

The impact of social policy on economic growth in Algeria during the period between 1990-2022

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Abstract:

This study aims to find out the impact of social policy on economic growth in Algeria during the period 1990 - 2022, given its importance in achieving the objectives of economic policies such as economic growth and others, by using the autoregressive model (ARDL) in an

equation expressing the relationship between economic growth as a dependent variable represented by the GDP per capita index and the total social policy variables represented by spending on education, health and housing as independent variables, with inflation as a control variable, relying on Eviews 12 to study the stability of various time series and perform all statistical and standard tests of the model. An analytical approach was used to analyse the statistical data. The results of the study found a significant positive impact of education and health expenditure on economic growth in the long run while the housing expenditure variable did not show any effect.

Keywords: Social policy; education; health; economic growth; ARDL.

JEL Classification Codes: I2, I1, O4, C1

INTRODUCTION:

In 2015, the United Nations adopted the 2030 Agenda for Sustainable Development, a major step towards transforming our world. The agenda addresses the grand challenges facing humanity, including eliminating poverty and other forms of deprivation, improving health and education, reducing inequality, and stimulating economic growth – all while tackling climate change and working to preserve aquatic and terrestrial ecosystems. The agenda is an ambitious and urgent call to action – agreed by all 193 UN member states – translated into 17 Sustainable Development Goals. These goals have in turn been translated into the 169 internationally agreed Sustainable Development Goals, the level of achievement of which is

tracked through 232 unique indicators (António , 2018).

During the millennium development goals, Algeria has sought to follow a development plan decided by the United Nations that guarantees the elimination of extreme poverty and hunger as the first goal among eight goals that all aim to achieve social justice and economic growth (Qadar & Aidoudi, 2019) and that is through Public spending, which is considered one of the most important financial policy tools through which it is possible to reach the planned goals within public policy, especially the goals of economic policy, which is known as the magic square, which includes achieving economic growth (nisman, 2021) as a general indicator indicating the nature of the current economic situation and also as a reflective mirror for the rest of the indicators.

Government spending on education and health care is a crucial factor in enhancing the overall health status of a country's population. The investment in education and healthcare made by the Algerian government has positive results not only in terms of saving lives but also in terms of economic benefits and ultimately, the country becomes better equipped to deal with any health-related disaster such as the previous Covid-19 pandemic, through strong and robust health systems. Healthcare spending is more important for developing countries, given their weak healthcare systems. Health care systems in developing countries suffer from a combination of increased risks and reduced health care capacity to respond due to low per capita health spending, a high underlying burden of disease, and increasing population density. Therefore, it is important to investigate how health care spending affects population health in a developing country like Algeria.

The introduction must contain the basic elements that are systematically accepted in the formulation of the introduction, such as: the study problem - the study hypotheses - the study objectives - the importance of the subject - the methodology used in the study - previous studies - the terms of the study.

The research problematic:

Fiscal policy plays a fundamental role in influencing economic growth through its tools, such as public spending, tax collection, or the general budget (Hibor & Taleb, 2023) has a positive or negative impact on the achieved growth rates. To know the reality and performance of financial policy through spending policy in Algeria in the period between 1990-2022, we pose the following problem:

What is the impact of public spending on the education and health sectors in achieving sustainable development goals in Algeria between 1990-2022?

To address this problematic, some sub-questions can be asked:

-What is the reality of spending on education in Algeria during the study period?

-What is the reality of spending on health and housing in Algeria during the study period?

-Is there a statistically significant relationship between public spending (education, health, and housing) on economic growth in Algeria during the period 1990 and 2022?

Research hypotheses:

The study hypothesis can be formulated as follows:

Public spending on the sectors (education, health, and housing) positively affects economic growth in Algeria in the long term

3-Research objectives:

The study considered an important topic, which constitutes one of the most important issues that developed or developing countries seek to achieve, which is achieving economic

development goals and high growth rates using financial policy tools, especially through their public expenditures, by estimating a standard model that reflects the relationship between the variables of the study, concluding results, and coming up with recommendations. It is added to previous studies related to the subject of our research, and highlights the directions of spending policy in Algeria on the health, education, and housing sectors, based on the development programs and plans launched by the state.

The importance of research:

The importance of this study appears through the role that fiscal policy has played in influencing economic growth and achieving sustainable development, especially with the developments witnessed in growth theory. The study dealt with a topic that has often been raised for discussion regarding an effective and correct financial policy to influence and increase growth rates, and what This study gains special importance in Algeria because it came to show the effectiveness of the expansionary financial policy adopted in promoting the achievement of the country's economic development goals and providing a scientific reference that represents an additional building block in the field of scientific research in addition to the efforts of those who preceded us in research in this economic field, and the importance of research increases. Especially what the world has known during this period due to the pandemic that struck it (COVID 19) caused economic stagnation for developed countries, while Algeria was affected by a significant decline in its income due to the collapse of oil prices, thus obstructing sustainable development programs.

Study methodology:

In order to enrich this study, we used the standard approach with the aim of identifying the variables that contribute to setting the sustainable development goals and influencing it through a time series extending from 1990 to 2022, and based on the approach of auto-ray regression models that allow the analysis of financial policy (public spending policy) on the health and education sectors. The database for the study variables was obtained from the

website of the National Office of Statistics (ONS), the World Bank, and reports and publications. Algerian Ministry of Finance.

In this study, we used the software Eviews 12 as a tool to show the impact of public spending on the education and health sectors to achieve growth in Algeria, which helped us in clarifying the model to be used (autoregressive distributed lags (ARDL)).

Previous studies:

Study Strauss (1998) and Schultz (1999) They concluded that individuals enjoying good health has a positive impact on their educational abilities. This contributes to obtaining good educational outcomes, which increases the effectiveness of human capital formation and thus increases the rate of economic growth

Study Brigitte Dormont (2007) Under the title "Expenditure on Health Care and Growth," it was concluded that individuals who enjoy good health are supposed to work long hours and thus increase productivity. The long period of life also motivates individuals to obtain the greatest amount of education, and therefore good health will contribute to creating more productive, educated individuals. It also constitutes an incentive or motivation to carry out the investment process, and this is what leads to increased rates of economic growth (Majdoub, yadrouj, & Aris, 2018) .

Study Biswjit Marita and CK Mukhopadhyay (2012) Titled "Analysis of the Role of Public

Expenditure in the Education and Health Sector in Achieving Economic Growth.” In some Asian countries, the researchers used the Johansen cointegration test. It was concluded that there is cointegration and a long-term equilibrium relationship between spending on the health sector and economic growth, i.e. there is a causal relationship between the two variables, as the increase in public health spending contributes to enhancing economic growth in some of the study countries, such as the Philippines and Singapore.

Al-Awfi's study is Hakima (2015) Titled “Social Policies and Economic Growth in Algeria,” a model was used (ARDL). The results obtained indicate a negative impact of spending on education and employment on economic growth in the long term. While the impact of the rest of the variables was positive on economic growth, as the increase in spending on the health and housing sector and the national solidarity and family sectors leads to an increase in the rate of economic growth in the long term (Al-Awfi, 2022).

Study Atilgan and Ertugrul (2016) It aims to study the hypothesis of health-based growth of the Turkish economy during the period extending from 1975-2013 to test the cointegration relationship between economic growth and health spending. The Autoregressive Distributed Distribution Model (ARDL) was used to examine the relationship between the two variables in the long run. The results obtained indicate that increasing health spending by 1% per capita leads to an increase of 0.434% in GDP per capita, and this study showed that the hypothesis of health-based growth is valid for Turkey (Merizek & Slimani, 2021) (Study by Hani Abdel Majeed Al-Hamami, Medhat Muhammad Abdel-Al, Majed Muhammad Al-Kharboutli, (2021) Titled The Impact of Public Spending on the Education and Health Sector in Achieving the Sustainable Development Goals - An Applied Study on the Arab Republic of Egypt, the study identifies the extent of the importance of the role of public spending on the education and health sectors in achieving the Sustainable Development Goals in their various dimensions. The descriptive analytical approach was relied upon from through the use of the correlation coefficient P to determine the strength and direction of the relationship between the variables and also an analysis of variance for a time series estimated at ten years, it was found that there is a direct relationship between the percentage of spending on education and the rates of public expenditures, while the percentage of spending on health has an inverse relationship with public expenditures.

Study by Issa Karkab, (2024), Titled: The Impact of Health on Economic Growth in Algeria: An Econometric Study for the Period 1990-2020 aims to measure the impact of health on economic growth in Algeria during the period extending from 1990 to 2020. The descriptive approach was relied upon and the quantitative analysis method (ARDL) model was used. It was concluded that the relationship of health to economic growth is a balanced relationship in the short and long term.

1- The theoretical framework of the study concepts: 1-

1 Social Policy:

Social policy is an important tool for promoting social welfare, as social services help reduce social and economic inequality and achieve economic growth (Wilding & Victor, 2023)

It is defined as: “a government policy that includes a set of decisions and programs implemented through various mechanisms to provide diverse and integrated services to members of society as a whole with the aim of achieving an increasing degree of social

justice” (jalouli & kadid , 2022) .

1-2 Fiscal Policy:

It is defined as the policy according to which the government implements its expenditure and revenue programs in order to achieve desired effects and avoid undesirable ones on national income, production and employment (Florin, ileana, & Madalin - Sebastian, 2015).

1-3 Economic growth:

Economic growth is one of the concepts and terms that are widely used and commonly used in economics, as it is one of the basic goals that various countries seek to achieve, regardless of their economic system (malwah & makid, 2020) It is defined as: “The real annual increase in the gross domestic product or the total national income in a way that achieves an increase in the average per capita share of real income, or it is the real national product divided by the population” (karkab, 2024).

Economic growth is also known as being measured by the annual rate of increase in the country’s real gross domestic product. Its aim is to provide hope for achieving possible development for members of society (Gabriel & Hlanganipai, 2014).

1-4 Social expenditures allocates within social policy in Algeria : Social policy represents part of the state’s general policy outcomes and includes a set of programs and systems directed at citizens across various sectors to achieve stability and social cohesion (rabah, 20021). Among the social services provided by the government we mention the following:

1-4-1 Spending on education:

Education is an essential tool for development because it increases a country’s potential to achieve economic growth and productivity (Noni & Joseph Chukwudi, 2024) The great importance of the educational system in bringing about development in society has led the

Algerian state to adopt a basic position of free education in recognition of the principle of equal opportunities among students with the aim of ensuring the greatest degree of social equality at all levels from primary to university, all of which represent a production path that considers the human element as the primary material. And the product at the same time. Among the educational spending programs we find: school scholarships for disadvantaged students, establishing restaurants, ensuring transportation and accommodation, and supporting textbooks.

1-4-2 Health spending:

Human health occupies a prominent place in Maslow’s hierarchy of human needs as it represents an essential part of any society and economic activity as one of the components of the total stock of human capital that generates outputs. Workers who enjoy better health, higher education and greater experience will be able to contribute more efficiently to economic growth. (Peter, Affandi, Luthfi, & Masagus M, 2022). Algeria is among the countries that have given importance to health spending by approving free treatment and ensuring access to it for all members of society and across the entire country. This has been translated into the volume of expenditures allocated to this sector within its general budgets. Health spending also includes several forms, including: support for hospital institutions and school health (majdoub, ammar, & nadal, 2018) Among our most important sources of health spending: the state through the percentages it allocates to the health sector from public spending, as well as insurance and social security funds through family deductions from

wages in addition to families through the costs borne by citizens for examinations and treatments from their own pocket.

1-4-3 Spending on housing:

Algeria annually allocates huge sums of money to address the problem of housing shortage, using various ways and means of housing policy to intervene in the housing market in line with the requirements of individuals and general development planning by supporting various formulas, perhaps the most prominent of which are the Millennium Plans, which were embodied in three development programs represented by the Economic Recovery Support Plan. (2001-2004), the supplementary plan to support economic growth (2004-2009), the plan to consolidate economic growth (2010-2014) (salma, 2017). Direct subsidies may be provided for the purpose of acquiring housing, estimated on the basis of a percentage of the purchase of the home. In Algeria, we find, for example, There is a state body specialized in granting this type of subsidy, represented by the National Housing Fund, and it may be indirect subsidies through supporting housing programs by reducing the rent value or reducing the market value of housing according to conditions determined by the country's system (Al- awfi, 2015) .

1-5 impact of public spending (Health and education sectors) on Economic growth
Government spending is considered one of the financial policy tools approved by the state, and the economic literature indicates that there is a relationship between government spending and economic growth. (salami, 2015) where the opinion of both economists and authors differed about the relationship between government spending and economic growth. Perhaps the most prominent viewpoints that have dealt with this relationship are those of the Keynesians who assume that there is a relationship that goes from government spending towards economic growth (bouallaq & Ait Yahia, 2023) where Keynes (1936) called for the role of government spending to set the level of income and distribute it. And in the countries developing, no lead to Policy Spending Government to acceleration the growth Economic And enhance Opportunities the job Just, but rather lead to also Dora Useful in limit from Poverty And not equality According to Keynes, spending is considered a factor that can be used as a tool to stimulate growth, and therefore an increase in public consumption can lead to an increase in the level of employment and investment returns due to the effects of multipliers on aggregate demand. Therefore, spending leads to an increase in aggregate demand, which raises the level of investment. Production level (Karboub & Perry, 2023). Infrastructure is also considered very necessary for the economy in general and for society in particular, and can enhance the total productivity of production factors, which reflects positively on economic growth (Mukhtar & Shanini, 2020).

1-5-1 The health:

After much research, researchers found proverbs Y. Meng (YANG, ZHANG, & MENG, 2015) and M. Lewis (M. Lewis, 2014) pointed out that health spending contributes to economic growth in the long term, provides them with job opportunities, and also enhances many industries, such as the manufacture of medicines, equipment, and health services, and this It has a positive effect on the economy. Health spending also contributes to improving the general health of the population, and this in turn increases life expectancy, thus improving productivity (Denawi & zarwati, 2021) The contribution of health policy to economic growth is also evident as follows (Al- awfi, 2015):

- Healthier workers have fewer absences from work and greater physiological capacity to work, so there are productivity gains that accompany good health.

- Healthier children miss school less. They also feel in a good position within the school to complete their work.

1-5-2 Education:

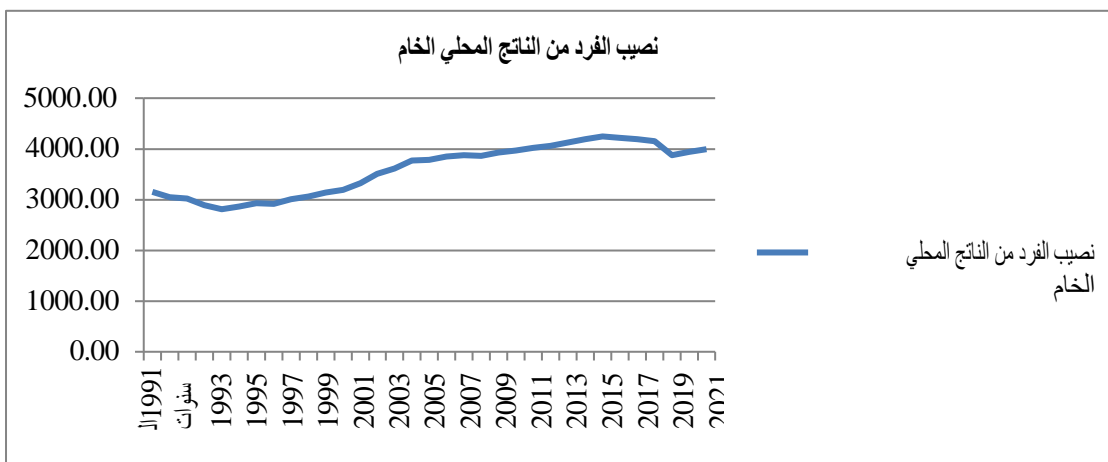
as Similar findings have also been found in several studies Barro (Philippe & Peter , 2000) that education increases worker productivity, regardless of the type of production process, provided that appropriate education is available and permanent coordination between educational and economic departments. Also, the income rate of an educated individual is higher than the income rate of an uneducated individual, and the rate of economic growth is higher in countries with more educated individuals, the economic growth rate of countries with less educated individuals is greater than the economic growth rate (Abdullah, Mokhtari, & Mokhtari , 2023).

The success of economic growth is closely linked to the level of synergy between the various aspects of human development on the basis of effectiveness and equity, as education and health are essential values for the well-being of people and are linked to each other. Education contributes to improving good health, and the latter contributes to good education, and both generate improvements and increased growth. Economic.

2- Analysis of the development of the study variables during the period (1990-2022)

2-1 Analysis of the development of the gross domestic product per capita during the period (1990-2022)

Fig)01(:Development of the gross domestic product per capita during the period(1990-2022)



Source: Prepared by researchers based on World Bank data

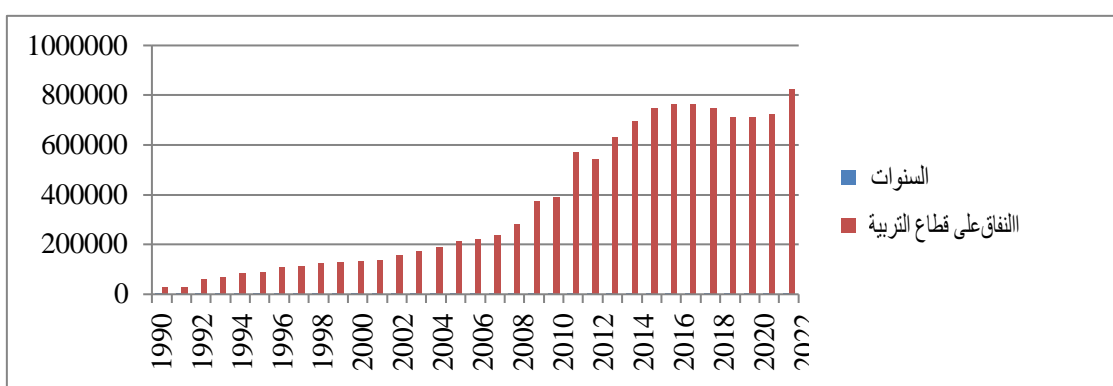
The economic well-being of an individual is measured in the literature related to economic development by the per capita GDP index, which is defined as the per capita share of national income (Bin Siddiq, 2023). The graph shows a decline in the per capita share of the gross domestic product starting in 1990, when it was estimated at \$3,153.48 billion, reaching \$3,066.04 billion in 1999. This decline was driven by a combination of the civil war in Algeria and also the decline in oil prices in the same period.

But during the period extending from 2000 to 2016, there was significant growth, as the values of the per capita gross domestic product increased, and Algeria returned to the ranks of high-

middle-income countries, where it was estimated at 3,138.33 billion dollars in 2000, reaching 4,246.26 billion dollars in 2016. This is due to the rise in oil prices, which in turn led to the strengthening of public investments that it was accomplished to improve the conditions of citizens through the implementation of several economic and social programs, and the political and security stability factor (Tlemceni, 2021) also played an important role in advancing economic growth in Algeria. However, the following period witnessed a decline in the value of the per capita GDP, due to the decline in oil prices and also to the repercussions of the Corona pandemic.

2-2 Analysis of the development of government spending on the education sector

Fig02(Development of government spending on the education sector during the period (1990-2022)

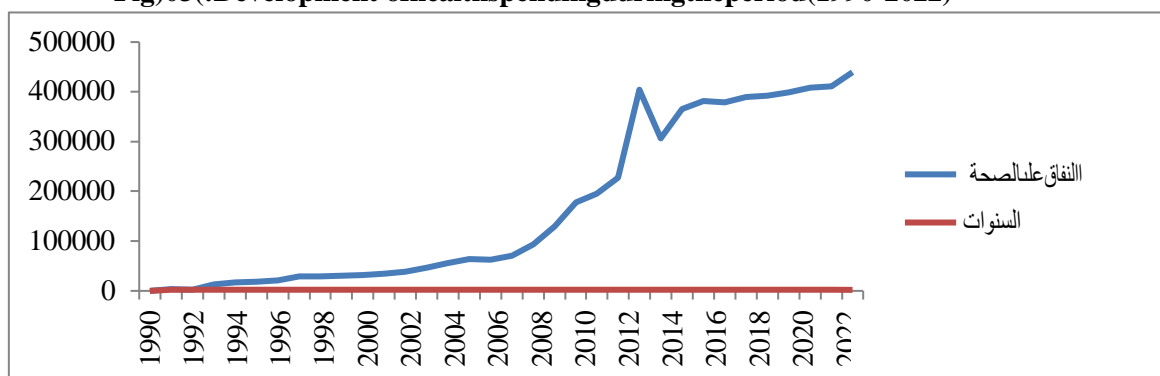


Source: Prepared by researchers based on World Bank data

From the figure above, we notice a slight increase in spending on the education sector during the nineties, reaching one year 1990, a value of 28,590.00 million DZD. This is due to the lack of projects directed to the sector and the scarcity of financial resources due to the decline in oil prices. The government directed all its concerns to improving the security and political situation. The increase in the percentage of amounts allocated to spending on the education sector returned to reach the highest value during the years 2016 and 2017 to be estimated. 764,052.40 million DZD. This continuous increase in financial allocations directed to the education sector can be explained by the rise in the wages of workers and teaching staff, as well as the increase in the number of students enrolled each year, which in turn represents an essential element in the increase in expenditures, especially with the approval of free education, which is considered an incentive for this. The increase (Mohoney, 2014), while the years 2019 and 2020 recorded a sharp decline due to the effects of the Corona crisis, which forced the Algerian government to take austerity measures, the most important of which is postponement of government projects.

2-3 Analysis of the development of spending on the health sector during the period (1990-2022)

Fig03:(Development of health spending during the period (1990-2022))



Source: Prepared by researchers based on World Bank data

The chart in the picture shows the development of spending on the health sector during the period from 1990 to 2022. Below is an analysis of the graph:

The first stage (1990-2000): There appears to be a gradual and slow increase in spending on the health sector in the first years studied, which were characterized by stable growth without any noticeable spikes. The fact that Algeria followed austerity policies as a result of its implementation of structural reforms by signing various agreements with the International Monetary Fund to address the problem of foreign debt and confront the economic recession, which obliged it to reduce and rationalize the volume of expenditures allocated to the health sector. The minimum amount of spending allocated to the health sector during the period studied was estimated at 2,382.56 million DZD in 1991, and it increased with a slow increasing growth to reach a value of 31,621.74 million DZD in 1999.

The second phase (2000-2015): Through the graph, we witness at the beginning of the first decade of the current century an acceleration in the growth rate of health spending. This increase may be the result of improvements in health policies or increased awareness of the importance of health care, as this phase coincided with financial prosperity. Which Algeria experienced resulting from the rise in oil prices. Algeria has implemented expansionary

spending policies, such as the economic recovery program and the supplementary program to support economic growth (Lensari & Bouazza, 2024), where the volume of health spending in 2000 was estimated at 33,900.74 million DZD, and it jumped at a large pace in 2008 to be estimated at 129,101.25 million DZD, increasing by the largest value during this period. The stage is estimated at 404,945.35 million DZD in 2012.

The third phase (2015-2020): After the big jump, health spending declined. This phase was characterized by a decline in oil prices in the middle of 2014 and during the year 2018, which led the Algerian state to freeze some development projects and follow a policy of rationalizing expenditures, as was observed from the year 2015 to 2019. The value of health spending is smaller compared to 2012.

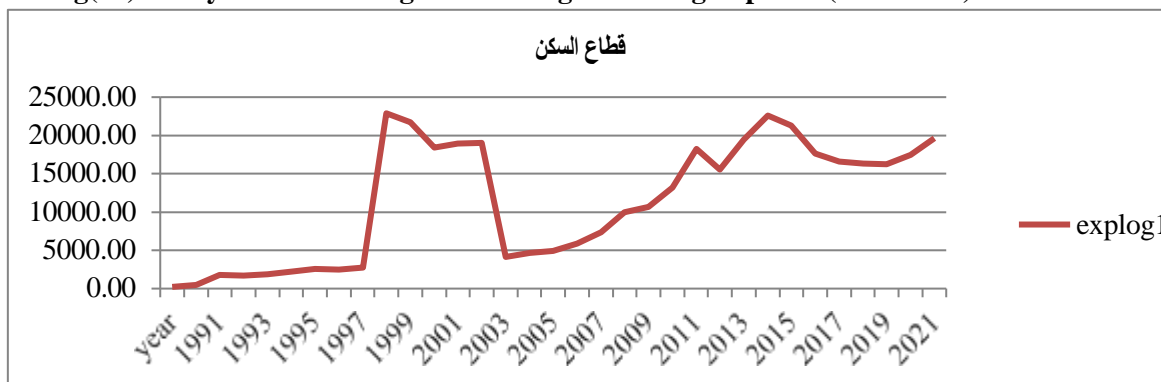
The fourth phase (2020-2022): At the end of the period, we see another increase in health spending, as it reached its highest levels. This can be explained by the impact of the Covid-19 pandemic, which required large investments in the health sector to face unprecedented

challenges.

Accordingly, health spending in Algeria has grown at an upward pace over the years 2000 and 2020, as it stabilized in the last six years at a rate of 10% of public government spending and 6% of the gross domestic product, due to reasons including: increasing demographic growth, the increasing size of the medical and administrative staff, in addition to the increase in their salaries and grants.

2-4 Analysis of the housing sector in Algeria during the period (1990-2022)

fig(04): Analysis of the housing sector in Algeria during the period (1990-2022)



Source: Prepared by researchers based on World Bank data

We note from the above graph that there is a slight increase in the amounts allocated to the housing sector during the period from 1990 to 1998, the year 1990 was estimated at 219.23 million DZD, rising after that to 2767.34 million DZD in 1998. This is due to the fact that Algeria before this stage (the end of the eighties and the beginning of the nineties) knew the adoption of a market economy system and also witnessed the decline in the value of the Algerian dinar and the deterioration of the purchasing power of citizens as a result. The decline in oil prices, which affected the state's financial ability to continue supporting housing projects, in addition to the internal conflict (the Black Decade) and political and security instability, which led to a significant deterioration in infrastructure. Then the amount allocated for housing spending rose to the highest level in 1999 at 22,889.83 million DZD. Due to rural migration and significant demographic growth. The period between 2000 and 2018 witnessed fluctuations in the volume of spending, with periodic rises and falls, during which the Algerian state established many mechanisms and programs to intervene in the housing market, as the state's policy tended to support economic recovery by increasing government spending on investment and stimulating aggregate demand. The supplementary program to support growth was also supported as a result of the improvement in the financial situation after the rise in the price of oil, as the volume of spending on housing reached 22,600.83 million DZD in 2015.

The period between 2019 and 2022. The curve shows a relatively high increase, which may reflect stability in economic policies and an improvement in the state's financial situation, which allowed it to increase investments in this sector.

3- Standard model for study variables:

In order to study and determine the impact of social expenditures on economic growth in Algeria for the period extending from 1990 until 2022. A model was estimated that explains economic growth (gross domestic product per capita) as a dependent variable using the following independent variables:

Expendu:Expenditureonprimaryandsecondaryeducation(managementbudget) Expsante: Spending on the health sector (management budget)
 Explog:Spendingonthehousingsector(managementbudget) CPI:Inflation
 Themodeltakesthefollowinglinearform:
 $GDP_c = f(\text{Expendu}, \text{Expsante}, \text{Explog}, \text{CPI}) \dots \dots \dots (1)$

3-1 Stability study of the variables:

Initially, as a first stage, we test the stability of the time series, which is one of the conditions for performing co-integration. The goal is to reveal the relationship in the long run and avoid false estimates that may result if the series used in the estimation are unstable. There are many statistical methods used to test stability. One of the most important of these methods is the unit root test. Despite the many tests, we will use two tests, including the expanded Dickey-Fuller test (ADF) and Phillips Prion PP test. The following table shows the results of applying these two tests:

Table(1):ADF and PP test results

Variables	ADF		PP		The decision
	possibility	Calculated value	possibility	Calculated value	
GDP _c	0.868	-0.550	0.825	-0.727	Unstable
D(GDP _c)	0.004	-3.971	0.004	-3.947	stable
CPI	0.433	-1.675	0.446	-1.649	Unstable
D(CPI)	0.000	-5.612	0.000	-5.612	stable
Expendu	0.983	0.481	0.973	0.284	Unstable
D(expendu)	.02238	-0.160	.00001	-5.384	stable
Explog	0.313	-1.932	0.306	-1.949	Unstable
D(Explog)	0.014	-3.526	0.000	-5.511	stable
Expsante	0.979	.0403	0.971	.0240	Unstable
D(expsante)	0.000	-8.074	0.000	-7.682	stable

Source:PreparedbyresearchersbasedonoutputsEviews12

The previous table includes statistical values (The t-statistic calculated for each variable and the associated probability, where for the series (GDP_c), (CPI), (expendu), (Explog) and (expsante), the results of the two tests ADF & PP revealed that they are not stable at the level and the null hypothesis was accepted, i.e. The series contains a unit root n. The calculated value was less than the tabulated value, but after taking the first difference, it became stable, always relying on the same two tests. From this it is concluded that these chains are

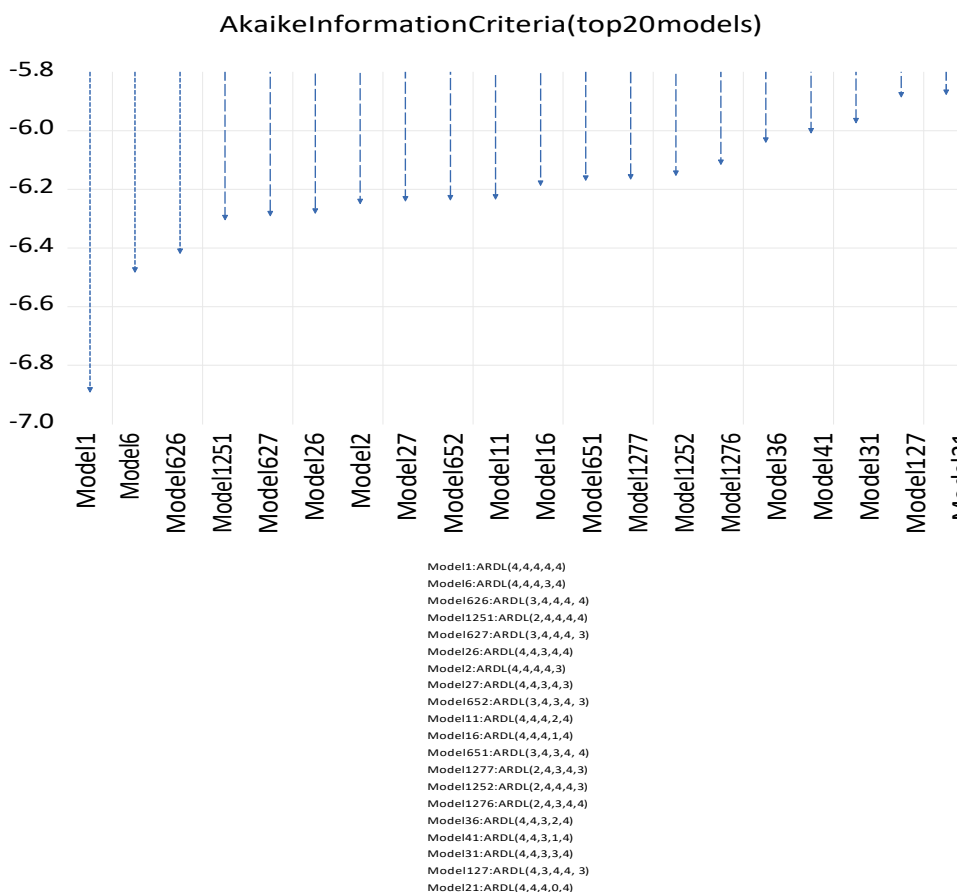
complementary to the first degree

3-2 BordereffectBoundtest:

After conducting a stability test, it was concluded that the integration of the time series is a mixture. Some of them are integrated of the zero degree and others are integrated of the first degree. The only condition for using the bounds approach is met, meaning that there are no integrated time series of the second degree. We move to the border approach Test Bound to detect the existence of a co-integration relationship between the variables of the study, where the null hypothesis is tested, which states that there is no co-integration between the variables of the model, that is, the absence of a long-term equilibrium relationship.

Co-integration regression using the terms approach: This model was chosen in the table (2) Based on the AIC informatics standard, specifying the slowdown periods as a maximum of 8, and choosing the model. ARDL (2.2.0.4.2)As the best model

Fig(05): Resultsofoptimaldecelerationtest periods



Source:Preparedbyresearchersbasedonoutputs Eviews12

Table(02):CointegrationtestusingusingBoundsTest

F-BoundsTest		NullHypothesis:Nolevelsrelationship		
Test Statistic	Value	Signif.	I(0)	I(1)
Asymptotic: n=1000				
F-statistic	12.14676	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37
Finite Sample: n=35				
ActualSampleSize	29			
10%	2.46	3.46		
5%			2.947	4.088
1%			4.093	5.532
Finite Sample: n=30				
10%			2.525	3.56
5%			3.058	4.223
1%			4.28	5.84
Source: Preparedbyresearchersbase donoutputsEviews12				

After we obtained the results of this test and after comparing the calculated value statistically F with the corresponding tabular value calculated at $k = 4$. We noticed that the calculated value of F (12.14) is even greater than the critical value at the level (1%) of the upper limit (4.37). Therefore, the null hypothesis that there is no co-integration between the variables are rejected and the alternative hypothesis is accepted. Which states that there is co-integration, and there is a long-term equilibrium relationship between the variables of the model

Model performance in the short run (error correction model ECM: From the table below, it is clear that the model error correction factor is -0.512482 and has a significant and negative significance. This increases the accuracy and validity of the equilibrium relationship in the short term, and that the error correction mechanism is present in the model.

Table(03): Estimating the error correction model and the short-run relationship for the ARDL model

ECM Regression Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
CointEq(-1)*	-0.512482	0.040020	-12.80552	0.0002

Source: Prepared by researchers based on outputs Eviews 12

3-3 Estimating model parameters in the long run:

Table(04): Estimating the long-run relationship for the ARDL model

Levels Equation Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNEXPSANTE	0.026103	0.223983	0.116540	0.0128
LNEXPEDU	0.030840	0.343694	0.089732	0.0328
LNEXPLOG	0.023292	0.015314	1.520956	0.2029
LNCPI	-0.021655	0.014425	-1.501270	0.2077
C	7.324412	1.670886	4.383550	0.0118
$EC = LNGDPC - (0.0261 * LNEXPSANTE + 0.0308 * LNEXPEDU + 0.0233 * LNEXPLOG - 0.0217 * LNCPI + 7.3244)$				
Source: Prepared by researchers based on outputs Eviews 12				

From the table it is clear to us that the variables that we chose, according to previous studies, affecting the per capita GDP, some of them showed a positive sign and others showed a negative sign, as follows:

There is a significant positive effect of the health sector spending variable on economic growth, as the increase b1% in health spending will lead to an increase in per capita GDP by 0.22%. As spending on health care has taken into account the quality of health services provided to citizens, it has also taken into account efficiency in spending and the fair distribution of health services at the state level. It has become accessible to all classes of society with the same quality. Also, the availability of official health insurance for employees in the public and private sectors, which may harm to equality and thus to the health of employees and to economic growth in the long term.

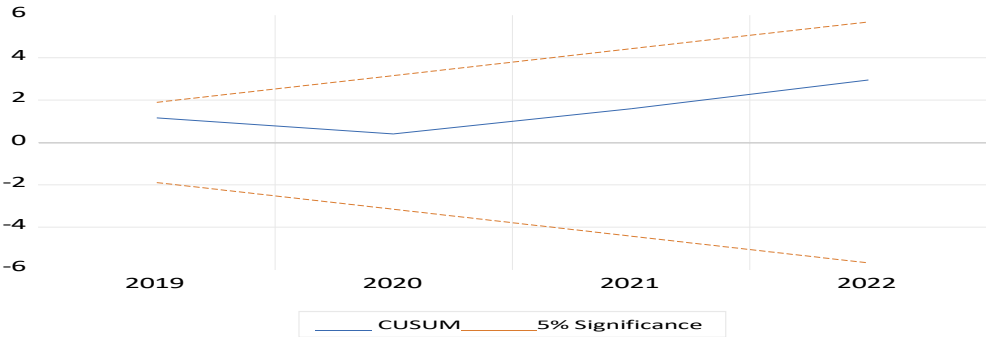
It is also clear from the estimated model that spending on education has a positive and significant impact on economic growth, as the increase b1% in spending on education will lead to an increase in the per capita GDP by 0.03%, and this reinforces the views of many studies, such as the Denison study, the Schultz study, and the Psacharopoulos study, which believe that government spending on education is an essential factor in raising productivity, investment, and saving, which helps in competition and creativity. Between members of society, who has a significant impact on economic growth.

It was also found that there was a positive, non-significant effect of spending on housing on economic growth, as the increase b1% in housing spending will lead to an increase in GDP per capita by 0.22%.

3-4 Structural stability shapes (test CUSUMSQ and CUSUM)

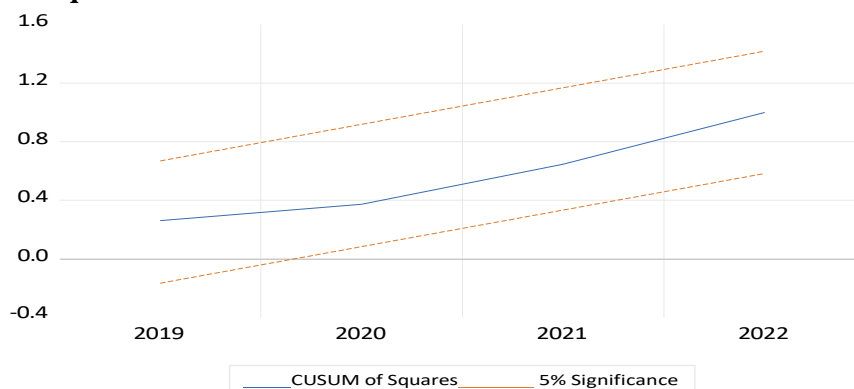
After we have studied the short-term equilibrium, we will ensure that the data used in this study are free of any structural changes, and in this step we will rely on testing the cumulative total of the reoccurring residuals (CUSUM) and the Cumulative Recurrence Sum of Squares (CUSUMQ) test, which was proposed by Brown, Dublin, and Evans (1975). Most studies have shown that such tests are always associated with the ARDL methodology. Therefore, we applied these two tests to the model under study and they appear. Its results are in the following forms:

Fig(06): CUSUMTEST



Source: Prepared by researchers based on outputs EViews 12

Fig(07):CUSUMSquaresTEST



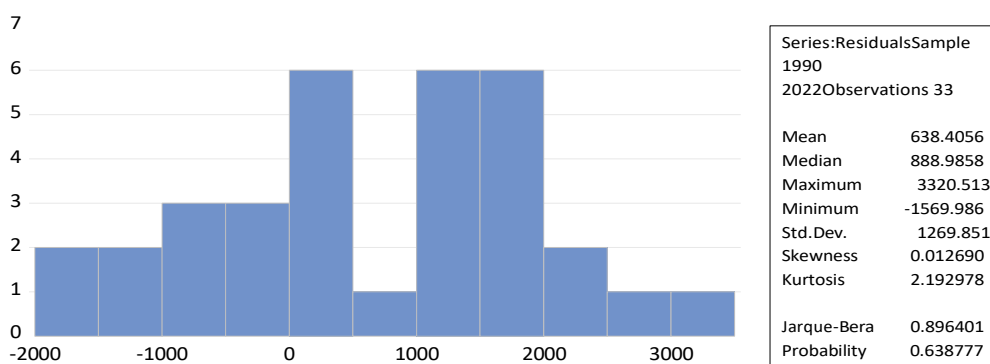
Source:PreparedbyresearchersbasedonoutputsEviews12

From the graph we notice that the test is the cumulative sum of the reoccurring residuals CUSUM, and also for the test of the cumulative sum of squares of the recursive residuals, CUSUMSQ, is a linear mean within the boundaries of the critical region, indicating a kind of stability in the model at a significant level of 5%. This means that the estimators are constant during the time period under study, that is, there is no more than one equation.

It is clear from these two tests CUSUM and CUSUMSQ show that the results of this model are consistent and stable in the short and long term

3-5 Testingstatisticalproblems:

3-5-1 Testfornormaldistribution ofresiduals:atest"Bera-Jarque" the shape(03):Naturaltestforresidues



Source:PreparedbyresearchersbasedonoutputsEviews12

Through the graph and results, we find that the probability value corresponding to the testJarque-bera reached 89.64%, which is greater than 5%, and from this we cannot reject the null hypothesis, and from it we conclude that the residuals are normally distributed, and this indicates the quality of the estimated model.

3-5-2 Testing for the existence of a linear correlation for residuals of degree greater than one: "test" Godfrey-Breusch "Serial Godfrey-Breusch" (LM Test Correlation Table(05): Error autocorrelation test results

Breusch-Godfrey Serial Correlation LM Test			
Null hypothesis: No serial correlation at up to 2 lags			
F-statistic	3.655915) Prob. F(2,2	0.2148
Obs*R-squared	22.77136) Square(2	0.2537

Source: Prepared by researchers based on outputs Eviews 12

The results of this test show us that the value of probability Obs*R-squared has reached (25.37), which is a value that exceeds the significance level of 5%, and from it we conclude that the null hypothesis is accepted, that is, there is no serial autocorrelation between errors, and from it the estimated model is free of the autocorrelation problem.

3-5-3 Error variance homogeneity test (Test ARCH) Table(06): ARCH test results

Heteroskedasticity Test: ARCH			
F-statistic	1.266095) Prob. F(1,26	0.2708
Obs*R-squared	1.300173) Square(1	0.2542

Source: Prepared by researchers based on outputs Eviews 12

Through the table it shows the value calculated F was 1.26, with a probability of (27.80%), which is greater than 5%. In this case, the result leads us to accept the null hypothesis that the variance of the error term series is constant, meaning that there is no difference in the variance of the error term. Also note that the probability of Obs*R-squared is (25.42%). If it is greater than 5%, we cannot reject the null hypothesis, which states that there is no difference in variance, and from it we conclude that the residuals do not suffer from the problem of variance.

Conclusion:

Through this research paper, we tried to study the impact of social policies on economic growth in Algeria during the period from 1990 to 2022 by relying on spending on various social sectors, which are education, health and housing with per capita GDP. After estimating the ARDL model, we found the positive impact of all variables on economic growth in the long run, where the importance of public spending comes as one of the most important tools of fiscal policy, which expresses the role of the state in the extent of its intervention in various aspects of economic and social activities, which is necessary to achieve economic balance and avoid crises. Within the country. The researchers recommended the need to pay attention to expanding the circle of public expenditures in these sectors (education, health and housing) with a larger volume than the current investment volume because of its effective impact in achieving a good standard of living on the one hand, and on the other hand, increasing opportunities to obtain diverse jobs, which contributes to increasing revenues.

Results:

Improved health and education indicators: Due to public spending, Algeria has seen improvements in many health and education indicators, such as increased school enrolment rates and improved healthcare. and Reducing the social gap: By providing education and health for all, public spending contributes to reducing the socio-economic gap between different segments of society.

Recommendations:

Attention should be paid to involving all concerned parties in the process of planning and building the health system and developing programmes to improve the health level of Algerians and Health personnel must be trained, infrastructure must be improved, and medicines and medical equipment must be provided to ensure the availability of basic treatments and appropriate health care for patients. because this sector is the first provider of health careservices that achieves high levels of growth. Greater focus on increasing scientific research by research centres in the field of health care service delivery and health sector development, As for education, due to its importance in the field of investment in human capital and its impact on rates of economic development, education must be provided to all in a way that ensures that education reaches all children, regardless of their economic backgrounds, which contributes to achieving the goal of comprehensive education. Also providing scholarships and financial support to students from low-income families, which contributes to reducing school dropout rates and ensuring students continue their education. Improving the technological infrastructure, which contributes to enhancing students' digital skills, which is essential in the modern era.

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