, la dette publique<sup>4</sup> et l'indépendance globale de la Banque centrale tant au niveau économique que politique.

## 2. La transparence de la Banque centrale

La transparence de la BC, selon la BCE, implique qu'elle fournit au grand public, ouvertement, clairement et en temps voulu, toutes les informations utiles concernant sa stratégie, ses analyses et ses décisions de politique monétaire, ainsi que ses procédures. Elle est indispensable à la mise en œuvre de la politique de CI dans la mesure où elle aide le public à mieux comprendre les objectifs et les actions de la BC, ce qui rend la politique monétaire adoptée plus crédible et donc plus efficace.

Dans le même ordre d'idée, SVENSSON (1999) soutient que le CI, conjugué à un niveau élevé de transparence de la Banque centrale, est capable d'éliminer le biais inflationniste des politiques monétaires, car il incorpore un fort engagement de la Banque centrale à atteindre la cible d'inflation.

L'engagement de la BC est synonyme de responsabilité. Il devrait s'accompagner donc de toute la transparence nécessaire pour motiver ses actions entreprises et les risques encourus, dans le cadre de ses différentes communications diffusées auprès du public. Cette transparence permettrait à la BC d'ancrer les anticipations des agents économiques et de gagner en termes de crédibilité.

Certaines études se sont attachées à étudier le degré d'indépendance de la BC. Dans ce sens, EIJFFINGER et GERAATS (2005) ont proposé des mesures sophistiquées pour mesurer le degré de

transparence des Banques centrales, en affectant des scores à un certain nombre de dimensions :

- *la transparence économique*: l'ouverture sur les données et les modèles utilisés par la Banque centrale, y compris les prévisions conditionnelles;
- *la transparence de la procédure*: l'ouverture de la règle ou de la stratégie attachée à la politique monétaire. Les procès-verbaux des réunions du Comité de politique monétaire apportent une plus grande ouverture, de même que la publication des résultats de vote;
- *la transparence de la politique*: la diffusion rapide des informations, y compris l'ouverture sur les changements futurs de l'instrument de la politique monétaire;
- *la transparence opérationnelle*: l'ouverture sur la mise en œuvre des décisions de politique monétaire et l'ouverture sur les perturbations qui pourraient affecter le fonctionnement normal du mécanisme de transmission.

L'indépendance et la transparence de la Banque centrale sont indispensables à l'adoption d'une politique de ciblage de l'inflation. Cependant, ils restent non-pertinents sans une base structurelle développée pouvant les soutenir. D'où la nécessité de renforcer la crédibilité de la Banque centrale.

## 3. La crédibilité de la Banque centrale

La crédibilité est définie comme le degré de confiance que manifeste le public envers la détermination et la capacité de la Banque centrale d'atteindre ses objectifs d'inflation. Elle dépend de l'importance et de la constance de la conformité de la Banque centrale à sa politique annoncée.

Une politique monétaire hautement crédible réduit, selon la théorie économique, les incertitudes entourant les objectifs de la politique monétaire. Ainsi, quand la politique monétaire jouit d'une grande crédibilité, les fluctuations d'inflation, de taux d'intérêt, de production et d'emploi devraient être moins prononcées qu'en cas de chocs que dans le cas inverse. Une crédibilité élevée permettrait ainsi de maintenir l'inflation près du taux visé, lorsque des imprévus viennent perturber l'évolution des prix.

En outre, et compte tenu du degré élevé d'incertitude qui entoure les estimations de production potentielle et d'écart de production, une crédibilité élevée permettrait aux autorités monétaires de mieux jauger la capacité de production de l'économie et de création d'emplois, sans amplifier les craintes d'inflation.

L'hégémonie des BC ont pour principal mandat la préservation du pouvoir d'achat de la monnaie et la promotion de l'activité économique. Même si ces objectifs sont compatibles à long terme, ce n'est pas le cas à court terme en lien avec la relation entre l'intensité de la demande globale, l'inflation et les attentes d'inflation. La Banque centrale agit d'une manière à faire

<sup>1</sup> L'institution monétaire doit être libérée de tout engagement, explicite ou implicite, pour financer le déficit public du gouvernement.

<sup>2</sup> C'est un objectif unique centré sur l'inflation ou une multitude d'objectifs.

<sup>3</sup> Une balance fiscale équilibrée qui montre qu'il n'existe aucune pression sur la banque centrale pour financer le déficit fiscal.

<sup>4</sup> Une faible dette publique est également un indicateur de l'indépendance de la Banque centrale.



converger les anticipations d'inflation à l'objectif fixé. Elle pourrait être tentée, toutefois, de donner un élan plus fort à l'économie que celui anticipé par le public quand elle estime que les attentes d'inflation seront arrimées au taux ciblé. Conscients de cette incitation, et pour se protéger contre une érosion possible de leurs revenus, les agents économiques prendraient leurs décisions économiques et financières en fonction d'un taux d'inflation anticipé plus élevé que le taux visé. Le coût de la non-réalisation de cet objectif serait très élevé pour les autorités monétaires, en lien avec la perte de leur crédibilité.

Afin d'accroître leur crédibilité, les autorités monétaires devraient convaincre le public de la compatibilité de leurs objectifs. Les études qui se sont consacrées à étudier la crédibilité de la politique monétaire, ont proposé plusieurs mesures pour la renforcer.

La nomination d'un Gouverneur reconnu pour avoir un seuil de tolérance moins élevé que le public en matière d'inflation peut contribuer à promouvoir la crédibilité de la politique monétaire. Ainsi, une hausse de la demande n'exercera pas de pressions sur les anticipations, puisque les agents économiques s'attendraient à ce que la Banque centrale réagisse pour contrecarrer ces pressions.

En outre, la conclusion d'une entente officielle et publique entre le gouvernement et la BC au sujet d'un objectif exprimé en termes de taux d'inflation pourrait résoudre le problème d'incohérence temporelle. Quand le gouvernement et la Banque centrale se déclarent solidairement responsables de l'objectif de la politique monétaire, en laissant à l'institut d'émission toute la latitude pour agir en matière monétaire, ils gagneraient une plus grande confiance du public et ainsi en crédibilité.

#### 4. *La flexibilité du taux de change*

La littérature a mis en avant l'importance de la flexibilisation des taux de change, dans un cadre de CI. Elle est qualifiée par certains économistes comme un pré-requis fondamental à l'adoption du CI, tels que MASSON et al. (1997). Selon le principe de triangle des incompatibilités développé par MUNDELL (1960), il est impossible pour une économie d'atteindre une autonomie de la politique monétaire avec une libre circulation des capitaux, simultanément avec un régime de change fixe.

L'engagement de la BC à maintenir fixe le taux de change, rend inefficace la politique monétaire en lien avec la perte de son contrôle sur l'offre monétaire. En sus, la BC ne dispose plus du degré d'indépendance nécessaire pour cibler d'autres objectifs, notamment la stabilité des prix. Pour renforcer la croissance et apprécier le taux de change, l'Etat doit agir à travers la politique budgétaire.

Dans un régime de change flexible, la politique monétaire gagne en termes d'efficacité. En effet, en décidant de laisser le taux de change flotter librement, la Banque centrale peut cibler d'autres objectifs tels que la stabilité des prix. En outre, il n'y aura plus de variation de réserves de change, attribuant ainsi à la Banque centrale un contrôle complet sur le stock de la monnaie.

L'importance que revêt la flexibilisation du taux de change s'explique par le fait que la BC pourrait être confrontée à un conflit d'objectifs, en ciblant simultanément l'inflation et le change à l'aide d'un même instrument, qui est le taux d'intérêt. Ce qui risque de nuire à la crédibilité de la politique monétaire et à sa capacité d'ancrage des anticipations.

Les économistes AMATO et GERLACH (2002) ont démontré, pour le cas des pays émergents, que la réussite d'une politique de CI est affectée indirectement si la BC poursuit un ciblage de taux de change simultanément avec un CI. En effet, la dépréciation du taux de change de la monnaie domestique conduirait la Banque centrale à augmenter brutalement le taux d'intérêt à court terme. Ce qui impacterait négativement les résultats des banques commerciales. La fragilité du secteur bancaire qui s'ensuivrait pourrait alors devenir un obstacle majeur à l'atteinte de la cible d'inflation.

Il est à noter, par ailleurs, que l'adoption d'une politique de CI dans un cadre de flexibilité de taux de change et d'ouverture commerciale conduirait à minimiser le degré de transmission du pass-through après une dépréciation du taux de change. Ce dernier est défini comme l'élasticité qui mesure l'effet de la variation du taux de change sur le prix des biens échangés. Si la dépréciation d'une monnaie s'est répercutée entièrement sur les prix des importations, le pass-through est dit complet et si ce n'est qu'une partie de cette dépréciation qui est transmise, le pass-through est dit incomplet ou partiel.

Selon CAMPA et GOLDBERG (2006), le pass-through est toujours incomplet à court terme et complet à long terme. Son suivi est essentiel à la conduite de la politique monétaire, dans la mesure où les fluctuations du taux de change ont un impact important sur l'inflation.

Plusieurs études économiques ont conclu que plus une économie est ouverte au commerce extérieur, plus la variation des prix des biens importés est importante, ce qui impactera le niveau d'inflation. Néanmoins, l'adoption d'un régime de CI crédible qui s'engage à atteindre la stabilité des prix tend à faire diminuer le pass-through et l'inflation, voire avec un degré d'ouverture commerciale élevé. MISHKIN et SAVASTANO (2001), EICHENGREEN (2002), ainsi que SCHMIDT-HEBBEL et WERNER (2002) ont expliqué cette baisse du pass-through, par un meilleur ancrage des anticipations d'inflation.

TAYLOR (2000) a été le premier à avoir démontré que l'existence de rigidités nominales dans un

environnement de faible inflation, entraîne un faible degré de pass-through. Ce résultat a été également affirmé par les travaux de CAMPA et GOLDBERG (2006), ainsi que GAGNON et IHRIG (2004) portant sur les économies avancées et par CHOUDHRI et HAKURA (2006) et CA'ZORZI et al. (2007) sur les économies émergentes. GAGNON et IHRIG (2004) ont aussi montré que les actions qui limitent l'inflation et renforcent la crédibilité de la Banque centrale sont des facteurs clés pour réduire le degré de transmission des variations du taux de change vers l'inflation.

Par ailleurs, HO et Mc CAULEY (2003) estiment qu'un pass-through élevé complique le régime de CI. En effet, lorsque les effets du taux de change sont fortement répercutés sur l'inflation, la Banque centrale est obligée d'agir pour ajuster le taux de change en fonction de son niveau d'inflation cible. L'engagement des autorités monétaires envers la cible d'inflation implique son engagement envers le taux de change. Ce qui expose la cible d'inflation au risque d'attaques spéculatives, mais ça ne remet pas en cause l'engagement de la Banque centrale envers un objectif d'inflation.

Pour EINCHENGREEN (2002), un pass-through élevé permettrait d'atteindre rapidement l'objectif d'inflation, dans la mesure où la BC agit sur les mouvements du taux de change à travers la loi de la parité de taux d'intérêt non couverte<sup>5</sup>. Plus le degré du pass-through est élevé, plus ces mouvements sont importants. Les effets des variations du taux de change seraient limités par les effets de renforcement de compétitivité des produits domestiques par rapport à ceux étrangers. Ils devraient être plus faibles que la dépréciation du taux de change est fortement répercutée dans les prix domestiques. Ainsi, plus le pass-through est élevé, plus la Banque centrale doit recourir au canal du taux de change pour atteindre sa cible d'inflation.

La mise en place de l'ensemble de ces pré-requis institutionnels est indispensable à l'adoption d'un régime de ciblage d'inflation. Par ailleurs, d'autres pré-requis à caractère structurel doivent être vérifiés pour une meilleure efficacité de ce régime.

### Section 2: Les pré-requis structurels

La mise en œuvre du CI est corollaire à la mise en place de certaines conditions structurelles. Il s'agit de l'acquisition d'outils techniques avancés, la stabilité de la structure économique, la solidité du système financier, le renforcement du système fiscal et de la supervision bancaire.

Les pays qui ont adopté le ciblage d'inflation sans remplir ces conditions structurelles ont fini par abandonner ce régime, en lien avec leur incapacité

d'atteindre les objectifs fixés, tel est le cas de la Turquie. L'objet de cette section serait de présenter ces pré-requis structurels.

#### 1. *L'acquisition d'outils techniques avancés*

La BC doit être en mesure d'établir des prévisions fiables. Elle doit également avoir les moyens nécessaires pour implémenter les décisions prises. Pour ce faire, les outils techniques ont besoin d'être particulièrement développés. Pour mesurer cette dimension, BATINI et LAXTON (2007) se sont basés sur trois aspects:

- la disposition de technologies capables de collecter et d'utiliser un grand nombre de données, pour la préparation des rapports et l'optimisation des recherches;
- la mise en place d'un processus systématique de prévisions, afin d'étudier l'évolution de l'inflation future et ajuster la cible selon l'évolution des informations économiques;
- la disposition de qualifications avancées permettant de développer des modèles capables de prévisions conditionnelles.

#### 2. *La solidité de la structure économique*

Le CI limite généralement le pouvoir des autorités monétaires, en publiant des objectifs explicites d'inflation. Pour ne pas être tentée d'agir par une création monétaire face à des contraintes budgétaires ou à des engagements financiers (service de la dette), la structure économique devrait être solide, surtout pour les pays émergents et en développement. Il s'avère donc nécessaire de disposer de fondamentaux macro-économiques solides, préalablement à l'adoption d'un régime de CI.

BLANCHARD (2004) a insisté sur l'importance d'une discipline financière et d'une politique saine d'endettement, dans le cas de l'adoption du CI. En effet, un niveau de dette élevé accompagné d'un taux d'intérêt élevé augmente le risque souverain. Ainsi, la monnaie domestique va se déprécier entraînant un déséquilibre du bilan des banques et de l'inflation. Cette situation risque de s'aggraver lorsque le ratio de la dette libellée en monnaie étrangère, par rapport à la dette totale, est important.

#### 3. *La solidité du système financier*

La solidité du système financier est nécessaire à l'adoption du ciblage d'inflation, parce qu'elle permet de minimiser les interférences qui existent entre les actions des autorités monétaires et l'évolution du marché financier. Pour évaluer le système financier, BATINI et LAXTON (2007) se sont référés à six critères, dont notamment la proportion des capitaux par rapportaux avoirs risqués<sup>6</sup>, le déséquilibre de la

<sup>5</sup> Cette parité établit que la différence entre l'anticipation du taux de change et le taux de change au comptant est reliée à la différence entre le taux d'intérêt domestique et le taux d'intérêt étranger.

<sup>6</sup> Le système bancaire est stable si la valeur des capitaux dépasse de 10% de la valeur des avoirs risqués.

structure du bilan<sup>7</sup>, ainsi que la maturité des titres financiers<sup>8</sup>.

L'efficacité de la politique monétaire dépend également du niveau de développement système financier, notamment bancaire, qui doit être suffisamment développé pour permettre une transmission optimale des actions de la Banque centrale. En effet, dans le cas d'un système financier peu développé, les marchés financiers réagissent lentement aux actions de la politique monétaire, ce qui entraîne une déviation de l'inflation par rapport à sa cible. Ainsi, plus l'intermédiation financière est développée, plus l'efficacité des actions de la Banque centrale augmente.

#### 4. Le renforcement du système fiscal

Plusieurs pays rencontrent un problème de pressions fiscales, en lien avec leurs incapacités à financer leurs dépenses publiques et leurs recours à l'endettement sur les marchés financiers, par endettement auprès de la Banque centrale ou par émission de bons de trésor, pour faire face à leurs engagements. Ce qui exerce des pressions sur les autorités monétaires et engendre, par conséquent, un problème d'incohérence temporelle. Celui-ci entraînera ainsi une perte de crédibilité de la Banque centrale, ainsi qu'une désorientation des anticipations inflationnistes des agents privés.

SARGENT et WALLACE (1981) ont souligné qu'une politique fiscale inadéquate engendre des pressions sur les autorités monétaires pour monétiser la dette, ce qui va augmenter le niveau d'inflation. Ainsi, la BC, qui serait incapable de faire face à la persistance des déséquilibres fiscaux, devrait réviser sa cible d'inflation, voire abandonner définitivement la politique de CI à long terme.

Il s'avère donc nécessaire de mettre en place des réformes fiscales qui permettraient de prévenir les déficits budgétaires, afin de limiter les déséquilibres fiscaux qui contraignent l'adoption du CI.

#### 5. Le renforcement de la supervision bancaire

Les déséquilibres fiscaux peuvent engendrer des crises bancaires et financières, comme démontré par MISHKIN et SAVASTANO (2001), qui ont souligné qu'un large déficit budgétaire peut contraindre l'État à saisir sans contrepartie certains fonds déposés dans les banques. Le retrait massif de ces fonds accentue le risque d'une crise bancaire, tel était le cas de l'Argentine en 2001.

Dans ce sens, MISHKIN (2004) a proposé certaines réformes, à savoir :

- le renforcement de la régulation prudentielle du système bancaire et financier pour prévenir les différentes crises financières;
- la limitation des garanties de sécurité auprès des institutions financières internationales afin de minimiser l'incitation des banques à prendre des risques importants;
- la limitation du déséquilibre de devise pour qu'une éventuelle dévaluation ne puisse pas engendrer d'effet de bilan.
- la mise en place des politiques encourageant l'ouverture commerciale pour réduire l'ampleur des crises financières.

La mise en œuvre de la politique de ciblage d'inflation reste donc conditionnée par la vérification d'un ensemble de pré-requis à caractères institutionnel et structurel.

### Chapitre II: Prerequis A L'adoption D'une Politique De Ci Au Maroc

Les pays ayant adopté le ciblage d'inflation sans avoir développé des fondamentaux solides ont fini par renoncer au ciblage d'inflation, tel était le cas de la Turquie, parce qu'il contraint les autorités monétaires de faire la planche à billets.

Le Maroc, en tant qu'une petite économie ouverte, est soumis à plusieurs obstacles qui le contraignent à adopter actuellement le régime de ciblage d'inflation. Le pays souffre de la fragilité de ses fondamentaux macroéconomiques, dans un cadre de régime de change flexible administré et d'une imparfaite circulation des capitaux. L'éventuelle adoption d'un régime de ciblage d'inflation au Maroc reste tributaire de la vérification de ses prérequis (voir Chap. I).

#### Section 1: Le renforcement des fondamentaux macroéconomiques

Une situation budgétaire équilibrée dans laquelle le déficit budgétaire se situe à des niveaux tolérables, et une maîtrise de l'évolution de la dette sont fondamentales à la mise en place du CI. En effet, avec des fondamentaux économiques soutenables, la BC ne sera plus contrainte de financer la dette publique par la création monétaire, ou comme il est plus souvent nommé l'impôt d'inflation<sup>9</sup>.

A noter que pour que la politique monétaire puisse garantir son indépendance vis-à-vis de la politique budgétaire, il faudrait que trois conditions soient vérifiées simultanément, à savoir i) la charge de l'emprunt du gouvernement sur le système financier ne doit pas être excessive ; ii) l'interdiction du recours du gouvernement à un emprunt direct de la Banque

<sup>7</sup> Plus le déséquilibre entre la monnaie domestique et la devise est important, plus l'économie est face au risque de change en cas de dévaluation de la monnaie.

<sup>8</sup> Face à l'irrégularité des marchés financiers, la maturité des titres financiers joue un rôle particulièrement important dans la stabilité de la politique du ciblage d'inflation. En effet, un marché financier dont la proportion des titres de long-terme est importante, permet d'éviter l'effet des variations trop aléatoires.

<sup>9</sup> Quand l'Etat augmente la masse monétaire pour financer ses dépenses, il lève un « impôt inflation ». Ce dernier est comme une taxe imposée sur tous ceux qui détiennent des liquidités.

centrale; et iii) le gouvernement ne devrait pas compter sur les revenus de seigneurage<sup>10</sup>.

D'analyse des niveaux du déficit et de la dette au Maroc ressorte leur insoutenabilité. Le déficit budgétaire s'est établi à 4% du PIB en 2016 après avoir enregistré un déficit de 4,2% du PIB en 2015 et de 6,8% en 2012. La dette publique globale a enregistré 81,4%

du PIB en 2016 et 79,9% du PIB en 2015. Le niveau de la dette devrait se creuser davantage en 2017, pour couvrir le déficit de la balance courante. Ces niveaux dépassent les standards internationaux qui préconisent des niveaux des déficits budgétaires et de la dette inférieurs à 3% et 60%, respectivement.

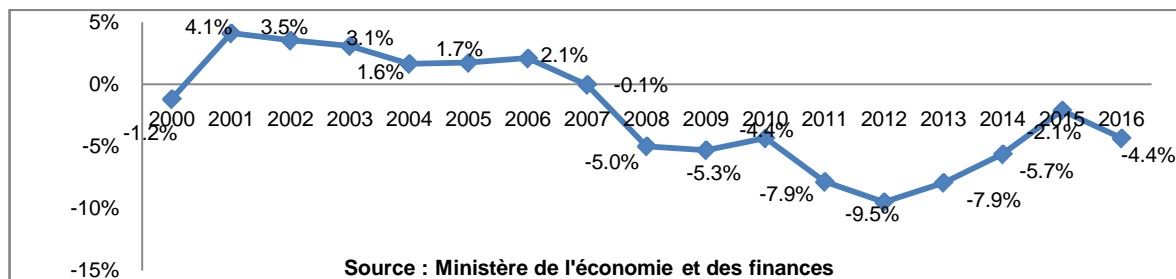


Figure 1: Evolution du solde du compte courant de 2000 à 2016 (en % du PIB)

L'adoption du CI requière donc le rééquilibrage de ces fondamentaux macroéconomiques. D'où la nécessité de ramener le déficit budgétaire à un niveau soutenable et de maîtriser l'évolution de la dette.

1. *Ramener le déficit budgétaire à un niveau soutenable*

La maîtrise du déficit budgétaire à des niveaux soutenables est indispensable à la mise en place du CI

L'analyse de l'évolution du solde budgétaire marocain fait ressortir un déficit structurel. En effet, le déficit budgétaire moyen de la période 2011-2016 est de 5,1% du PIB, soit nettement supérieur au niveau retenu par la communauté mondiale comme niveau soutenable de déficit public, à savoir 3%. Dès lors, un ajustement de la politique budgétaire s'impose, notamment par l'instauration d'une rigueur budgétaire.

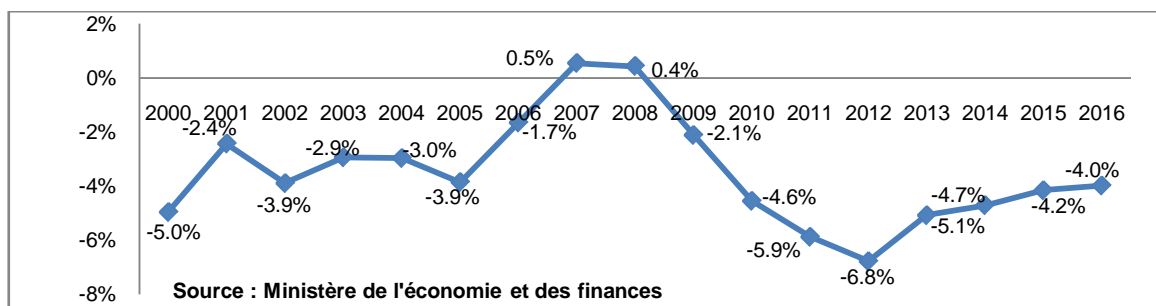


Figure 2: Evolution du solde budgétaire au Maroc entre 2000 et 2016 (en % du PIB)

En outre de la rationalisation des dépenses et de la maîtrise de la masse salariale, le gouvernement est amené, pour freiner la dégradation du déficit budgétaire et garantir la soutenabilité des finances publiques à moyen terme, à mettre en place un ensemble de réformes. Il s'agit notamment de:

- *la réforme fiscale:* Pour apaiser les finances publiques, tout en assurant une certaine équité sociale, le gouvernement devrait revoir le système fiscal pour le rendre plus efficace. L'assiette fiscale devrait être élargie, en touchant tous les opérateurs économiques, mais d'une manière différenciée en fonction de leurs catégories socio-économiques;

- *la réforme de la caisse de compensation:* Dans un contexte d'un accroissement plus soutenu de la demande mondiale par rapport à l'offre et de perturbations géopolitiques au niveau international, les prix des matières premières ont accusé une accentuation à la hausse au cours de 2011-2012. Cette forte hausse s'est répercutée négativement sur les finances publiques. Dès lors, le gouvernement a mis en place en septembre 2013 une réforme, visant la caisse de compensation, qui consiste à une indexation partielle des produits pétroliers liquides. Cette réforme a allégé partiellement les finances publiques mais demeure insuffisante pour assurer sa soutenabilité dans le temps. Ainsi une réforme globale devrait être mise en place, tout en assurant une équité sociale, pour ne pas pénaliser certaines catégories sociales,

<sup>10</sup> Olivier BLANCHARD, « Fiscal dominance and inflation targeting: lessons from Brazil », Bureau national de la recherche économique, Document de travail n° 10389, Cambridge. (2004)



notamment la classe moyenne. Un ciblage direct des populations les plus défavorisées devrait être effectué, pour compenser leur différentiel de pouvoir d'achat<sup>11</sup>;

- *la réforme de la Caisse de retraite*: l'aggravation des déséquilibres financiers des principaux régimes de retraite aurait pour conséquence l'épuisement des réserves accumulées par les régimes de base et l'incapacité d'honorer, dans le futur, les engagements envers les retraités. Dans le cadre de cette dernière hypothèse le Budget de l'Etat ne pourrait pas se substituer aux caisses de retraites pour maintenir les pensions de retraites, vu son effet insoutenable sur les finances publiques. En plus, l'épuisement des réserves aura des répercussions néfastes sur le financement du Trésor public, dont une partie significative de la dette est détenue par les organismes de retraite, et par effet de contagion sur le reste de l'économie nationale. A cet effet, la mise en place de réformes du système de retraite est indispensable.

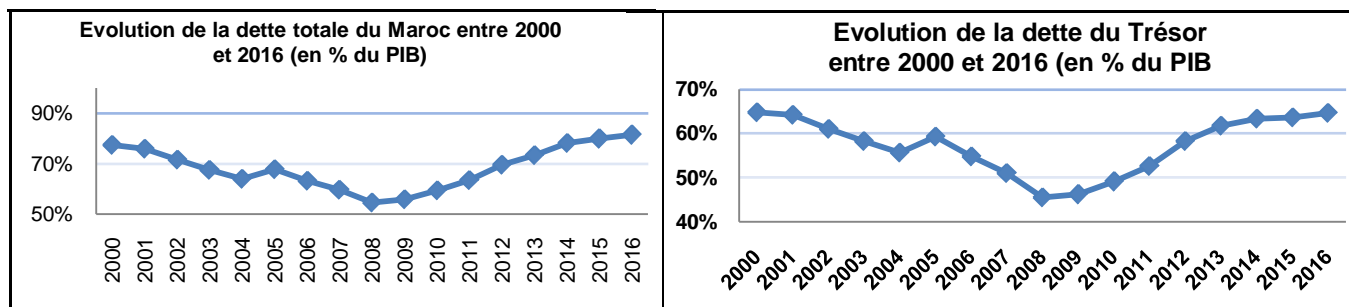
La mise en place de ces réformes est un facteur clé pour une politique budgétaire saine. Cette dernière est indispensable à l'efficacité et à la viabilité du régime de ciblage d'inflation.

## 2. Maîtriser l'évolution de la dette

En plus de la maîtrise du déficit budgétaire, le pays doit surveiller le niveau de la dette globale, pour ne

pas freiner les performances du ciblage d'inflation. Quand la dette publique devient très importante et que la demande de titres publics est insuffisante pour financer le déficit, le gouvernement peut contraindre la BC à conduire une politique monétaire accommodante pour monétiser la dette. Cette monétisation aura pour conséquence d'accélérer les tensions inflationnistes et de dégrader la crédibilité de la BC dans la conduite de sa politique monétaire. Si l'institut d'émission ne cède pas aux pressions du gouvernement, la situation peut conduire à un défaut de l'Etat.

L'analyse de l'évolution de la dette du Trésor, fait ressortir le lien étroit entre cette dernière et le niveau du solde budgétaire. En effet, sur la période 2005-2009, où le pays a réalisé des excédents budgétaires, le niveau de la dette a été ramené à son niveau le plus bas. Néanmoins, les facteurs conjoncturels<sup>12</sup> qui ont marqué la sphère nationale et internationale, durant la période 2010-2011, ont fragilisé la soutenabilité des finances publiques à moyen terme, par la dégradation du solde budgétaire et l'aggravation de l'encours global de la dette du Trésor. Ainsi, le déficit budgétaire a été essentiellement financé par le recours à la dette.



Source: Ministère de l'Economie et des Finances

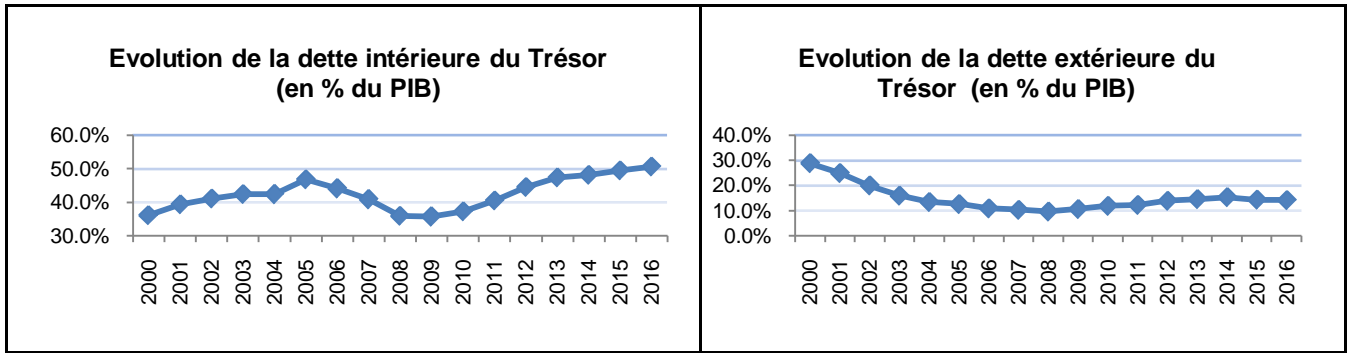
Figure 3: Evolution de la dette totale au Maroc entre 2000 et 2016 (en % du PIB)

L'aggravation de la dette a concerné à la fois la dette intérieure et la dette extérieure. Certes, le Trésor privilégiait durant les dernières années le recours au marché intérieur pour se financer. Toutefois, dans un contexte de crise internationale et de sous-liquidité de marché national, le Trésor a été obligé de s'endetter auprès des créanciers étrangers.

<sup>11</sup> Le Maroc pourrait se référer dans ce sens aux expériences de certains pays d'Amérique latine dans la matière, notamment le Brésil et l'Argentine.

<sup>12</sup> Il s'agit de plusieurs facteurs d'ordre économique et politique, tels que les vagues de sécheresse et les répercussions du printemps arabe.





Source: Ministère de l'Economie et des Finances

Figure 4: Evolution de la dette intérieure et extérieure du Maroc entre 2000 et 2016

La dette du Trésor a enregistré 64,7% du PIB en 2016, contre 63,7% en 2015. 78% du stock de la dette du Trésor sont constitués de la dette intérieure. Toutefois, le risque d'un éventuel dérapage demeure omniprésent, notamment dans un contexte de déficit structurel de la balance des paiements. D'où la nécessité de surveiller de près le niveau de la dette.

Pour remédier à cette aggravation de l'endettement public, il est indispensable de revoir le modèle de croissance national. Ce dernier se base essentiellement sur la demande interne. En effet, grâce à la soutenabilité de la demande interne, la croissance au Maroc a pu faire preuve de résilience malgré la crise qui a touché la sphère internationale, notamment nos principaux partenaires commerciaux, et qui a fait diminuer la demande étrangère.

Toutefois, cette croissance peut être qualifiée de stérile puisqu'elle ne crée ni des devises ni de l'emploi. En effet, malgré une croissance, de l'ordre de 1,6% enregistrée en 2016, les réserves de change dont dispose le Maroc ont été maintenues à 6 mois d'importations et le taux de chômage est quasiment stable, à 9,4%.

Il est alors indispensable de revoir le modèle de croissance marocain pour le rendre plus dépendant de la demande étrangère, à travers notamment le renforcement de la compétitivité des exportations marocaines. Pour soutenir l'offre exportable du Maroc, il faudrait réactiver les politiques sectorielles dans ce sens, qui n'ont toujours pas atteints leurs objectifs recherchés, tels que le Plan émergence et le Plan national pour l'émergence industrielle<sup>13</sup>.

On peut conclure que l'adoption du CI reste tributaire du renforcement des fondamentaux macroéconomiques nationaux, à savoir le solde budgétaire et le niveau d'endettement, afin de garantir

l'indépendance de la politique monétaire qui représente un pilier fondamental de ce régime.

Section 2: Le renforcement du rôle de la Banque centrale

Pour que la BC puisse bien conduire la politique monétaire, il faudrait qu'elle soit dotée de toute l'indépendance nécessaire. Cette indépendance est à la fois d'ordre politique et économique.

Le nouveau statut de Bank Al-Maghrib (2006) lui attribue normalement cette autonomie. Toutefois, la politique monétaire durant les dernières années reste influencée par des considérations budgétaires et la volonté de soutenir la croissance dans un contexte de manque de liquidité. L'appui de la politique monétaire à la croissance devrait revêtir un caractère occasionnel et non pas structurel. Il faudrait donc affermir davantage l'indépendance de la Banque centrale.

La pleine indépendance de Bank Al-Maghrib ne devrait pas la dispenser de l'obligation de rendre compte de ses actions. Conformément aux expériences internationales, la BC est tenue de rendre compte de ces actions menées dans le cadre de la politique monétaire au Parlement. L'évaluation du Parlement permettra de juger la crédibilité de la BC.

Par ailleurs, la Banque centrale devrait s'aligner au mandat dont elle a été mandatée, à savoir la stabilité des prix. Pour atteindre cet objectif, elle devrait se doter d'outils techniques avancés pour bien prévoir l'évolution future de l'inflation et mieux ancrer les anticipations des agents économiques. A défaut, elle risque de perdre sa crédibilité.

L'objet de cette section est de développer les points précités, en consacrant le premier paragraphe à la nécessité de renforcement de l'indépendance de la Banque centrale et de sa mission de stabilité des prix, le deuxième paragraphe à la consolidation de sa transparence et à l'obligation de rendre compte de ses actions de politique monétaire, et le troisième paragraphe au développement de sa capacité de prévision des évolutions de l'inflation.

<sup>13</sup> Dans ce sillage, le Gouvernement marocain a lancé, en 2014, une nouvelle stratégie industrielle visant la création de nouveaux écosystèmes industriels.

## 1. Banque centrale indépendante et principalement chargée de la stabilité des prix

La stabilité des prix constitue l'une des conditions nécessaires à une croissance pérenne et une composante majeure de la stabilité macro-économique. Elle permet d'instaurer un environnement favorable à l'investissement et d'assurer la protection du pouvoir d'achat du citoyen. Dans un contexte de ciblage d'inflation, une Banque centrale devrait avoir pour objectif principal, la stabilité des prix.

Depuis la refonte du statut de BKAM en 2006, la stabilité des prix est devenue l'objectif prioritaire de sa politique monétaire. Ce nouveau statut a également consacré à la BC une indépendance totale, à la fois financière et décisionnelle vis-à-vis du pouvoir exécutif et législatif. Cette indépendance, ainsi que la mission d'assurer la stabilité des prix a permis à BKAM de s'aligner aux pratiques internationales en la matière.

Néanmoins, malgré son mandat, Bank Al-Maghrib n'accorde pas beaucoup d'importance à la stabilité des prix dans le cadre de ses interventions en matière de politique monétaire. Comme on a déjà démontré, l'importance accordée à la stabilité des prix dans la fonction de réaction de la Banque centrale est non-significative comparativement à la stabilité financière. Bank Al-Maghrib devrait ainsi accorder une grande importance à la stabilité des prix dans sa fonction de réaction.

L'indépendance de la Banque centrale, politique et économique, reste à consolider. En effet, conformément au triangle des incompatibilités de MUNDALL, on ne peut pas conférer une indépendance à la Banque centrale dans la conduite de la politique monétaire en cas d'adoption d'un régime de change fixe qu'au détriment de l'intégration financière internationale.

Le Maroc est entrain de lever graduellement les restrictions sur l'intégration financière internationale. En effet, les restrictions sur les opérations financières se lèvent graduellement et celles sur les opérations de commerce extérieur ont connu un repli considérable. Ainsi, dans un cadre de régime de change fixe, l'indépendance de la Banque centrale a été négativement impactée.

En matière d'indépendance politique, la longueur du mandat du gouverneur de la BC ainsi que la nature des responsabilités qui lui sont confiées sont un indice d'indépendance de cette dernière. Le gouverneur de BKAM assure son mandat depuis 15 ans, ce qui se traduit par une indépendance politique de BKAM.

Le choix du gouverneur est stratégique dans le cadre d'un régime de CI, parce que la nomination d'un gouverneur connu par sa parfaite connaissance du fonctionnement de la BC et par sa compréhension des impacts de la politique monétaire sur l'économie fait gagner la BC en termes de crédibilité. En outre, et

conformément aux pratiques internationales, le Gouverneur est choisi par le Président ou le Premier ministre. Le parlement valide par la suite ce choix et peut exercer son droit de veto à la majorité des voix, ce qui garantit au gouverneur une autonomie décisionnelle en matière de politique monétaire.

Au Maroc, c'est le Roi qui nomme le gouverneur de Bank Al-Maghrib, sur proposition du chef du gouvernement et à l'initiative du Ministre de l'Economie et des Finances. Ainsi, c'est le gouvernement qui choisit le gouverneur de la Banque centrale, ce qui risque d'impacter négativement la crédibilité de la Banque centrale, puisque l'autonomie du gouverneur sera remise en doute.

Par ailleurs, et malgré que le Directeur du Trésor ne participe pas au vote dans les décisions du Conseil de BKAM relatives à la politique monétaire, le gouvernement désigne 6 membres pour faire partie du Conseil et prendre part à ses décisions, ce qui remet en cause l'indépendance de la BC.

En termes d'indépendance économique, l'article 27 du nouveau statut de Bank Al-Maghrib lui interdit d'accorder des concours financiers à l'Etat, ou de se porter garante d'engagements contractés par ce dernier, que sous forme de facilités de caisse limitée à 5% des recettes fiscales réalisées au cours de l'année budgétaire écoulée, afin de garantir en quelque sorte l'indépendance de la Banque centrale et éviter le recours abusif à la planche à billet, comme il était le cas lors de la crise de 1976.

Toutefois, lors de la crise de 2008, BKAM a dû intervenir massivement, par l'injection de près de 28 milliards de dirhams par semaine pour soulager l'économie nationale des effets de la crise, suite à la baisse des transferts des MRE, le repli des recettes touristiques et des flux des exportations. L'appui de la politique monétaire à la croissance continue toujours, mais à moindre mesure.

En outre, ces dispositions d'interdiction ne s'appliquent pas aux établissements de crédit publics agréés en qualité de banques, pour leurs opérations de refinancement auprès de la Banque centrale. Ce qui contourne la dite interdiction et confirme la thèse de dépendance de la BC.

Ainsi, pour confirmer l'indépendance de la BC, il est nécessaire que la nomination du gouverneur soit validée par le gouvernement et que le statut de BKAM soit révisé pour lui accorder plus d'indépendance.

## 2. Autorités monétaires menant une politique transparente et tenues de rendre compte

Comme il a été déjà précité, la transparence joue un rôle fondamental dans la politique de CI, via le renforcement de la confiance des agents économiques et de la crédibilité de la Banque centrale. L'analyse de la politique de communication de Bank Al-Maghrib fait ressortir l'effort considérable établi par cette dernière

pour s'aligner aux standards internationaux dans la matière. Dans ce sens, la Banque centrale, dans le cadre de sa mise en œuvre de la politique monétaire, publie plusieurs rapports périodiques tels que le rapport de politique monétaire et le rapport annuel de la Banque.

Le rapport annuel est annuellement adressé au Roi, mais il n'est pas présenté au Parlement. Le gouverneur de BKAM peut être entendu par les commissions permanentes chargées des finances des deux Chambres, à leur demande, mais il n'a pas à s'expliquer sur la politique monétaire. Cette dernière relève à la seule compétence du Conseil des ministres.

Dans de nombreux pays, qu'ils soient développés, émergents ou en développement, les Banques centrales sont tenues de présenter leur rapport de politique monétaire au Parlement et d'en débattre avec ses commissions des finances. En France, par exemple, les statuts de la Banque de France stipulent que le Gouverneur adresse au Parlement et au Président de la république, au moins une fois par an, un rapport sur les opérations de la Banque, la politique monétaire qu'elle met en œuvre et les perspectives de celles-ci. Le Gouverneur peut aussi être entendu par les commissions des finances des deux assemblées du Parlement français, à l'initiative de celles-ci ou à sa demande. En Tunisie, la Banque centrale a corrigé en 2006 ses statuts pour inclure l'obligation du gouverneur de remettre un rapport annuel au Président de la république et d'en transmettre une copie au président de la Chambre des députés et à celui de la Chambre des conseillers.

L'article 58 du nouveau statut de BKAM stipulait que le Gouverneur pourrait être écouté par les commissions permanentes des deux Chambres chargées des finances, à la demande de ces dernières ou à l'initiative du Gouverneur, sur les questions relatives à la politique monétaire et à l'activité des établissements de crédit. Toutefois, le Conseil constitutionnel a déclaré cet article comme incompatible avec la loi. Selon l'ancienne constitution, le Gouverneur de BKAM ne peut assister aux séances des deux Chambres et aux réunions des commissions permanentes. En outre, BKAM, par son indépendance et l'étendue de ses missions, ne peut être considérée comme l'une des institutions publiques mentionnées dans la Constitution et devant être entendues par le Parlement. Ainsi, l'article 58 du statut de BKAM n'a pas été adopté.

Avec l'adoption de la nouvelle Constitution, en 2011, cette contravention constitutionnelle a pu être dépassée. Suivant l'article 70 de la dite Constitution, le Parlement a le droit d'évaluer toute politique publique, à l'instar de la politique monétaire. L'article 101 stipule que le Parlement doit réserver une séance annuelle à la

discussion et à l'évaluation des politiques publiques. En outre, l'article 102 autorise les commissions du Parlement à auditionner tous les responsables des administrations et des établissements et entreprises publics, en présence et sous la responsabilité des ministres dont ils relèvent. Il est donc temps d'activer ses articles et amener la BC à rendre compte aux citoyens par l'intermédiaire des élus.

C'est vrai que la politique monétaire s'avère des fois complexe et que la BC est la mieux placée à prendre les décisions en matière de politique monétaire. Néanmoins, c'est aux citoyens que revient finalement la responsabilité de juger le rendement de la Banque centrale. Or, pour arriver à un jugement, il est nécessaire d'avoir une compréhension de base des principaux enjeux.

Par ailleurs, le ciblage d'inflation se base sur les anticipations rationnelles des agents économiques et l'ancrage de ces dernières pour que l'inflation puisse atteindre son niveau cible. Pour bien conduire la politique monétaire dans un contexte de ciblage d'inflation, il est donc nécessaire de vulgariser les décisions de politique monétaire pour qu'ils puissent être compris largement par le public<sup>14</sup>, et de favoriser la compréhension et l'assimilation des statistiques produites pour une meilleure utilisation. En effet, si le public interprète mal les décisions de politique monétaire, cela va se traduire par un dérapage par rapport à l'objectif ciblé, ainsi qu'une perte de crédibilité de la Banque centrale. D'où la nécessité de mettre en place une stratégie de communication claire et proactive.

Pour que la stratégie de communication soit efficace, il faut que cette dernière s'inscrive dans un processus continu et itératif. En effet, la réitération régulière des objectifs, des actions et des motivations de la politique monétaire accroît la probabilité que les agents économiques retiennent ces messages et les intègre dans leurs comportements futurs.

En plus des communications qu'elle met à la disposition du public, BKAM devrait publier sur les chocs qui touchent l'économie, les mesures établies pour y remédier et les changements éventuels des objectifs de la conduite de la politique monétaire. Elle devrait également communiquer sur les méthodologies des enquêtes qu'elle mène pour évaluer les perspectives des prix et de l'économie, et ce pour accroître sa transparence.

<sup>14</sup> La Banque centrale devrait vulgariser ses décisions de politique monétaire pour qu'ils puissent être compris par une grande partie de la population, en prenant en considération que près de 30% de la population est analphabète et à peine 2% de la population ont accès à l'enseignement supérieur, sachant que ces derniers ne sont pas tous avisés sur l'importance de l'inflation dans une économie et de ses répercussions sur le plan économique.

### 3. Renforcer la capacité de la Banque centrale à prévoir l'évolution de l'inflation

Pour atteindre l'objectif de stabilité de stabilité des prix, il est nécessaire de fournir au Comité de politique monétaire les outils analytiques nécessaires pour prendre des décisions judicieuses. Il s'agit notamment de disposer de projections de l'inflation à moyen terme basées sur des fondements analytiques robustes, ainsi qu'une meilleure compréhension des mécanismes de transmission de la politique monétaire.

Pour prendre les décisions adéquates en termes de politique monétaire, il faudrait renforcer le dispositif actuel d'analyse de cette dernière et avoir les moyens nécessaires pour la construction des prévisions fiables. Ces prévisions constituent une préoccupation importante pour les agents économiques, d'où la nécessité de recourir à des modèles de prévisions robustes, soigneusement structurés et basés sur des fondamentaux réels et non académiques.

La Banque centrale doit considérer l'avenir et tenir compte de ce qui est susceptible de se produire à un horizon assez lointain dans ses décisions quotidiennes pour la mise en œuvre de la politique monétaire. Ses décisions doivent se fonder sur des hypothèses et se forger un jugement à propos de l'évolution future de l'économie, ainsi que du moment où ils doivent intervenir et du résultat final des mesures de politique monétaire adoptées.

En effet, compte tenu du délai qui sépare l'adoption des mesures de politique monétaire et leur incidence sur l'inflation, la Banque centrale doit prévoir quelles seront les pressions inflationnistes à un horizon de 18 à 24 mois. Il faudrait également établir des prévisions à l'égard des facteurs jugés exerçant une influence sur l'inflation.

En plus de leur rôle dans l'élaboration des projections découlant du scénario de référence, les modèles servent aussi à produire les scénarios de risque. Effectivement, ils jouent un rôle important dans l'estimation des conséquences des chocs sur les perspectives économiques et dans la projection des implications des différentes hypothèses concernant des variables clés, telles que la demande étrangère et le cours du pétrole.

Il existe différentes catégories de modèles de prévision de l'inflation. La majorité des modèles de prévision souffrent principalement de deux déficiences, des limitations quant à l'information utilisée et des problèmes de surparamétrisation<sup>15</sup>. Il est donc nécessaire de simplifier la règle optimale de la Banque centrale.

Effectivement, dès que la taille du modèle retenu augmente, la forme de la fonction de réponse devient très compliquée. Elle peut impliquer une réaction de la Banque centrale à toutes les valeurs passées, présentes et anticipées des endogènes du système. Cette complexité potentielle est une source de difficultés pour la définition et la mise en pratique des politiques optimales. Il s'agit des problèmes de communication et d'estimation des coefficients de réponse qui devient pratiquement impossible lorsque le nombre de variables devient trop élevé. En outre, plus le nombre de variables est élevé et plus le risque d'erreur augmente.

Il s'avère donc nécessaire de recourir à un modèle simple qui représente le mieux ce qui se passe en réalité. D'ailleurs les travaux empiriques ont démontré que c'est les modèles simples qui sont les plus robustes.

Vu la complexité et les incertitudes inhérentes à la conduite de la politique monétaire, il importe que Bank Al-Maghrib diversifie ses sources d'information relatives à la conjoncture et aux perspectives de l'économie, en ne se contentant pas des mesures quantitatives mais également qualitatives qui reflètent les attentes de l'ensemble des agents économiques dans ce sens (ménages, entreprises, professionnels du marché et universitaires).

Il ressort donc de cette deuxième section que le Maroc a fait des efforts considérables pour aligner les pratiques de politique monétaire aux standards internationaux, en définissant la stabilité des prix comme principal objectif des autorités monétaires et en faisant bénéficier la BC de plus d'indépendance et de transparence. Toutefois, ils restent insuffisants pour réussir la politique de CI.

Il faudrait donc que la nomination du Gouverneur soit validée par le gouvernement et que le statut de Bank Al-Maghrib soit révisé pour lui accorder plus d'indépendance, que la Banque centrale soit tenue de rendre compte de ses actions auprès du Parlement et qu'elle développe ses outils de prévisions d'inflation pour un meilleur ancrage des prévisions inflationnistes.

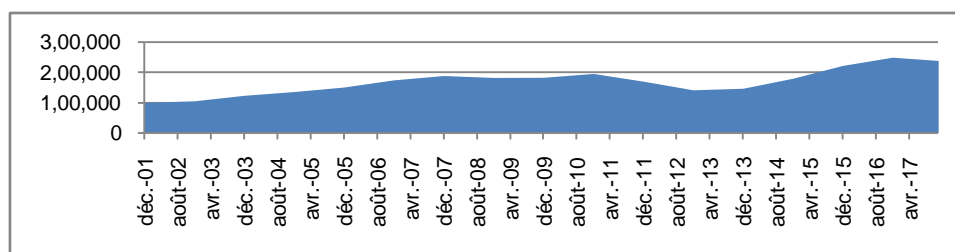
**Section 3: La flexibilisation graduelle du taux de change**  
Le ciblage d'inflation est un régime qui se base sur l'absence de points d'ancrage nominal autres que l'inflation. Ainsi, le régime d'ancrage du taux de change sur un panier de devises doit être abandonné, pour passer graduellement à un régime de change flexible.

En adoptant un régime de change fixe, le Maroc visait une stabilisation de l'économie nationale afin d'encourager les investissements. Ce régime a effectivement contribué à la stabilité macroéconomique et à la génération d'une inflation faible. Toutefois, il pénalise fortement la compétitivité des exportations nationales.

<sup>15</sup> La surparamétrisation est une modélisation qui implique trop de paramètres dans un système d'équations.



En effet, les poids accordés à l'euro et au dollar dans le panier, 60% et 40% respectivement, pénalisent le dirham. Selon les dernières données disponibles sur la structure des règlements, relatives à l'année 2010, l'euro et le dollar constituent les principales monnaies de règlement des dépenses, avec des parts respectives de 51,6% et 44,4%. L'euro et le dollar constituent également les principales devises de facturation des exportations, avec des parts de 64,4% et 32,4%. Les exportations marocaines ont ainsi été pénalisées de l'appréciation du dirham en lien avec l'appréciation de l'euro, alors que le dollar a accusé une dépréciation en lien avec la politique ultra-accommodante<sup>16</sup> adoptée par la FED.



Source: Ministère de l'Economie et des Finances et BKAM

Figure 5: Evolution des réserves de change (en millions de dirhams)

D'après KRUGMAN (1979), la crise de change dans un pays à régime de change fixe est déclenchée par une baisse progressive des réserves de change pour atteindre un niveau critique. Cette situation devrait engendrer une sortie massive des capitaux suite à une attaque spéculative soudaine et rapide<sup>18</sup>, faisant détériorer davantage le niveau des réserves de change. Face à ce dernier scénario, les autorités monétaires seraient incapables de défendre l'ancrage du taux de change et finiraient par l'abandonner.

D'ailleurs, les expériences des pays émergents au cours de la moitié des années 1990 ont ressorti la nécessité de passer, à un certain moment, à un régime de change flexible. En effet, ces pays qui s'ouvraient de plus en plus à l'économie mondiale, ont fini par puiser leurs réserves de changes, ce qui les a contraints à passer à un régime flexible avec le déclenchement des crises de change<sup>19</sup>. L'engagement du Royaume dans des divers accords de libre-échange l'amènerait à adopter un régime de change flexible.

La flexibilisation du taux de change au Maroc s'est avérée nécessaire parce que le pays n'a plus les devises nécessaires pour payer les achats à l'extérieur et le régime de change fixe est très coûteux comparativement à celui flexible. Les réserves de change, enregistrées à fin novembre 2017, ont été d'environ 238,4 milliards de dirhams. Dans l'hypothèse que le rythme d'importation en 2017 serait similaire à 2016<sup>17</sup>, ces réserves peuvent couvrir à peine 6 mois d'importations. Le Maroc est donc dans une situation critique en matière de réserves de change.

Le passage vers une flexibilisation du taux de change suppose que l'économie est solide et que la monnaie est forte. En effet, les pays qui choisissent d'abandonner un régime de change fixe pour celui flexible devraient faire face à trois types de difficultés. Il s'agit du mésalignement du taux de change réel<sup>20</sup> accompagné de déséquilibres externes et d'un épuisement des réserves de change, de l'impossibilité d'utiliser et de maintenir des taux d'intérêt à des niveaux suffisamment élevés pour pouvoir défendre la monnaie, ainsi que de la volatilité excessive des flux de capitaux qui tend à agir sur la liquidité nationale, à fragiliser le système financier et à créer un environnement macroéconomique instable.

Pour une sortie réussie d'un régime de change fixe à un régime flexible, un ensemble de conditions devraient être mises en place, à savoir la disposition d'un niveau suffisant de réserves de change, la mise en place d'un certain nombre de règles durant la période de transition, le choix du moment opportun pour le passage à un régime flexible, la mise en place d'une politique monétaire indépendante sous un régime de change plus flexible, ainsi qu'un degré de transparence élevé pendant le processus de sortie.

<sup>16</sup> Pour soutenir l'activité économique, la Réserve fédérale américaine a adopté, depuis fin 2008, une politique monétaire expansive qui consiste à maintenir ses taux directeurs entre 0% et 0,25%.

<sup>18</sup> L'attaque spéculative vient du fait que les opérateurs de marché perçoivent la monnaie nationale comme surévaluée et anticipent sa dévaluation ou encore un abandon de la parité fixe, ce qui rend l'acquisition des devises étrangères plus attractives.

<sup>19</sup> Crise mexicaine en 1994 et crise asiatique en 1997.

<sup>17</sup> Cette hypothèse est pratiquement impossible, parce que le rythme des importations s'inscrit dans un rythme haussier.

<sup>20</sup> Le mésalignement est la situation dans laquelle le taux de change effectif réel s'écarte du taux de change réel d'équilibre ou de long terme.



La possession d'un niveau suffisant de réserves est importante pour bien gérer le processus de sortie du change fixe, notamment dans les premières phases de la transition où la Banque centrale pourrait intervenir pour atténuer les fluctuations du taux de change.

La mise en place d'un point d'ancrage nominal est indispensable durant les premières phases transitoires vers un régime de change flexible, dans la mesure où il agit comme un point de référence pour les anticipations d'inflation. Le taux de change devrait être tenu au départ à l'intérieur d'une fourchette, dont les bandes seront élargies progressivement.

La disponibilité des instruments monétaires souples de gestion de liquidité est essentielle à un régime de change flexible. Elle dépend du niveau de développement du marché financier<sup>21</sup>, notamment monétaire, de sa taille<sup>22</sup> et des capacités institutionnelles de la Banque centrale.

Un bon fonctionnement du marché des changes est également nécessaire pour une stratégie de sortie réussie. Une plus grande flexibilité des taux de change est associée à des risques croissants. Les opérateurs du marché doivent ainsi avoir la capacité de se protéger contre de tels risques et éviter que les transactions réelles associées au commerce extérieur soient affectées. Ainsi, la libéralisation sélective des restrictions de change et du contrôle du compte de capital, qui entravent le développement du marché des changes et la capacité des participants du marché à gérer les risques associés à une plus grande flexibilité du taux de change, est nécessaire avant une sortie du régime de change fixe.

La transparence des mécanismes d'intervention du taux de change est particulièrement indispensable dans le cadre de l'adoption d'un régime de CI, parce que la perception du public que la Banque centrale maintient un objectif implicite du taux de change pourrait porter atteinte à sa crédibilité. Ainsi, la sortie d'un régime de change fixe devrait être précédée par une série de réformes institutionnelles visant à fournir une plus grande indépendance opérationnelle de la Banque centrale et à renforcer sa capacité de surveiller, d'analyser et d'expliquer les évolutions économiques.

La détermination du moment du lancement du processus de transition revêt également une importance primordiale. Le processus de sortie devrait être lancé une fois que les réformes structurelles mises en place soient jugées suffisamment profondes.

Pour le Maroc, le lancement du processus de sortie vers un taux de change flexible est pour l'instant assez loin. En effet, malgré que la BC soit assez indépendante et transparente, le pays ne possède pas, toutefois, de réserves de change suffisantes. Le processus de transition est également entravé par le manque de profondeur du système financier et le rôle limité du taux d'intérêt dans la gestion de la liquidité.

En effet, une flexibilisation du dirham n'est pas envisageable actuellement, compte tenu les caractéristiques institutionnelles du marché des changes et la portée limitée des structures du marché financier, qui conduiraient à des fluctuations erratiques du taux de change à court terme.

Ainsi, il s'avère nécessaire que le Maroc développe sa position extérieure globale, ainsi que son marché financier, notamment le marché de change. Il devrait en outre revoir les poids accordés aux devises constituant le panier en optant pour un régime de parité ajustable. Une fois la position extérieure est assez renforcée, il devrait adopter un régime de bandes de fluctuations mobiles qui constitue un régime transitoire entre la rigidité et la flexibilité du taux de change (Voir les différentes classifications des régimes de change établies par le FMI en Tableau 1).

<sup>21</sup> Un système financier développé et viable qui permet une certaine fluidité dans les mécanismes de transmission de la politique monétaire.

<sup>22</sup> La flexibilisation du taux de change, en cas de marché de change restreint, risque d'augmenter la volatilité du taux de change, conduisant ainsi à une illiquidité ou à un désordre des conditions du marché. D'où la nécessité de mener une période transitoire avant l'adoption d'un régime de change flexible, afin de renforcer la capacité d'atténuation des mouvements du taux de change.

Tableau 1: Classification des régimes de change par le FMI

Régimes d'arrimage ferme	1. Régime sans monnaie propre 2. Caisse d'émission
Régimes d'arrimage souple	1. Régime conventionnel de parité fixe 2. Parité ajustable 3. Parité glissante 4. Système de bandes de fluctuation mobiles 5. Système de rattachement à l'intérieur d'une bande de fluctuation horizontale
Régimes de taux de change flottant	1. Flottement dirigé 2. Flottement pur
Autres mécanismes d'arrangement	

Source: FMI « Annual Report on Exchange Rate Arrangements and Exchange rate Restrictions » (2013)

Le régime de change à bandes de fluctuation mobiles consiste au maintien de la valeur du dirham à l'intérieur d'une fourchette de fluctuation, qui serait ajustée périodiquement en fonction de la réponse des indicateurs macroéconomiques. La Banque centrale dispose de la possibilité d'une gestion active et discrétionnaire de la politique de change à chaque fois qu'elle le juge nécessaire, afin d'éviter une dépréciation / appréciation accentuée du dirham.

Les autorités monétaires peuvent, dans une première phase, maintenir leur contrôle sur la circulation des capitaux, en soumettant certaines opérations sur les mouvements de capitaux avec l'extérieur à des restrictions. Ce maintien de contrôle permettrait de lui garder une certaine marge de manœuvre sur sa politique intérieure pour assurer la stabilité de la politique de change et de la politique macroéconomique globalement.

A noter que la Banque Mondiale et le Fonds Monétaire International encouragent le régime de change souple, parce qu'ils considèrent que la souscription des pays à un taux de change modulable offre plus de possibilités d'adaptation et des coûts d'ajustement plus réduits en cas de chocs, comparativement à l'application d'un taux de change fixe.

#### Section 4: L'approfondissement du marché financier marocain

Les réformes financières que le Maroc a adoptées à partir du début des années 1990 ont renforcé la solidité du marché financier marocain. Toutefois, et compte tenu des évolutions que connaissent les marchés financiers internationaux, il reste loin d'assurer une mobilisation efficace de l'épargne et son allocation efficiente dans les circuits économiques.

En effet, le marché financier marocain manque de profondeur. Il est fortement concentré, et souffre du manque de liquidité, de non diversification des instruments de financement, ainsi que de la transparence limitée des systèmes d'information.

Ces défaillances du marché financier feront l'objet de cette section. Dans ce sens, on va d'abord s'attarder sur la nécessité du renforcement de la concurrence du secteur bancaire, puis sur l'amélioration de la liquidité du marché financier et enfin sur la consolidation de l'intégration financière.

#### 1. Le renforcement de la concurrence du secteur bancaire

Le degré de concentration du secteur bancaire est très élevé, où les 3 premières banques concentrent 65,9% du total-actif, 66,1% des dépôts et 64,8% des crédits en 2016. Ces trois banques ont ainsi le pouvoir de renverser la tendance du marché. C'est cette concentration qui explique le retard que connaît le marché bancaire marocain et son manque de liquidité comme elle accroît le risque de défaillance.

Le taux de bancarisation, à 69%, est en amélioration. En outre, seules six banques, des 14 existantes, sont cotées à la BVC, contribuant de près de 35% de la capitalisation boursière. Il s'agit d'Attijariwafa Bank, de la Banque centrale populaire, de la Banque marocaine du commerce extérieur, de la Banque marocaine pour le commerce et l'industrie, du Crédit du Maroc et du Crédit immobilier et hôtelier.

Il est donc important de renforcer la concurrence du secteur bancaire pour favoriser le développement de l'intermédiation financière et soutenir la stabilité et la modernisation du système financier dans son ensemble.

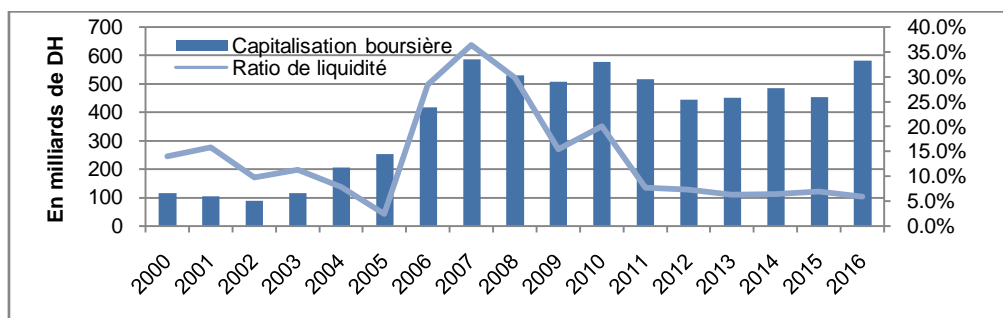
Par ailleurs, le cadre réglementaire bancaire devrait être renforcé pour augmenter la résilience des banques à faire face aux différents chocs. En effet, en cas d'une libéralisation totale de la circulation des capitaux et du taux de change, les banques devraient trouver des difficultés à absorber les chocs, ce qui accentue le risque de déclencher une crise financière dont les répercussions pourraient se propager à la sphère réelle, par le biais des crédits.

#### 2. L'amélioration de la liquidité du marché financier

La liquidité constitue un facteur clé de renforcement de la profondeur du marché financier.

Toutefois, le manque de liquidité est le climat que règne le marché financier marocain actuellement. En effet, l'atonie actuelle du marché boursier marocain est notamment due au repli des transactions, en lien avec le manque de liquidité. Le volume des transactions a été maintenu à 3 milliards de dollars, en 2016, contre 17 milliards pour l'Egypte, 327 milliards pour la Turquie et 388 milliards pour l'Arabie Saoudite.

Le ratio de liquidité, qui a rarement dépassé 20%, a enregistré 5,9% en 2016, contre 6,9% en 2015 (Voir l'évolution du ratio de liquidité dans le Graphique 47). Le repli des transactions s'explique également par les stratégies des actionnaires majoritaires qui conservent les actions des sociétés les plus performantes.

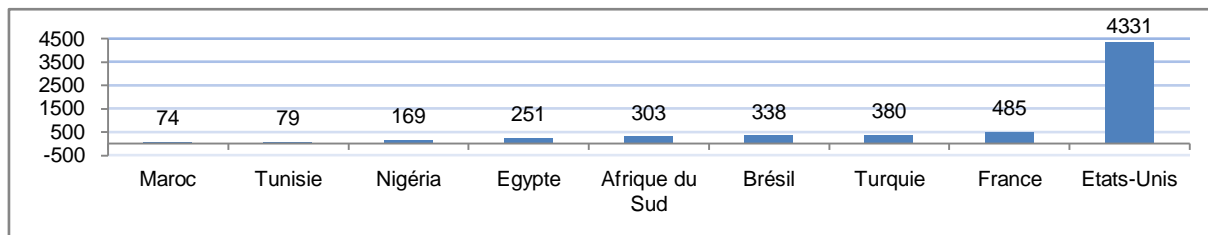


Source: MEF sur la base des données de la Bourse de valeurs de Casablanca

Figure 6: Capitalisation et ratio de liquidité<sup>23</sup> du marché boursier marocain

D'ailleurs, l'indice MSCI Maroc, qui mesure la performance du marché financier marocain a été dégradé, en 2013, en passant de la catégorie des marchés émergent à celle des marchés en frontière, en lien avec le faible nombre des sociétés cotées et la contre-performance affichée du secteur boursier durant les dernières années.

La capitalisation boursière, à 583 milliards de dirhams en 2016, reste fortement concentrée sur des valeurs bancaires (33,8%) et des télécommunications (21,4%). En outre, le nombre de sociétés cotées est relativement limité, à 74 sociétés en 2016, comparativement à d'autres pays comparables (Voir Graphique 8).



Source: Banque mondiale

Figure 7: Comparaison du nombre des sociétés cotées en Bourse (en 2016)

La dégradation de l'attractivité de la Bourse de Casablanca provient du gel du processus de privatisation depuis 2006, qui a constitué le moteur de croissance du marché boursier marocain, ainsi que de la faible dynamique de l'économie réelle.

Ainsi, il faudrait dynamiser l'activité du marché boursier, en révisant la fiscalité des activités financières, en apportant des améliorations sur le cadre réglementaire pour améliorer le climat des affaires, ainsi qu'en renforçant l'intégration financière et l'accès à l'information. Ce dernier demeure encore coûteux pour les opérateurs du marché.

### 3. Le renforcement de l'intégration financière

Le Maroc est quasiment ouvert sur le marché international en ce qui concerne les transactions

commerciales. Toutefois, il demeure faiblement ouvert en matière de transactions financières, dont les restrictions restent très élevées.

Sur le marché des actions, le Maroc offre aux investisseurs étrangers la possibilité de détenir des titres de participation, alors qu'il impose des contraintes totales sur la détention des titres de participation par des marocains résidents sur les marchés internationaux.

Sur le marché bancaire, les banques ont été autorisées à octroyer des crédits en dirhams aux étrangers non-résidents pour le financement de l'acquisition de biens immeubles au Maroc. Alors que les opérations de crédit des marocains résidents sur le marché international sont fermées.

<sup>23</sup> Le ratio de liquidité est calculé en divisant le volume des transactions sur le marché central sur la capitalisation boursière.

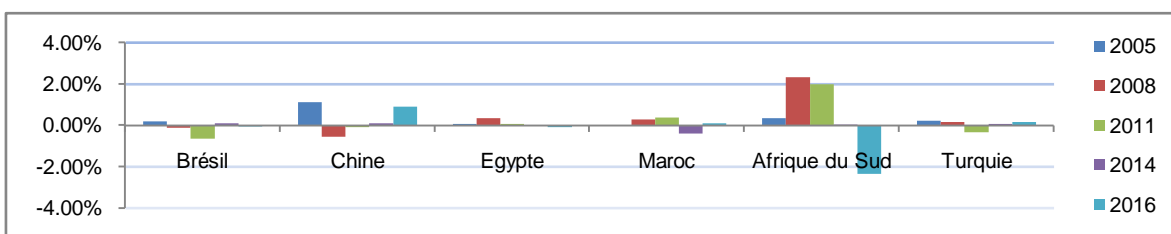
En ce qui concerne le degré d'ouverture du marché monétaire, les opérations des non-résidents sur le marché monétaire national sont moins contrôlées que les opérations des résidents sur le marché monétaire étranger.

La réglementation des investissements directs pour les résidents et les non-résidents qu'impose le Maroc s'est assouplie. En effet, le compte capital lié aux IDE a été libéralisé en accordant la liberté aux non-résidents de procéder à des opérations de transfert du capital pour la réalisation des investissements au Maroc, quelle que soit leur forme (création de société, participation à l'augmentation du capital des sociétés, achat de valeurs mobilières cotées, etc.). Les transferts des revenus générés par ces investissements et les retransferts des produits de liquidation des investissements effectués, y compris les plus-values éventuelles, ont été également autorisés, sans aucune limitation.

Les investissements marocains à l'étranger restent soumis à un ensemble restrictions. Toutefois, les

autorités publiques ont autorisé les banques, à hauteur de 10% des fonds propres réglementaires, les compagnies d'assurance et de réassurance ainsi que les organismes de retraite jusqu'à 5% du total de leurs actifs, et les OPCVM dans la limite de 10% de leurs actifs, à effectuer des placements en devises à l'étranger.

Par ailleurs, le Maroc est considéré comme un pays imposant une fermeture totale des opérations d'investissements de portefeuilles. L'analyse de la structure de la dernière Position Extérieure Globale (PGE), relative à l'exercice 2012, fait ressortir la faiblesse des flux de l'investissement de portefeuille et la non mobilisation des investissements financiers étrangers. Comparativement à d'autres pays, l'évolution des investissements de portefeuilles reste modeste (Voir Graphique 9).

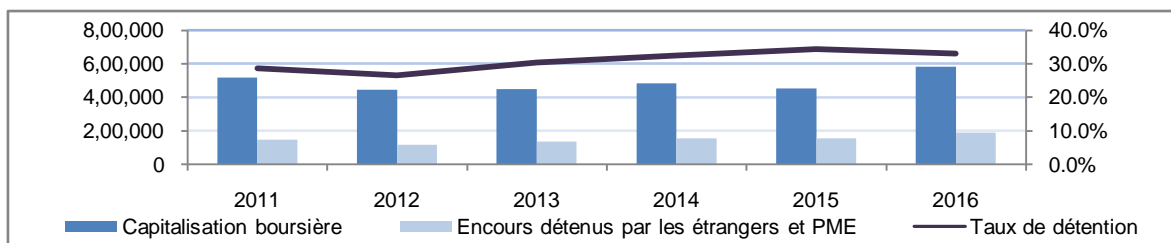


Source: Auteurs, sur la base des données du FMI

Figure 8: Evolution des investissements de portefeuilles (en% du PIB)

La part de la capitalisation détenue par les investisseurs étrangers est en baisse, se situant autour de 33% de la capitalisation boursière. Il s'agit essentiellement de participations stratégiques de

groupes étrangers dans de grosses capitalisations de la Bourse de Casablanca. Par ailleurs, les investisseurs étrangers concentrent 11,2% du volume des transactions de la BVC.



Source: Teneurs de comptes, Bourse de Casablanca, Calculs AMMC

Figure 9: Part des actions cotées détenues par les étrangers et les MRE dans la capitalisation boursière (en milliards de DH)

Toutes ces contraintes réglementaires conjuguées au faible développement des marchés de capitaux, constituent un frein au développement et à l'approfondissement du marché financier marocain. Pour y remédier, il faudrait renforcer la concurrence bancaire, améliorer la liquidité des marchés des

capitaux et revoir le cadre réglementaire des opérations financière pour favoriser l'intégration du Maroc à l'économie mondiale.

Pour mener une politique de ciblage d'inflation au Maroc, il faudrait au préalable qu'un ensemble de pré-requis institutionnels et structurels soient mis en

place. Il s'agit notamment de l'amélioration des fondamentaux macroéconomiques, le renforcement du rôle de la Banque centrale dans la conduite de la politique monétaire, ainsi que l'adoption d'un régime de change flexible.

## II. CONCLUSION

Certes que le Maroc affiche un niveau d'inflation maîtrisé mais c'est en lien notamment avec le soutien des mesures budgétaires et non pas de la conduite de la politique monétaire. L'insoutenabilité de cet appui budgétaire a amené les autorités publiques, dans un premier temps, à adopter une politique d'indexation partielle, pour converger à terme à un abandon total du système des subventions, dans un deuxième temps.

Après le recours à ce système d'indexation, l'inflation a augmenté de près de 0,5%. Ce qui a renforcé les inquiétudes sur l'impact d'une indexation totale sur le niveau de l'inflation. Cette dernière pourrait frôler les 10% en prenant en considération les impacts directs et indirects d'une telle indexation totale. D'où la nécessité d'adopter une nouvelle politique monétaire qui soit plus active et plus crédible pour atteindre son objectif de stabilité des prix.

Le ciblage d'inflation représente une stratégie alternative et efficace au régime monétaire actuel. Il requiert, toutefois, la vérification d'un ensemble de conditions préalables dont notamment, la solidité des fondamentaux macroéconomique, le renforcement de l'autonomie de Bank Al-Maghrib, la flexibilisation du taux de change et l'approfondissement du marché financier.

Pour le moment, le Maroc souffre d'un certain nombre de défaillances qui l'empêcherait de mettre en place le ciblage d'inflation. En effet, les fondamentaux économiques sont fragiles. Les déficits budgétaire et de la balance courante sont assez élevés, le niveau de la dette s'est significativement accru et les réserves de changes que possède le pays ne couvrent que 4 mois d'importation.

Pour pouvoir adopter effectivement le ciblage d'inflation, il est nécessaire de revoir le modèle de croissance national pour se compter davantage que sur la demande étrangère que la demande interne, afin de drainer les devises et rééquilibrer le déficit de la balance commerciale. En outre, il est indispensable de mettre en place un ensemble de réformes pour améliorer la compétitivité de l'offre exportable du Maroc et l'attractivité de l'environnement des affaires.

Par ailleurs, il faudrait renforcer l'indépendance de la Banque centrale pour que la politique monétaire puisse agir indépendamment de la dominance fiscale pour atteindre la stabilité des prix. Cette indépendance devrait être compensée d'un autre côté par l'obligation de rendre compte. En effet, pour évaluer la crédibilité des actions adoptées, il est nécessaire que le Gouverneur de la Banque centrale présente le

récapitulatif des actions de la politique monétaire et leur contexte.

La transition vers un régime de ciblage d'inflation nécessite l'abandon du régime de change fixe, qui a lourdement pesé sur la balance commerciale marocaine, pour celui flexible. Toutefois, le marché des changes national n'est pas aussi mature pour un flottement pur. Il serait donc opportun d'adopter un régime de flottement encadré, tel que la Thaïlande, qui lui permettrait en cas de besoin, d'intervenir sur le marché de change sans compromettre la croissance économique.

Comme dans la majorité des pays qui ont adopté le ciblage d'inflation, le Gouvernement, par le biais du Ministère des finances, ainsi que la Banque centrale doivent collaborer ensemble pour atteindre la stabilité des prix. Le Gouvernement devrait fixer l'objectif d'inflation qui permettrait de soutenir la croissance tout en préservant les équilibres macroéconomiques et la Banque centrale doit disposer de toute la latitude nécessaire pour atteindre l'objectif d'inflation.

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## Impact of on the Job Training on Employee's Performance (The Case of Wollega University Main Campus)

By Adeba Hundera Saide

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**Abstract-** This study was intended to look into, impact of on the job training on employee's performance in Wellega University of academic staffs. The sample selected for the study was one hundred two (102), from the total population of eight hundred ninety seven academic staffs on duty in 2010/18 academic year (897) of which (130) male and sixty seven (67) female in 2018/10 academic year. This study has revealed that trained employees are more willing to continue working in the same organization after being trained than those who are not yet trained. One big result is that there is no feedback obtained after training session, training given at wollega university were not by professional trainers and hence, respondents shown their degree of reservation on knowledge and experience of trainers. Once an employee is trained, he gains opportunity to enhance his performance, his current job has direct impact on achieving the organizational objectives, his job performance outcomes are consistent with the goals of the organization and his good performance on his job gives him/her formal appreciation by the higher ups.

**Keywords:** *training impact, employee productivity, performance.*

**GJMBR-B Classification:** *JEL Code: M51*



*Strictly as per the compliance and regulations of:*



# Impact of on the Job Training on Employee's Performance (The Case of Wollega University Main Campus)

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**Abstract-** This study was intended to look into, impact of on the job training on employee's performance in Wellega University of academic staffs. The sample selected for the study was one hundred two (102), from the total population of eight hundred ninety seven academic staffs on duty in 2010/18 academic year (897) of which (130) male and sixty seven (67) female in 2018/10 academic year. This study has revealed that trained employees are more willing to continue working in the same organization after being trained than those who are not yet trained. One big result is that there is no feedback obtained after training session, training given at wollega university were not by professional trainers and hence, respondents shown their degree of reservation on knowledge and experience of trainers. Once an employee is trained, he gains opportunity to enhance his performance, his current job has direct impact on achieving the organizational objectives, his job performance outcomes are consistent with the goals of the organization and his good performance on his job gives him/her formal appreciation by the higher ups. The implications of the distinctive effect of employee training and other human resource practices on job performance measures and employee's career path were found remarkable. Generally, the findings of this study were found reliable with the studies conducted by other researchers on the contribution of human resource practices related to the job performance and employee's career.

**Keywords:** *training impact, employee productivity, performance.*

## CHAPTER ONE

### I. INTRODUCTION

The objective of this study is the impact of training and development of employees and its effects on the performance of an enterprise or organization. This chapter gives introductory information on the background, problem, and objectives of the work. It also has information on the scope and significant of the study.

#### a) *Back ground of the study*

In an ever changing and fast paced corporate world, training and development is an indispensable function. Training and development is one of the lowest things on the priority list of most companies. When it's

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organized, it is often at the persistence of the Training and Development offices. There is, however, enormous value in organizing proper training and development sessions for employees. Training allows employees to acquire new skills, sharpen existing ones, perform better, increase productivity and be better leaders. Since an organization is the sum total of what employees achieve individually, organizations should do everything in their power to ensure that employees perform at their peak. Training presents a prime opportunity to expand the knowledge base of all employees. Despite the potential drawbacks, training and development provides both the company as a whole and the individual employees with benefits that make the cost and time a worthwhile investment.

Wollega University, which is working to be among the 25 top Universities in Africa by the year 2025, is one appreciating the provision of Training and development programs for its employees (WU plan, 2009). To put all this in action the institution has organized an independent office which will facilitate various capacity building programs for its employees and the community. The institution believes that provision of continues training is one of the tool to achieve its vision.

Hence the aim of this study is to investigate the contributions of training and developmental programs given to employees of the institution.

#### b) *Statement of Purpose*

Wollega University is one of the fastest growing educational institutions in the country Ethiopia. The institution is able to lead the second generation universities for several years. Teaching and Learning, research and Community services are the major pillars of this institution. Equipping the academic and academic staffs with the necessary skills is unquestionable and deniable for the growth of the institution. As a result institution is always working to catch the changing environment through the provision of various capacity building programs.

Since its establishment (inception) the institution has been organizing several capacities building programs in which many employees of the institution has been participated and improved their performances. And the institution will continue providing several

capacity building trainings for the betterment of the institution throughout its life.

However, the institution does not have scientifically conducted and organized feedbacks of the performance improvements brought as a result of the trainings and developmental programs given to the employees. Therefore, this research aims to investigate the outcomes of the trainings given so far.

#### c) *Research Question*

This study aims to get answer for the following research questions

1. Were the objectives of the trainings relevant to the employees and the university as a whole?
2. Were the deliveries of the trainings efficient?
3. Were the training facilities adequate?
4. What is the impact of the training on the employees' performance?
5. What are the challenges faced during the training?

#### d) *Research Objective*

##### i. *General Objective*

The main objective of this research is to investigate the impact of trainings given by Wollega University on the employees' performance.

##### ii. *Specific Objectives*

1. To evaluate the objectives of trainings conducted in Wollega University.
2. To assess the efficiency of training delivery methods.
3. To evaluate the adequacy of facilities required for the training.
4. To evaluate the outputs of the training provided in Wollega university.

#### e) *Significances of the study*

Training believed to be a key for organizational success and it contributes for the improvement of employees' performance. In the contemporary world, where there is high competition, there is no institution without incorporating training and development as one and primary tool for organizational success. This study is expected to provide insights of the trainings and development programs provided to the employees along with their strength and weakness helping future trainings be improved more.

#### f) *Scope of the Study*

This study focused on assessing and evaluating the contribution/impact of rendered trainings and development programs on the universities performance targeting only main campus (Nekemte) academic staff of the university. The main target of the study was academic staff of main campus or nekemte Campus only.

## CHAPTER TWO

### II. LITERATURE REVIEW

#### a) *Introduction*

This chapter presents a review of the literature on the topic of effects of training and relevance of training programs on employee job satisfaction, a case study of training programs at the United Nations. The chapter is structured on the basis of the research questions. The first section reviews literature on the effects of the training programs available. Sections on the effects of training programs on employee performance and self-esteem will follow respectively. The chapter will end with a summary of the aspects covered under the literature review and a brief introduction to the next chapter.

#### b) *Concepts and Definitions*

Well trained employees are key to a business' success. It has been shown that the most successful and productive employees are those who have received extensive training and development. These groups of employees can be described as the "cream of the crop" that often has the strongest stake in an organization's future.

According to Dessler (2008), even when employees are carefully selected, it does not still guarantee totally acceptable performance from the employees. This is because while the potential of an employee to perform is one thing, performing is another and therefore an employee with a high potential to perform may not still perform his job if he does not go through training and development. This is why training of newly employed starts with organizational orientation.

Cole (2004), postulates that human resources are the most dynamic of all the organization's resources and therefore they need considerable attention from the organization's management, if the it human resource are to realize their full potential in their work.

##### i. *Meaning of training*

DeCenzo & Robbins (2000), explain training as a "learning experience, in that, it seeks a relatively permanent change in an individual that will improve his ability to perform on the job". This mean training must be designed in such a way that, it will involve the either the changing or enhancing of skills, knowledge, attitudes, and social behavior. This change or enhancement of skills, knowledge, attitudes, and social behavior could involve what the employee knows, how he works, his relations and interactions with co-workers and supervisors.

Finally, Ivancevich (2010), says "training is an attempt to improve current or future performance of an employee and it is important for both new and current employees" He quotes Clifton & Fink (2005), as follows:



*“Training is a systematic process of altering the behavior of employees in a direction that will achieve organization goals. Training is related to present job skills and abilities. It has a current orientation and helps employees’ master specific skills and abilities”.*

#### ii. *Employees’ Performance*

Employees are the most valuable asset of every organization because a work without human capital is not possible. Bearing these things in mind every organization is investing a huge capital in training and development.

According to Khan et al (2011), on job training is positively related with organizational performance as measured by empirical data. According to Iftikhar Ehmadi and Siraj-Ud-Din (2009) in health industry training and development has a role like a back bone. It enhances the performance of an employee. Thomas j. Watson (founder of IBM) said about the human resource: “you can get capital and erect buildings, but it takes people to build a business”.

Organizational goals without human resource cannot be achieved; most of the jobs have such type of orientation which cannot be performed without human capital. According to Flynn and al., (1995) on the job training reduces cost and saves time. You can give training in your organization for assigning the duties of senior employee, juniors are attached with seniors for some time and they learn and train there.

According to Ohabunawa (1999) those organizations that train their employees well, managers and superiors have the confidence to get the authority and to deal with their subordinates. Abiodun (1999) said that, through training employees can get knowledge, skills, and attitudes which are the requirement of employees to perform their task adequately. Stephen & Bowley’s (2007) study shows the link between employee productivity and training which further leads to employee performance.

Baldwin & Johnson (1995) claim that lower levels of training will increase the chances of employee migration from one organization to another. However, employee’s satisfaction and loyalty increases by higher degree of training towards the firm and decreases the chances of employee termination. (Choo & Bowley, 2007). Organizational goals can be achieved effectively if employees of those organizations are provided with sufficient training and development (Flynn et al., 1995; Kaynak, 2003; Heras, 2006).

Furthermore through training and development the performance of employees increases (Shepard, Jon et al., 2003). Training and development programs are expensive but its payback is more than it costs to organizations (Flynn et al., 1995; Kaynak, 2003; Heras, 2006). Each corporation should focus on training and development in order to better compete in the present era of competition (Carlos A. Primo Braga). Training and

development has significant role for the development of employee’s performance. According to Partlow, (1996); Tihanyi et al., (2000) and Boudreau et al., (2001) training should be designed according to the need of employee and organizations which perform these things in order to get better results. The design of training should be according to the needs of the employees (Ginsberg, 1997).

#### iii. *Employee’s Training*

Training is of growing importance to companies seeking to gain an advantage among competitors. There is significant debate among professionals and scholars as to the effect that training has on both employee and organizational goals. One school of thought argues that training leads to an increase in turnover while the other states that training is a tool that can lead to higher levels of employee retention (Colarelli & Monte, 1996; Becker, 1993). Regardless of where one falls within this debate, most professionals agree that employee training is a complex human resource practice that can significantly impact a company’s success.

The training industry as a whole has shown significant growth through the years in America. In 1995, \$7.7 billion was spent on the wages and salaries of in-house company trainers and \$2.8 billion was spent on tuition reimbursement (Frazis, Gittleman, Horrigan, Joyce, 1998). Training can have a considerable influence on company finances as there are several potential training costs that companies may incur. One type of training related cost is direct cost. This may include instructor salary, materials, and follow-up supervision.

A second type of training related cost is indirect cost. These costs are related to worker output and productivity during and upon completion of the training. Along these lines, once a training program is completed, worker productivity is expected to increase. The benefits will be to the company, due to an increase in worker output and productivity, and to the worker, as the increase in output should translate into higher wages and opportunities for career advancement.

In general, a company will weigh the costs and returns to training to determine the amount of investment it will incur (Kaufman & Hotchkiss, 2006). In addition to the direct and indirect costs described above, turnover plays a significant role in the amount of training investment companies will assume. The greater the chance of employee turnover, the less likely a company will invest in it. A company loses all of its investment should an employee terminate the relationship upon completion of training. As a result, employers have very important decisions to make in regards to the level of investment they are willing make in training. Training duration, specificity, relevance, payment options, and training location are all things that

employers must consider while developing a training program. Krueger and Rouse (1998) examined the effect that training and workplace education programs can have on various organizations.

The importance of ensuring employee retention following training may lie in the strategic approach that is utilized. Companies can seek to achieve organizational goals through a variety of human resource strategies and approaches. One such approach, a commitment strategy, attempts to develop psychological connections between the company and employee as a means of achieving goals (Arthur, 1994; Scholl, 2003).

In an attempt to ensure that the employee remains with the company following training, employers may implement a strategy to training that fosters commitment. Training that attempts to increase employee commitment may serve to counter the numerous direct and indirect costs associated with turnover. Although a commitment strategy can be tied to all company human resource practices; recruitment, selection, performance evaluation, and so on, the focus of this research will be to determine whether training can lead to an increase in employee commitment and in turn foster employee retention.

#### *Training and Organization Performance*

According to Tharenou, Alan and Celia (2007) the goal of training is to enhance the organization effectiveness. It also demands an influence on employee's performance, as well as in relation to organizational performance which is mediated by means of employee's performance. Aguinis and Kraiger (2009) said that training improves the overall organization profitability, effectiveness, productivity, and revenue and other outcomes that are directly related to the training in improving the quality of services.

Al Damoe et al. (2012) claimed that organization performance is measured through financial and non-financial measures like sale, profit, and market share and nonfinancial factors measures are efficiency, quality of service, productivity of organization, satisfaction of employees and commitment. These factors can increase through training. Olaniyan and Lucas (2008) believe that training enhances the employees' capacity to contribute to the optimal performance of the organization.

#### *Training and Employee's Performance*

According to Brum (2007) training is probably the hardest strategy to improve employee's determination towards the organization's performance. Khanfar (2011) views substantiates Brum's (2007) claim regarding employee performance that is provided by training. Akhtar et al. (2011) discovered that training has an optimistic association between motivations along with job engagement involving personnel doing work in organizations.

Muzaffar et, al,. (2012) indicates that, to increase the employee's performance, it is crucial to inspire the employees by means of satisfying the space in between skills necessary and the owned or operated by means of staff through delivering applicable training. Farooq and Khan (2011) concluded that the role of the valuable training is to improve the quality of task process that brings improvement in the performance of employees.

## CHAPTER THREE

### III. METHODOLOGY AN INTRODUCTION

Research methodology is a way to systematically solve a research problem by logically adapting various steps (Scridhar, 2008). This chapter looked at the research methodology as used in the study. This chapter presented the following; research design, the population of the study, the sample and sampling techniques, instruments for data collection and method, data analysis and presentation methods and the research procedures (Githinji Angela, 2009)

#### a) *Research Design and Approach*

This research will employ an explanatory research in that it evaluates the contributions of the trainings given to the employees of Wollega University to the overall performance of the employees and the university as a whole through deeper and strong survey. This study will also use both qualitative and quantitative approaches. Here the researcher wish to collect data from deans, directors and vice presidents of the institution. Moreover, the researchers will use quantitative approaches to quantify the outputs of the questionnaire collected for employees of the three campuses.

#### b) *Population*

Since this research is conducted in Wollega University, the academic staff of the institution will be the main targets of the study. Accordingly, the population of the study is composed of academic staff of Nekemte. Numerically, the numbers of academic staffs in the campuse are 1089 (Wollega university Human resource Department, 2018).

#### c) *Sampling Techniques*

The researcher will uses simple random sampling for the permanent employees where the entire population has an equal chance for selection. Simple random sampling is one of the probability sampling techniques in which the sample is chosen by applying a table of random numbers or a computer generated random numbers to a numbered frame.

In determining the sample size from total population (Naresh, 2007) will be used and the researcher believes and select the sixth stage because

the total population is about 1089 in 2010 academic year.

Table 3.1: Sample Determinations

Population Size	Sample size		
	Low	Medium	High
51-90	5	13	20
91-150	8	20	32
151-280	13	32	50
281-500	20	50	80
501-1200	32	80	125
1201-3200	50	125	200
3021-10,000	80	200	315
1001-35000	125	315	500
35001-150000	200	500	800

Source: (Naresh, 2007)

d) *Sample Size Determination*

The researcher will uses simple random sampling for the permanent employees where the entire population has an equal chance for selection. Simple random sampling is one of the probability sampling techniques in which the sample is chosen by applying a table of random numbers or a computer generated random numbers to a numbered frame.

In determining the sample size from total population (Naresh, 2007) will be used and the researcher believes and select the sixth stage because the total population is about 1089 in 2010 academic year. Hence, the sample size will be 150.

Hence, the sample selected for the study was one hundred fifty (150), from the total population of one thousand eight nine academic staffs on duty in 2010/18 academic year (1089) of which (1020) male and seventy nine (79) female in 2018/10 academic year.

e) *Sources of Data*

The researchers will gather data both from primary and secondary sources. The Primary sources of data are respondents which will be gathered trough questionnaire method and the secondary data will be collected from previously gathered training feedbacks at different times.

f) *Instruments*

For the purpose of reaching on the targeted objectives of this study, structured questionnaires will be

distributed to the sampled population. These questionnaires will try to measure the targeted objectives with the help of five scaled likert scale questions. In addition to the questionnaires detail interviews with those individuals who have given trainings and with those top officials of the university will be conducted carefully.

g) *Methods' of Data Analysis and Presentation*

The data upon its collection and coding will be analyzed using SPSS 20 version with detailed descriptive and T-test and Chi-square results in explaining the contributions that the training have had on the employees and the university's performance as a whole.

## CHAPTER FOUR

### IV. ANAYSIS AND PRESENTATION

a) *Introduction*

This chapter presents the study analysis and presentation. The chapter includes the study demographic information, the survey result referring to impact of training and development the case of Wollega University.

b) *Demographic information*

This part commences with the analysis of the demographic data gathered from the respondents using frequencies and percentages. Accordingly, the general

respondents" characteristics including: sex, age, educational level and work experience are presented in Figure 4.1.1 below. For this study, a total of 102 questionnaires were distributed to the employees currently working in wollega university Nekemte Branch

to assess impact of on the job training on employee's performance. All distributed questionnaires were not filled up and returned because of different reasons and response rate is 91.9%.

Table 4.1.1: Respondents Demographic information

No.	Demographic information	Demographic information	Frequency	Percentage
1	Sex	Male	62	66.7
		Female	31	33.3
2	Age category	18-25	12	12.9
		26-30	60	64.5
		31-35	13	14.0
		36-40	5	5.4
		Above 40	3	3.2
3	Educational background	Diploma	3	3.2
		Degree	19	20.4
		Masters	65	69.9
		PhD and above	6	6.5
4	year of service	less than one year	13	14.0
		1-4 years	17	18.3
		4-7	46	49.5
		7-9	12	12.9
		above 9 years	5	5.4

Source: Researchers own computation from survey result (2018).

From the table above table 4.1.1, about (60%) of respondents are found between the ages of 26-30years. This implies that the age of majority of the respondents is less than 35 years and majority of the respondents are youngsters. The second largest age group of the respondents is about 30-5 (13%)

From the table 4.1.1 above, it is possible to deduce the following facts. The overwhelming majority of the respondents were 62 (66.7%) males and the rest 31 (33.3%) were females. This implies that the majority of academic staff was male employees and females' participation was low relative to male.

Educational background of the employees is an important factor in undertaking their respective responsibilities and to make critical decisions in their working sector or unit. Considering the respondents" level of education, 6 (6.5%) of respondents were PhD degree holder were as 65 (66.9%) of the respondents were masters degree holders. This signifies that the majority of respondents were masters degree holders in terms of their educational level and the university should plan for the development of its workers to PhD level so as to increase of their job performance.

As one can observe from the above table, the largest groups of respondents n=46 (49.5%) have a working experience of 4-7 years in the university. Meantime n=17 (18.3%) are in the range of 1-4 years. Longer year of experience shows that there is relatively

lower employee turnover. This benefits the organization, by keeping employees loyal to the university and reduces cost of hiring new employees (See table 4.1.1 above).

c) *Employees' Perception in the Practice of Training and Development*

Many organizations spend much money on training, believing that training will improve their employees" performance and productivity. Recruiting, selecting, orienting and then placing employees in jobs do not ensure success. In most cases, there may be the gap between employees knowledge and skill and what the job demands. The gap must be filled through training and development programs. Hence, personnel training and development is one of the major ways that work organizations attempt to maintain the competency levels of their HRD and increase their adaptability to changing organizational demands. With regard to the respondents" reaction with the practice of Training and Development the following statements were given to indicate their degree of agreement in Table 4.2.1

Table 4.2.1

No.	Objectives of the training	Scales	Frequency	Percentage
1	Relevance of training objective	SDA	9	9.7
		DA	2	2.2
		N	3	3.2
		A	49	52.7
		SA	30	32.3
2	Trainings were prepared with the inclusion of Contemporary issue	DA	8	8.6
		N	31	33.3
		A	44	47.3
		SA	10	10.8
3	Clear statement of training objective	SDA	9	9.7
		N	7	7.5
		A	44	47.3
		SA	33	35.5
4	Was the training objective practicality	DA	9	9.7
		N	7	7.5
		A	74	79.6
		SA	3	3.2
5	Training Objective was in line with vision of wu	DA	2	2.2
		N	5	5.4
		A	77	82.8
		SA	9	9.7

As shown in the above table 4.2.1, respondents were asked to show their degree of agreement or disagreement regarding the question of whether training objective was relevant to their actual work and vision of the university using the above liker scale questions, according majority of the respondents 47 (52.7%) replied agree with the concept that majority of trainer provided them clear objective. In contrary 9(9.7%) of respondents replied that they strongly disagree with the concept.

Another concern was the matter of inclusion of contemporary issues in training material and manual. For this matter majority of respondents 44 (47.3%) replied that modern issues and matters were included to the material and given to trainees. Significant number of respondents 30 (32.4%) strongly agree with the question of relevance of training intention. This shows it should be highly appreciated and be supported by concerned body to make more relevant objective while any training given for the employees.

In the table above, 44 (47.3%) percentage of respondents said that there is clear statement of training objective and the objective was in line with the vision of wollega university which is "to be among the top 25 universities at 2015" and 33 (35.6%) replied that they are strong agreement with the existence of clear goal setting before embarking training session.

Table 4.3.



Table 4.2.2

No.	Efficiency of the training	Measurement Scale	Frequency	Percentage
1	The way the trainer facilitate the trainings were attractive and exemplary	SDA	4	4.3
		DA	3	3.2
		N	11	11.8
		A	68	73.1
		SA	7	7.5
2	The trainings were conducted in freely participatory manner	SDA	4	4.3
		DA	5	5.4
		N	7	7.5
		A	70	75.3
		SA	7	7.5
3	There is some practical demonstration in the training	SDA	7	7.5
		DA	1	1.1
		N	13	14.0
		A	60	64.5
		SA	12	12.9
4	There was proper follow-up from the trainers as far as all the topic under discussion were concerned in the training	SDA	5	5.4
		DA	5	5.4
		N	38	40.9
		A	45	48.4
		SA	-	-
5	The trainers have valued the commonly settled rules in the training like the starting and closing time (Time management)	SDA	8	8.6
		DA	27	29.0
		N	9	9.7
		A	16	17.2
		SA	33	35.5
6	The trainers have detail knowledge of the training so that they have systematically and easily handled it	SDA	5	5.4
		DA	39	41.9
		N	9	9.7
		A	37	39.8
		SA	3	3.2
7	There were well organized training manuals distributed to that trainees	SDA	11	11.8
		DA	2	2.2
		N	45	48.4
		A	35	37.6
		SA	-	-
8	The trainers used understandable Languages for targets	SDA	-	-
		DA	4	4.3
		N	30	32.3
		A	59	63.4
		SA	-	-
9	Adequate feedbacks were taken from the trainees at the end each trainings	SDA	13	14.0
		DA	58	62.4
		A	13	14.0
		SA	9	9.7

Source: Researchers own computation from survey result (2018).

NB: Strongly Disagree refers to (SDA), Disagree refers to (DA), Undecided refers to (N), Agree refers to (A), Strongly Agree refers to (SA), F- refers to frequency, % - refers to percentage

As it can be observed from the table above, majority of the respondents 68 (73.1%) did say agree, with the statement saying "the way the trainer facilitate

the trainings were attractive and exemplary". Hence, the result indicates that the ways trainers facilitate the training session were appropriate. Another significant

number of respondents 11 (11.8%) said neutral to the stated statement.

As depicted in the table 4.3 above, 70 (75.3%) percentage of respondents replied that the trainings in Wollega University were conducted in freely participatory manner. This means most of the training given in WU was very participative and has the session open for discussion and comment. Another 4 (4.3%) shown their degree of disagreement to the stated statement above saying they are strongly disagree with the statement. This implies, though the response of majority respondents shows better result, it does not mean that all works have been completed because significant number of respondents tell that yet many works left to ensure training session more attractive and exemplary.

As shown in the on top of table, 48(53.6%) of the respondents made known their level of agreement with the statement that there was appropriate follow-up from the trainers as far as all the topic under discussion were concerned in the training. Differently 38 (41.2%) of respondents are shown their level of agreement saying they neutral to the statement. That means they have nothing to say whether there was sufficient appropriate follow-up from the trainers or not. This indicates that more to do to regarding mechanism and implementation of proper follow-up system.

Another important variable in the above table 4.3 is the issue of "trainers have detail knowledge of the training so that they have systematically and easily handled it". For that matter majority of respondents 39 (41.9%) replied they are disagree with trainers have detail knowledge of the training so that they have

systematically and easily handled it. Another significant number of respondents 37 (39.3%) replied that they have nothing to say in this regard. This implies they have reservation on knowledge of trainers. Therefore, respondent's response depicts many things to do while searching and selecting trainers for different training programs and better mechanism could be designed and in place beyond enabling existing employ.

As depicted in the above table 4.3 majority of respondents 45 (48.4%) shown their willingness level saying neutral to the statement "There were well organized training manuals distributed to that trainees". This depicts there were no training manual and material distributed to trainee before and after training session. Another important variable is the issue of "trainers used understandable Languages for targets or not" majority of respondents 59 (63.4%) replied that trainers used clear training language during training session.

Another most important question was "adequate feedbacks were taken from the trainees at the end each training?." For that matter respondents response 58 (62.8%) depicts that participants are disagree with the question of whether there was Adequate feedbacks were taken from the trainees at the end each trainings. The result of training outcome , along with suggestions for improvement , should be communicated to the appraised as soon as possible .the skill with which the trainers handles the training feedback is the factor in determining whether the training program is effective in changing employee behavior or not.

Table 4.4

No.	Adequacy of facility	Measurement Scale	Frequency	Percentage
1	The room in which I have taken the training were motivating	SDA	37	39.8
		DA	30	32.3
		N	11	11.8
		A	10	10.8
		SA	5	5.4
2	Adequate stationeries were provided in the training program I have participated in	SDA	8	8.6
		DA	56	60.2
		N	7	7.5
		A	12	12.9
		SA	10	10.8
3	There is adjusted LCD and proper electric power in the room where I have taken the training	SDA	1	1.1
		DA	27	29.0
		N	7	7.5
		A	34	36.6
		SA	24	25.8
4	There were Suitable seats and arrangements	SDA	3	3.2
		DA	57	61.3
		N	1	1.1
		A	19	20.4
		SA	13	14.0

5	Adequate infrastructure like projector, flipchart were used	SDA	1	1.1
		DA	60	64.5
		A	18	19.4
		SA	14	15.1
6	Suitable location/ selected for practical training parts	SDA	29	31.2
		DA	12	12.9
		N	1	1.1
		A	45	48.4
		SA	6	6.5

Source: Researchers own computation from survey result (2018).

NB: Strongly Disagree refers to (SDA), Disagree refers to (DA), Undecided refers to (N), Agree refers to (A), Strongly Agree refers to (SA), F- refers to frequency, % - refers to percentage

As shown in the table 4.4 above, greater part of the respondent's response 37 (39.8%) depicts the room in which training have been given were not appropriate and fully equipped and motivating. The respondents shown their level of agreement in a way, they are strongly disagree with the statement mentioned in the first variable of above table 4.4 and 30 (32.7%) of the replied that they are disagree with the statement.

An additional very important question asked was about "adequacy stationeries were provided" in this regard majority replied that 56 (62.1%) there was no sufficient training materials, manuals and stationeries provided during the given training session. With the concern of availability and adjustment of adjusted LCD and proper electric power in the room, majority of sample taken response 34 (36.7%) agreed with the above mentioned statement. That means training rooms have necessary adjustment and power installation.

As known seating arrangement and quality in terms of conformance plays a significant role in making training session more effective. As per the data collected and tabulated in the table above, majority of respondents response 57 (61.4%) depicts there were no suitable seats and arrangements in the training rooms. They replied that types and quality of seats as well as the arrangement is not in the appropriate manner as per observed data. Another variable were Suitable location/ selected for practical training parts issues. In this context majority response 45 (48.5%) shows that suitable location was selected for practical training session by trainers.

Table 4.5

No.	Outputs of the training /performance related variables	Measurement Scale	Frequency	Percentage
1	The training results in attitude changes towards my daily work	SDA	1	1.1
		DA	4	4.3
		N	8	8.6
		A	62	66.7
		SA	18	19.4
2	The training fills some of the skill gaps I have encountered in my work	SDA	1	1.1
		DA	26	28.0
		N	11	11.8
		A	46	49.5
		SA	9	9.7
3	The training I have taken enables me for efficient utilization of the university's resource to accomplish my work easily	SDA	5	5.4
		DA	52	55.9
		N	5	5.4
		A	24	25.8
		SA	7	7.5
4	The training motivates me to participate in different university affairs	SDA	5	5.4
		DA	3	3.2
		N	6	6.5
		A	69	74.2
		SA	10	10.8
5	The training capacitates me to carry out my work efficiently and effectively	SDA	1	1.1
		DA	1	1.1
		N	30	32.3
		A	44	47.3
		SA	17	18.3
6	I have received proper certificate	SDA	18	19.4
		DA	28	30.1
		N	15	16.1
		A	6	6.5
		SA	26	28.0
7	I have got thorough understanding on how to contribute to the mission of Wollega University	SDA	1	1.1
		DA	3	3.2
		N	5	5.4
		A	73	78.5
		SA	11	11.8
8	What is the improvement in productivity after your training programme?	90% -100%	8	8.6
		75% - 90%	47	50.5
		50% - 75%	35	37.6
		Below 50%	3	3.2

Source: Researchers own computation from survey result (2018).

NB: Strongly Disagree refers to (SDA), Disagree refers to (DA), Undecided refers to (N), Agree refers to (A), Strongly Agree refers to (SA), F- refers to frequency, % - refers to percentage

As one can see from the table 4.5 above, majority of the respondents 62 (66.7%) replied that training given by the university has helped them to motivate, alter their behavior In a way they can attain the goal of the organization as well as themselves. One more considerable number 46 (49.3%) of respondents

shown their level of agreement to the statement that training fills some of the skill gaps they have encountered in their work.

Another variable inculcated in the question was the issue of impact of training to enhance employee's efficiency. Concerning this majority of the respondents

52 (55.8%) replied that the training they have taken didn't enable them for efficient utilization of the university's resource to accomplish their work easily. This might be due to the fact that types of training given were not attitudinal in content and design.

The other variable in the table presented for discussion was "training capacitates me to carry out my work efficiently and effectively" for that matter respondents 44 (47.4%) replied the training given capacitate them to be more efficient and effective on their actual job assigned to them. Similarly, another significant number of respondents 28 (30.1%) replied that they didn't given certificate. In other words, participants of different training given by Wollega University were not certified or given recognition.

The above table depicts the majority of respondents 73 (78.5%) agreed with the statement that asks "I have got thorough understanding on how to contribute to the mission of Wollega University". This implies training given by Wollega University has been served for creating clear vision in the mind of an employee. Thus, better enhance yet what is going on and more work on employee's efficiency and effectiveness.

Another important area and big objective of this study was measuring level of productivity improved after given through training programme. In this regard, majority 47 (51.6%) evident that their productivity improved from 75-90% after given different training. Other significant percentage 30 (35.7%) replied that their productivity increased from 50-75%. This implies that training has significant impact on the productivity, loyalty, commitment, motivation and reduction of turnover rate at Wollega University.



Table 4.6: Pearson correlation table

Correlations

	The room in which I have taken the training were motivating	Adequate stationeries were provided in the training program I have participated in	There is adjusted LCD and proper electric power	There were Suitable seats and arrangements	Adequate infrastructure like projector, flipchart were used	Suitable location/ practical training parts	The training results in attitude changes towards my daily work	The training fills some of the skill gaps I have encountered in my work	The training enables me for efficient utilization of university's resource	The training motivates me to participate in different university affairs	The training capacitates me to carry out my work	I have received proper certificate	I have got thorough understanding on how to contribute to the mission of Wollega University	Productivity
Pearson Correlation Sig. (2-tailed) N	1 .037 93	.274** .008 93	.037 .724 93	.244* .019 93	.618** .000 93	.325** .001 93	-.121 .249 93	-.101 .336 93	.500** .000 93	-.253* .014 93	.321** .002 93	-.363** .000 93	-.368** .000 93	-.201 .053 93
Pearson Correlation Sig. (2-tailed) N	.274** .008 93	1 .001 93	.338** .001 93	.689** .000 93	.668** .000 93	.455** .000 93	.285** .006 93	.606** .000 93	.737** .000 93	.353** .001 93	.531** .000 93	-.222* .033 93	.605** .000 93	-.368** .000 93
Pearson Correlation Sig. (2-tailed) N	.037 .724 93	.338** .001 93	1 .000 93	.541** .000 93	.550** .000 93	-.329** .001 93	.166 .111 93	.781** .000 93	.577** .000 93	-.192 .066 93	.143 .173 93	.178 .088 93	.025 .815 93	.189 .070 93
Pearson Correlation Sig. (2-tailed) N	.244* .019 93	.689** .000 93	.541** .000 93	1 .000 93	.713** .000 93	.493** .000 93	.046 .664 93	.510** .000 93	.752** .000 93	-.054 .606 93	.541** .000 93	-.291** .005 93	.302** .003 93	-.515** .000 93
Pearson Correlation Sig. (2-tailed) N	.618** .000 93	.668** .000 93	.550** .000 93	.713** .000 93	1 .000 93	.356** .000 93	.130 .213 93	.462** .000 93	.823** .000 93	-.071 .498 93	.559** .000 93	-.380** .000 93	.035 .738 93	-.200 .054 93
Pearson Correlation Sig. (2-tailed) N	.325** .001 93	.455** .000 93	-.329** .001 93	.493** .000 93	.356** .000 93	1 .000 93	.129 .218 93	-.246* .018 93	.393** .000 93	.159 .127 93	.700** .000 93	-.627** .000 93	.313** .002 93	-.798** .000 93
Pearson Correlation Sig. (2-tailed) N	-.121 .249 93	.285** .006 93	.664 .664 93	.664 .664 93	.130 .213 93	.129 .218 93	1 .000 93	.218* .036 93	.061 .560 93	.700** .000 93	.518** .000 93	.038 .717 93	.483** .000 93	-.397** .000 93
Pearson Correlation Sig. (2-tailed) N	-.101 .336 93	.606** .000 93	.781** .000 93	.510** .000 93	.462** .000 93	.393** .000 93	.218* .036 93	1 .000 93	.589** .000 93	.224* .031 93	.147 .159 93	.386** .000 93	.435** .000 93	.111 .290 93

The training I have taken enables me for efficient utilization of the university's resource to accomplish my work easily	.500**	.737**	.577**	.752**	.823**	.393**	.061	.589**	1	-.103	.605**	-.322**	.231*	-.259*
	.000	.000	.000	.000	.000	.000	.560	.000		.324	.000	.002	.026	.012
	93	93	93	93	93	93	93	93	93	93	93	93	93	93
The training motivates me to participate in different university affairs	-.253*	.353**	-.192	-.054	-.071	.159	.700**	.224*	-.103	1	.409**	.239*	.757**	-.399**
	.014	.001	.066	.606	.498	.127	.000	.031	.324		.000	.021	.000	.000
	93	93	93	93	93	93	93	93	93	93	93	93	93	93
The training capacitates me to carry out my work	.321**	.531**	.143	.541**	.559**	.700**	.518**	.147	.605**	.409**	1	-.433**	.491**	-.740**
	.002	.000	.173	.000	.000	.000	.000	.159	.000	.000		.000	.000	.000
	93	93	93	93	93	93	93	93	93	93	93	93	93	93
I have received proper certificate	-.363**	-.222*	.178	-.291**	-.380**	-.627**	.038	.386**	-.322**	.239*	-.433**	1	.146	.253*
	.000	.033	.088	.005	.000	.000	.717	.000	.002	.021	.000		.164	.014
	93	93	93	93	93	93	93	93	93	93	93	93	93	93
I have got thorough understanding on how to contribute to the mission of Wollega University	-.368**	.605**	.025	.302**	.035	.313**	.483**	.435**	.231*	.757**	.491**	.146	1	-.474**
	.000	.000	.815	.003	.738	.002	.000	.000	.026	.000	.000	.164		.000
	93	93	93	93	93	93	93	93	93	93	93	93	93	93
Productivity	-.201	-.368**	.189	-.515**	-.200	-.798**	.111	.397**	-.259**	-.399**	-.740**	.253*	-.474**	1
	.053	.000	.070	.000	.054	.000	.290	.290	.012	.000	.000	.014	.000	
	93	93	93	93	93	93	93	93	93	93	93	93	93	93

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

The above table 4.6 depicts the relation between different variables employed to measure impact of training on employees' performance at Wollega University. The room in which training has taken were significantly correlated with (sig=000) with I have got thorough understanding on how to contribute to the mission of Wollega University. The training motivates me to participate in different university affair is highly correlated (sig=001) with Adequate stationeries was provided in the training program I have participated in. Thus, productivity is significantly correlated with almost all variables. Productivity is significantly correlated (sig=0012) with number of training given. Significantly correlated (sig=002) with received certificate. This implies weather training room is comfortable or nor it can't add value on individuals understanding level means. Besides the above data implication number of training given, clarity training objective, practical training sessions has significant positive relationship (sig=001) with employee productivity or job performance.

In general majority of the variable employed to describe and measure training impact has positive correlation with each other. Hence, it's the right variable to measure the impact as well as to describe the topic understudy in a better manner.

## CHAPTER FIVE

### V. CONCLUSION AND RECOMMENDATIONS

In this chapter conclusions of the research findings that have been analyzed and discussed in the previous chapter are briefly present conclusions and recommendation are made.

#### a) Conclusion

The organization has training and development programs; however, they were unsuccessful in assessing training needs, setting performance objective, in searching aids for internal and external training and development, planning training strategies and preparing training schedules and modules as well as assessing training and development efforts.

- This study reveals a diverse aspect of a practical operation of human resource management related to employee training, career and performance. The symmetric measures have shown a strong association between years of experience in current organization and the probability of being trained while on job.
- There is a significant association between the fact that an employee has been trained and his/her age, education level and job experience. However, employee's age and job experience being strongly associated can induce a confounding factor in the triple association. It is also agreed that employees who are not trained fear to lose their job by lack of required performance.

- It was attested that employees perform better only when they feel belongingness and given more training. The study has observed strong correlation between being trained and has better organization performance.
- Trained employees were more willing to continue working in the same organization after being trained than those who are not yet trained. Once an employee is trained, he performs better, he is assured of being promoted to higher responsibilities and he is willing to staying longer in the current organization.
- The study revealed that there is not feedback given after completion of training session. Feedback is the fundamental ground for the existence of learning. Once an employee is trained, he gains opportunity to enhance his performance, his current job has direct impact on achieving the organizational objectives, his job performance outcomes are consistent with the goals of the organization and his good performance on his job gives him/her formal appreciation by the higher ups.
- It was revealed that training given by Wollega University didn't alter employees' attitude hence, there should be types of training which is attitudinal in nature.
- Another big result obtained through this study was trainer's knowledge gap observed and respondents have a reservation in this regard.
- Training rooms were not fully equipped, appropriate and attractive at Wollega University.
- On-job training gives full satisfaction to trained employees. All the satisfactions requirement and level are strongly and positively correlated to the on-job training. Altogether this research makes an effort signifying a substantial positive contribution by employee training to job performance. Generally, the findings of this study were found reliable with the studies conducted by other researchers on the contribution of human resource practices related to on the job training and job performance.

#### b) Recommendations

Up on the findings of the study the researcher forwarded the following recommendations;

- ❖ There should be post training feedback. Feedback can be for three reasons to modify training session, to take for the next as cycle as it is, or to change the program for the next.
- ❖ Attitudinal change type of training program should be organized and given by Wollega University since it was concluded that employees have attitudinal problem or lack of commitment and have negative feeling to contribute.
- ❖ The university should pay attention while searching and selecting trainers because there is reservation

from trainees regarding knowledge, skills and ability of trainers.

- ❖ The university should equip with necessary facility, seating arrangements, and intra/internet facility to make training room gorgeous and attractive.
- ❖ The university should work on training needs identification, preparation of training materials and training manuals. For that matter there could be timely, objective, clear and standard based performance evaluation since performance evaluation is a ground for training need identification.
- ❖ As per the data Wollega university is better in providing different training for its employee but it lack evaluating result/output obtained because of the given training hence, WU should continuously evaluate or collect feedback after every training session held at university after all.
- ❖ Training and development unit should be restructured in away it can discharge its responsibility of identifying training needs, preparing training materials, training manuals, establish training policy and procedure, have performance evaluation on hand, evaluate and provide post training session feedback and given mandate of enhancing training impact of wollega university on employee performance at large.

### ACKNOWLEDGEMENTS

Several people have been helpful throughout the whole process. I would like to extend my special thanks to Almighty God be with me throughout the period of my studies time.

I would also like to express my sincere gratitude to my supervisor Professor *Kumar Bas Das* and my supervising unit head management department, HoD for their suggestions and inspiration throughout the writing of this academic research. The accomplishment of this work would not have been possible without their valuable guidance, coach, advice and support.

I am greatly thankful to my affectionate wife, *Miss. Mergitu Temesgen*, my parents, my peers for their support monetarily and giving ideas throughout this research work. Very special thanks to Wollega University Academic wing, Academic Staffs and University management in general.

#### List of acronyms

WU=Wollega university

T&D= Training and Development

PA=Performance Appraisal

OJT=On the job training

OFJT=of the job training

TM=Training manual

HoD=Head of Department

CoBE=College of Business and Economics

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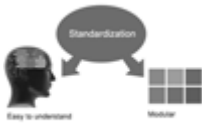
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**The individual Fellow and Associate designations accredited by Open Association of Research Society (US) credentials signify guarantees following achievements:**

- The professional accredited with Fellow honor, is entitled to various benefits viz. name, fame, honor, regular flow of income, secured bright future, social status etc.



- In addition to above, if one is single author, then entitled to 40% discount on publishing research paper and can get 10% discount if one is co-author or main author among group of authors.
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- • This individual has learned the basic methods of applying those concepts and techniques to common challenging situations. This individual has further demonstrated an in-depth understanding of the application of suitable techniques to a particular area of research practice.

### Note :

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- In future, if the board feels the necessity to change any board member, the same can be done with the consent of the chairperson along with anyone board member without our approval.
- In case, the chairperson needs to be replaced then consent of 2/3rd board members are required and they are also required to jointly pass the resolution copy of which should be sent to us. In such case, it will be compulsory to obtain our approval before replacement.
- In case of “Difference of Opinion [if any]” among the Board members, our decision will be final and binding to everyone.

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# PREFERRED AUTHOR GUIDELINES

**We accept the manuscript submissions in any standard (generic) format.**

We typeset manuscripts using advanced typesetting tools like Adobe In Design, CorelDraw, TeXnicCenter, and TeXStudio. We usually recommend authors submit their research using any standard format they are comfortable with, and let Global Journals do the rest.

Alternatively, you can download our basic template from <https://globaljournals.org/Template.zip>

Authors should submit their complete paper/article, including text illustrations, graphics, conclusions, artwork, and tables. Authors who are not able to submit manuscript using the form above can email the manuscript department at [submit@globaljournals.org](mailto:submit@globaljournals.org) or get in touch with [chiefeditor@globaljournals.org](mailto:chiefeditor@globaljournals.org) if they wish to send the abstract before submission.

## BEFORE AND DURING SUBMISSION

Authors must ensure the information provided during the submission of a paper is authentic. Please go through the following checklist before submitting:

1. Authors must go through the complete author guideline and understand and *agree to Global Journals' ethics and code of conduct*, along with author responsibilities.
2. Authors must accept the privacy policy, terms, and conditions of Global Journals.
3. Ensure corresponding author's email address and postal address are accurate and reachable.
4. Manuscript to be submitted must include keywords, an abstract, a paper title, co-author(s) names and details (email address, name, phone number, and institution), figures and illustrations in vector format including appropriate captions, tables, including titles and footnotes, a conclusion, results, acknowledgments and references.
5. Authors should submit paper in a ZIP archive if any supplementary files are required along with the paper.
6. Proper permissions must be acquired for the use of any copyrighted material.
7. Manuscript submitted *must not have been submitted or published elsewhere* and all authors must be aware of the submission.

## Declaration of Conflicts of Interest

It is required for authors to declare all financial, institutional, and personal relationships with other individuals and organizations that could influence (bias) their research.

## POLICY ON PLAGIARISM

Plagiarism is not acceptable in Global Journals submissions at all.

Plagiarized content will not be considered for publication. We reserve the right to inform authors' institutions about plagiarism detected either before or after publication. If plagiarism is identified, we will follow COPE guidelines:

Authors are solely responsible for all the plagiarism that is found. The author must not fabricate, falsify or plagiarize existing research data. The following, if copied, will be considered plagiarism:

- Words (language)
- Ideas
- Findings
- Writings
- Diagrams
- Graphs
- Illustrations
- Lectures



- Printed material
- Graphic representations
- Computer programs
- Electronic material
- Any other original work

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1. Substantial contributions to the conception and acquisition of data, analysis, and interpretation of findings.
2. Drafting the paper and revising it critically regarding important academic content.
3. Final approval of the version of the paper to be published.

### Changes in Authorship

The corresponding author should mention the name and complete details of all co-authors during submission and in manuscript. We support addition, rearrangement, manipulation, and deletions in authors list till the early view publication of the journal. We expect that corresponding author will notify all co-authors of submission. We follow COPE guidelines for changes in authorship.

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### Appealing Decisions

Unless specified in the notification, the Editorial Board's decision on publication of the paper is final and cannot be appealed before making the major change in the manuscript.

### Acknowledgments

Contributors to the research other than authors credited should be mentioned in Acknowledgments. The source of funding for the research can be included. Suppliers of resources may be mentioned along with their addresses.

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## PREPARING YOUR MANUSCRIPT

Authors can submit papers and articles in an acceptable file format: MS Word (doc, docx), LaTeX (.tex, .zip or .rar including all of your files), Adobe PDF (.pdf), rich text format (.rtf), simple text document (.txt), Open Document Text (.odt), and Apple Pages (.pages). Our professional layout editors will format the entire paper according to our official guidelines. This is one of the highlights of publishing with Global Journals—authors should not be concerned about the formatting of their paper. Global Journals accepts articles and manuscripts in every major language, be it Spanish, Chinese, Japanese, Portuguese, Russian, French, German, Dutch, Italian, Greek, or any other national language, but the title, subtitle, and abstract should be in English. This will facilitate indexing and the pre-peer review process.

The following is the official style and template developed for publication of a research paper. Authors are not required to follow this style during the submission of the paper. It is just for reference purposes.





### ***Manuscript Style Instruction (Optional)***

- Microsoft Word Document Setting Instructions.
- Font type of all text should be Swis721 Lt BT.
- Page size: 8.27" x 11", left margin: 0.65, right margin: 0.65, bottom margin: 0.75.
- Paper title should be in one column of font size 24.
- Author name in font size of 11 in one column.
- Abstract: font size 9 with the word "Abstract" in bold italics.
- Main text: font size 10 with two justified columns.
- Two columns with equal column width of 3.38 and spacing of 0.2.
- First character must be three lines drop-capped.
- The paragraph before spacing of 1 pt and after of 0 pt.
- Line spacing of 1 pt.
- Large images must be in one column.
- The names of first main headings (Heading 1) must be in Roman font, capital letters, and font size of 10.
- The names of second main headings (Heading 2) must not include numbers and must be in italics with a font size of 10.

### ***Structure and Format of Manuscript***

The recommended size of an original research paper is under 15,000 words and review papers under 7,000 words. Research articles should be less than 10,000 words. Research papers are usually longer than review papers. Review papers are reports of significant research (typically less than 7,000 words, including tables, figures, and references)

A research paper must include:

- a) A title which should be relevant to the theme of the paper.
- b) A summary, known as an abstract (less than 150 words), containing the major results and conclusions.
- c) Up to 10 keywords that precisely identify the paper's subject, purpose, and focus.
- d) An introduction, giving fundamental background objectives.
- e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition, sources of information must be given, and numerical methods must be specified by reference.
- f) Results which should be presented concisely by well-designed tables and figures.
- g) Suitable statistical data should also be given.
- h) All data must have been gathered with attention to numerical detail in the planning stage.

Design has been recognized to be essential to experiments for a considerable time, and the editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned unrefereed.

- i) Discussion should cover implications and consequences and not just recapitulate the results; conclusions should also be summarized.
- j) There should be brief acknowledgments.
- k) There ought to be references in the conventional format. Global Journals recommends APA format.

Authors should carefully consider the preparation of papers to ensure that they communicate effectively. Papers are much more likely to be accepted if they are carefully designed and laid out, contain few or no errors, are summarizing, and follow instructions. They will also be published with much fewer delays than those that require much technical and editorial correction.

The Editorial Board reserves the right to make literary corrections and suggestions to improve brevity.



## FORMAT STRUCTURE

***It is necessary that authors take care in submitting a manuscript that is written in simple language and adheres to published guidelines.***

All manuscripts submitted to Global Journals should include:

### **Title**

The title page must carry an informative title that reflects the content, a running title (less than 45 characters together with spaces), names of the authors and co-authors, and the place(s) where the work was carried out.

### **Author details**

The full postal address of any related author(s) must be specified.

### **Abstract**

The abstract is the foundation of the research paper. It should be clear and concise and must contain the objective of the paper and inferences drawn. It is advised to not include big mathematical equations or complicated jargon.

Many researchers searching for information online will use search engines such as Google, Yahoo or others. By optimizing your paper for search engines, you will amplify the chance of someone finding it. In turn, this will make it more likely to be viewed and cited in further works. Global Journals has compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

### **Keywords**

A major lynchpin of research work for the writing of research papers is the keyword search, which one will employ to find both library and internet resources. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining, and indexing.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy: planning of a list of possible keywords and phrases to try.

Choice of the main keywords is the first tool of writing a research paper. Research paper writing is an art. Keyword search should be as strategic as possible.

One should start brainstorming lists of potential keywords before even beginning searching. Think about the most important concepts related to research work. Ask, "What words would a source have to include to be truly valuable in a research paper?" Then consider synonyms for the important words.

It may take the discovery of only one important paper to steer in the right keyword direction because, in most databases, the keywords under which a research paper is abstracted are listed with the paper.

### **Numerical Methods**

Numerical methods used should be transparent and, where appropriate, supported by references.

### **Abbreviations**

Authors must list all the abbreviations used in the paper at the end of the paper or in a separate table before using them.

### **Formulas and equations**

Authors are advised to submit any mathematical equation using either MathJax, KaTeX, or LaTeX, or in a very high-quality image.

### **Tables, Figures, and Figure Legends**

Tables: Tables should be cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g., Table 4, a self-explanatory caption, and be on a separate sheet. Authors must submit tables in an editable format and not as images. References to these tables (if any) must be mentioned accurately.



## Figures

Figures are supposed to be submitted as separate files. Always include a citation in the text for each figure using Arabic numbers, e.g., Fig. 4. Artwork must be submitted online in vector electronic form or by emailing it.

## PREPARATION OF ELECTRONIC FIGURES FOR PUBLICATION

Although low-quality images are sufficient for review purposes, print publication requires high-quality images to prevent the final product being blurred or fuzzy. Submit (possibly by e-mail) EPS (line art) or TIFF (halftone/ photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Avoid using pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings). Please give the data for figures in black and white or submit a Color Work Agreement form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution at final image size ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs): >350 dpi; figures containing both halftone and line images: >650 dpi.

Color charges: Authors are advised to pay the full cost for the reproduction of their color artwork. Hence, please note that if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a Color Work Agreement form before your paper can be published. Also, you can email your editor to remove the color fee after acceptance of the paper.

## TIPS FOR WRITING A GOOD QUALITY MANAGEMENT RESEARCH PAPER

Techniques for writing a good quality management and business research paper:

**1. Choosing the topic:** In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

**2. Think like evaluators:** If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

**3. Ask your guides:** If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

**4. Use of computer is recommended:** As you are doing research in the field of management and business then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

**5. Use the internet for help:** An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow here.



**6. Bookmarks are useful:** When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

**7. Revise what you wrote:** When you write anything, always read it, summarize it, and then finalize it.

**8. Make every effort:** Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

**9. Produce good diagrams of your own:** Always try to include good charts or diagrams in your paper to improve quality. Using several unnecessary diagrams will degrade the quality of your paper by creating a hodgepodge. So always try to include diagrams which were made by you to improve the readability of your paper. Use of direct quotes: When you do research relevant to literature, history, or current affairs, then use of quotes becomes essential, but if the study is relevant to science, use of quotes is not preferable.

**10. Use proper verb tense:** Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

**11. Pick a good study spot:** Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

**12. Know what you know:** Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

**13. Use good grammar:** Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice. Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

**14. Arrangement of information:** Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

**15. Never start at the last minute:** Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

**16. Multitasking in research is not good:** Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

**17. Never copy others' work:** Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

**18. Go to seminars:** Attend seminars if the topic is relevant to your research area. Utilize all your resources.

**19. Refresh your mind after intervals:** Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

**20. Think technically:** Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.



**21. Adding unnecessary information:** Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn't be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

**22. Report concluded results:** Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

**23. Upon conclusion:** Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium through which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

## INFORMAL GUIDELINES OF RESEARCH PAPER WRITING

### **Key points to remember:**

- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

### **Final points:**

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

*The introduction:* This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

### **The discussion section:**

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

### **General style:**

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

**To make a paper clear:** Adhere to recommended page limits.

### *Mistakes to avoid:*

- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.





- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
- Avoid use of extra pictures—include only those figures essential to presenting results.

#### **Title page:**

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

**Abstract:** This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

*Reason for writing the article—theory, overall issue, purpose.*

- Fundamental goal.
- To-the-point depiction of the research.
- Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

#### **Approach:**

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

#### **Introduction:**

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.

*The following approach can create a valuable beginning:*

- Explain the value (significance) of the study.
- Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- Briefly explain the study's tentative purpose and how it meets the declared objectives.



**Approach:**

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

**Procedures (methods and materials):**

This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

**Materials:**

*Materials may be reported in part of a section or else they may be recognized along with your measures.*

**Methods:**

- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

**Approach:**

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

**What to keep away from:**

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.

**Results:**

The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.



**Content:**

- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

**What to stay away from:**

- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

**Approach:**

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

**Figures and tables:**

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The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

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Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
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- Recommendations for detailed papers will offer supplementary suggestions.



**Approach:**

When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.

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<i>References</i>	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring



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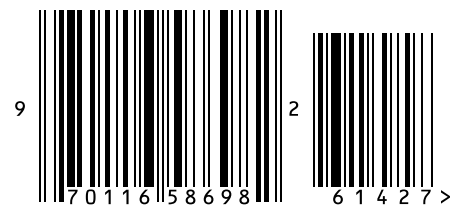




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ISSN 9755853

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