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THE IMPACT OF PUBLIC EXPENDITURE ON THE HEALTH SECTOR ON ECONOMIC GROWTH IN ALGERIA

أثر النفقات العامة لقطاع الصحة علي النمو الاقتصادي في الجزائر

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Abstract:

The purpose of this research is to show clearly and modestly how public health spending, in the era of massive economic liberalization processes, can play an active and positive role in economic growth.

According to LUCA the structural role of the state can favor the accumulation of human capital. In addition, favorable support policies can have a lasting impact on economic growth.

The study of these different variables of economic growth policies is therefore very important in Algeria. To result in this, we have examined a multitude of models that deal with this object. We have concluded with econometric modeling that public health spending has no influence on economic growth in Algeria because of the neglect of human capital by the state.

Keywords: Economic policy; budgetary policy; Public expenditure on health; Economic growth; Econometric modeling.

JEL Classification Codes: A20 ،I18 ،F43

ملخص:

الهدف من هذا البحث هو معرفة مدي تأثير نفقات قطاع الصحة في عصر عملية التحرير الاقتصادي الهائلة , التي يمكن أن تلعب دورا ايجابيا في تحقيق النمو الاقتصادي, كما تطرق LUCA إلي الدور الهيكلي للدولة التي يمكن أن تستعين بالموارد البشرية, مع تطبيق سياسات اقتصادية مصاحبة لها و التي يمكن أن يكون لها تأثير دائم علي النمو الاقتصادي .

من خلال هذه الدراسة قمنا بالتطرق إلي مختلف المتغيرات الاقتصادية المصاحبة لنفقات الصحة و التي تمثل حلقة مهمة في الجزائر ,و من أجل ذالك قمنا بدراسة تحليلية و قياسية مع إضافة بعض المتغيرات الشرطية حسب بعض التقارير, و التي أفرجت عن لا وجود لأثر النفقات الصحة علي النمو الاقتصادي في الجزائر وذالك راجع إلي عدم إعطاء الدولة الأهمية لتنمية الموارد البشرية.

كلمات مفتاحية: السياسة الاقتصادية.، سياسة الموازنة.، نفقات الصحة.، النمو الاقتصادي.، دراسة قياسية.

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INTRODUCTION:

Research on fiscal policy and economic growth has always been a very important point of economic thought. It has been and will be constantly the subject of debate, controversy and revolutions.

The State becomes involved directly in the economy by public expenditure, by collecting taxes and by debts in different ways. All these actions constitute the field of fiscal policy.

The effect of fiscal policy on economic growth is a controversial area. The analysis of the effects of public spending on economic growth is a long-standing issue and the most noticeable position it occupies in the economic literature.Health spending measures the final consumption of health care goods and services;

According to Musgrave,

" Public expenditure can serve three functions: a resource allocation function (to finance public goods and services), a redistribution function (to correct inequalities) and a macroeconomic stabilization function (to smooth out cyclical changes in activity) ".

In this article, we try to analyze the impact of fiscal policy on economic growth and how the rate of economic growth can reduce the unemployment rate in Algeria during the period 1980/2019, when the state followed a policy of an economic recovery by including these programs driven by mechanisms and by adopting the National Development Plan, non-centralized sector programs and communal programs in several fields.

The objective of this work is to study the utility and effectiveness of public health expenditure using data from the Algerian economy; In other words, to identify public spending on health that is conducive to economic growth.

Consequently and for that reason, we have chosen the fundamental question which is:

To what extent can public spending on health promote economic growth in Algeria?

The hypothesis on which our research will be based is as follows:

The answer to our problem can be found by verifying the following hypothesis which assumes that public spending is positively affecting the rate of economic growth in Algeria.

Through this hypothesis, we try to see the positive influence of fiscal policy or, more precisely, the effects of public spending on health as a percentage of GDP on economic growth in Algeria. To answer this question we have organized our work in three stages.

1. EMPIRICAL APPROACHES:

In this work, we will provide a theoretical panorama of the different conceptions of public spending that have prevailed in macroeconomic thinking. Indeed, following a chronological order: to the dogma of the budgetary equilibrium established by classical economists, such as Adam Smith, Jean Say and David Ricardo. This will follow the vision of the spending deficit of John KEYNES, favoring the debt of the state to revive the economy.

The Keynesian vision of budgetary activism will be the basis of many theoretical reflections enriching the initial contribution of KEYNES. Nevertheless, the arguments developed first by the monetarists and then by the new classical school have widely cast doubt

on the effectiveness of budgetary policies to manage demand. Thus, the monetarist current of Milton Friedman will develop the theory of permanent income, criticize the Philips curve, insist on the existence of delays inherent in fiscal policy and reinterpret the IS-LM model by highlighting the predatory effect.

From the empirical point of view, many studies have been carried out; the treatment of our research problem has actually started with the founding works. barro (1974) insisted more particularly on fiscal policy, which was marked by the enrichment of economic theory that deals with the evaluation of the effectiveness of economic policy in the context of rational expectations.

Later in 1990, it has for the first time stated clearly and exactly a model in which it studies theoretically and explicitly the effects of public investment expenditure on long-term economic growth. Its model which is based on public investment expenditures has the effect that these latest have an auspicious impact on economic growth and have a propitious effect on private sector productivity.

2. APPLICATION OF THE METHOD OF ANALYSIS IN MAIN COMPONENTS ON ALGERIA

This step is devoted to the Principal Component Analysis method which uses the software and which permits us to obtain more accurate results than those of the descriptive analysis. We will proceed to compare the results obtained by the two approaches.

Descriptive statistics for the spending range of the public health sector

Table (1): Evolution and distribution of the different spending ranges of the public health sector from 1980 to 2019

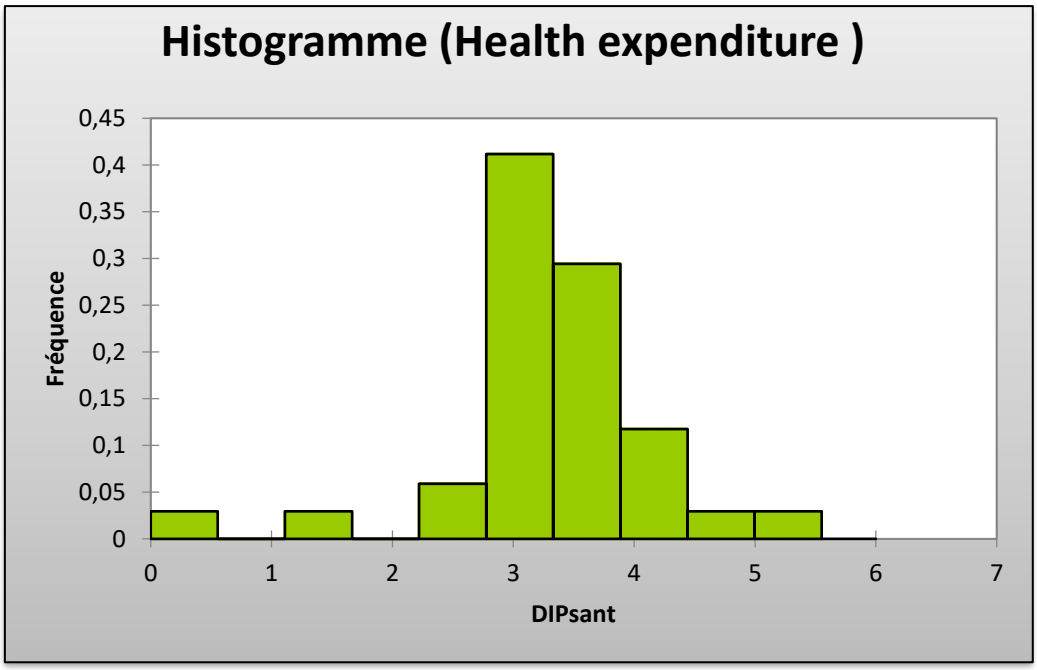
Borne inférieur	orne supérieur	Effectif	Fréquence	Densité
0	0,55516067	1	0,029	0,053
0,55516067	1,11032135	0	0,000	0,000
1,11032135	1,66548202	1	0,029	0,053
1,66548202	2,22064269	0	0,000	0,000
2,22064269	2,77580337	2	0,059	0,106
2,77580337	3,33096404	14	0,412	0,742
3,33096404	3,88612471	10	0,294	0,530
3,88612471	4,44128539	4	0,118	0,212
4,44128539	4,99644606	1	0,029	0,053
4,99644606	5,55160673	1	0,029	0,053

Source: Realized by the author from ONS data, Ministry of Finance by software XLSTAT

This table analyzes public health spending from 1980 to 2019. We find that the majority of health expenditure rates by the state are in the range "2.22, 4.44" with 33 observations (almost the majority of observations). This means that the state has paid little

attention to public health spending during this period. This can be shown in the following histogram:

Fig (1): Health expenditure histogram from 1980 to 2019



Source: Realized by the author from ONS data, Ministry of Finance by software XLSTAT.

3. ECONOMETRIC MODELING OF THE EFFECT OF PUBLIC HEALTH EXPENDITURES ON ECONOMIC GROWTH IN ALGERIA.

In the check of the role of public health spending on economic growth, we will attempt to transpose and to specify for the case of Algeria the model of NILOY BOSE, M. EMRANUL HAQUE, DENISE R. OSBORN (2007).

This model examines the effect of fiscal policy on economic growth for developing countries during the 1970s and 1980s, with particular emphasis on public spending.

These authors have examined the effect of fiscal policy on economic growth for developing countries in the period 1970-1980, with particular emphasis on public spending. The results of this work show that the share of expenditure in GDP is positively and significantly correlated with economic growth.

At the beginning , we will analyze and see if there is a significant correlation between the variable of interest M, with the growth after adjustment for the variables of I. To do this, we run a series of basic regressions, each of which includes all conditioning variables (I) and variables of a government expenditure (C) of the variable:

$GPC_o = \beta_0 + \sum_{i=1}^{n} \beta_i I_t + \sum_{j=1}^{n} \beta_j C_{t-1} + U_t$ (1)

GPC refers to the rate of economic growth measured by the real GDP growth rate.

In Equation 1 "I" is similar to a set of variables that condition economic growth as measured by Levine and Renelt (1992) and Barro (1991) by the log of GDP per head, enrollment rate, Private investment in GDP, the log of life expectancy and the index of political stability.

"C" encompasses the variable of interest health spending,

Health DIP: health spending

On the basis of the specification given in relation (1), we will transpose and specify the model tested to identify the effect of public expenditure by sector on economic growth in Algeria.

It is important to state precisely that the choice of the study period and the variables to be introduced under this model is limited by the availability of data for public expenditure by sector from 1980 to 2019:

$GPCo = \beta 0 + \beta 1Gt + \beta 2TSCO + \beta 3TI + \beta 4LESPV + \beta 5PIBH$ (2)

Relationship in which:

GPCo :refers to the rate of economic growth measured as the rate of real GDP growth.

GH :refers to public spending by sector (public expenditure on health).

TSCO:is the social indicator of human capital, measured by the enrollment rate in primary and secondary education.

TI:is private investment in relation to GDP;

LESPV is the life expectancy in log.

GDP: is the initial level of development measured by GDP per head in log.

It should be noted that, like the empirical work on the same model as we mentioned before, the estimation of this model is done by the ordinary least squares. The use of this technique is justified by the existence of a simultaneity bias.

In this step, we will see the effect of health spending on economic growth in relation to the conditional variables to achieve the best level of economic growth. To do this, we will follow the method of Progressive integration of the variables of conditional variables by variable until we reach all the conditional variables integrated into our model.

In this model we will study the effect of health spending on economic growth without integrating the conditional variables.The result of the DW does not give us the possibility to use the model. So this forces us to integrate the GPC (-1) into the model in order to reach a figure of the DW close to number 2.

The student test demonstrates the explanatory variables. The GPC does not explain health spending; The GPC is positively influenced by the economic growth of the previous year GPC (-1) in the order of 0.008.

For F file which is of the order of 4.48, this value is greater than 2.65 which corresponds to the average calculated per file and hence, the global model is significant and the value prob F which is: 0.01 confirms the obtained result.

For R 2 of the order of 0.23, this value is very far from 1. Therefore the variables are not correlated with each other. DW of the order of 1.99 shows that there is no autocorrelation of the errors. All the results of these tests do not give us any proof to accept this pattern.

In this pattern we will integrate the first conditional variable: the school enrollment rate,The result of the DW theoretically does not give us the possibility to use the model. So this urges us to integrate the GPC (-1) into the model in order to reach a figure of the DW close to number 2.

The T student test: Regarding health expenditures, the school enrollment rate, does not explain the GPC because the probability of T is 10% higher, and there is a positive effect of the GPC (-1) on GPC .

In other words, the rate of economic growth in the previous year affects economic growth in the current year by about 0.01 units.

For F file of the order of 2.90, this value is greater than 2.65 which is equal to the average calculated per file and therefore, the global pattern is significant and the prob value F is: 0.05. This confirms the result obtained.

For R 2 of the order of 0.23, this value is very far from 100%; So the variables are not interrelated. DW of the order of 1.99.

This shows that there is no autocorrelation of errors. All the results of these tests do not give us any proof to accept this model.

In this pattern we will integrate the conditional variables: the school enrollment rate and the investment rate.

. The result of the DW does not give us theoretically the possibility of using the model. So this forces us to integrate the GPC (-1) into the model in order to reach a figure of the DW close to number 2.

The T student test: Health expenditure, school enrollment rate and investment rate do not explain the rate of real economic growth because the prob T is 10% higher than all variables.

There is a positive effect of GPC (-1) on GPC, that is to say , the economic growth rate of the previous year affects the current year's economic growth in the range of 0, 03 unit. For F file of the order of 2.44, this value is less than 2.65, which corresponds to the average calculated per file and therefore the global model is not significant. For R 2 of the order of 0.25, this value is very far from 1.

As a result , the variables are not correlated with one another. DW with 1.90.

This shows that there is no autocorrelation of errors. The results of these tests do not give us any proof to accept this model.

In this model, we will integrate the conditional variables: the school enrollment rate, the investment rate and the life expectancy.

The T student test: Concerning health expenditure and school enrollment, they do not explain the GPC because the prob T is 10% higher. When there is a unit increase in the school enrollment rate, there is an increase in the GPC of about 0.01. And when there is a change of one unit in life expectancy, there is a regression of 0.04 units for real economic growth.

For F file of the order of 2.24, this value is less than 2.65 which corresponds to the average calculated by file and thus the global model is not significant. For R 2 with 0.23, this value is very far from 1.

Therefore the variables are not correlated with each other. For DW of the order of 1.46, it shows that there is no autocorrelation of errors. All the results of these tests make us reject this model.

In this model, we will integrate conditional variables: the school enrollment rate, the investment rate, the life expectancy and the economic growth per inhabitant.

The T student test: Regarding health expenditure, does not explain the GPC because the prob T is 10% higher.

When there is a change of one unit in life expectancy, there is a decrease of 0.05 units in the rate of real economic growth.

When there is a unit increase in theschool enrollment rate, there is a regression in the CPG.

When there is a change in a unit in the investment rate, there is an increase in the GPC. When there is an increase of one unit in GDP h,

there is an increase in the GPC of the order of 0.00. For F file of the order of 1453, this value is greater than 2.65.

Which is similar to the average calculated by file and thus, the global model is significant and the probability value F of: 0.00 confirms the result obtained.

For R 2 which is of the order of 0.99 this value is very close to 1, so the variables are correlated with one another.

For DW which is of the order of 1.21: this shows that there is no autocorrelation of errors

The results of these tests do not provide evidence to accept this model because health spending does not match the growing number of the population and this is observed in the lack of health infrastructure,

the lack of medical staff, the number of beds insufficient with regard to the number of patients.

This failure in the health sector affects the efficiency and thus the performance of the personnel of economic enterprises, as it has been demonstrated by some authors.

CONCLUSION:

The aim of this work was to study the role of fiscal policy in economic growth, but mainly and specially the relationship betweenthe public expenditure and the growth rate of the economy.

On this basis, and on the basis of a theoretical and empirical analysis, we have argued that differences between nations in terms of public expenditure on public expenditure are a significant factor in explaining The international heterogeneity of the pace of economic growth.

The hypothesis of our research was to check the existence of a positive influence of the public expenditure of the health on the rate of economic growth. Our results show a negative influence of public health spending on economic growth. We can therefore reject the hypothesis.

This result is coherent with much of what is presented in the various empirical studies and in the literature. Health spending has not had a positive effect on economic growth because its evolution does not correspond to the evolution of the population.

This can be seen both in the lack of health facilities and in the number of medical staff. This inadequacy in the health sector affects the efficiency and therefore the performance of the personnel of the economic enterprises.

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