

The impact of budget and fiscal policies on economic growth: empirical evidence from Morocco

L'impact des politiques budgétaires et fiscales sur la croissance économique : preuves empiriques du Maroc

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Citer cet article	HADJ ALI, A., & BENYACOU, B. (2023). The impact of budget and fiscal policies on economic growth: empirical evidence from Morocco. International Journal of Accounting, Finance, Auditing, Management and Economics, 4(3-2), 642-660. https://doi.org/10.5281/zenodo.8077217
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Received: May 23, 2023

Accepted: June 23, 2023

International Journal of Accounting, Finance, Auditing, Management and Economics - IJAFAME

ISSN: 2658-8455

Volume 4, Issue 3-2 (2023)

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Abstract:

With the emergence of the Keynesian model, the role of the state has increased through its economic policies, especially about its financial policies. This is due to the effectiveness of these policies in achieving the state's economic target. The importance of its tools is embodied in public spending, which affects national economic activity in terms of consumption, savings, and investment.

The fiscal policy defines the set of actions that the government can take, which are depicted in the following parts. The first part will be devoted to a theoretical model for a more complete discussion of budget and fiscal policy.

The second part will be devoted to the study of the fiscal's influence and tax policy on Moroccan economic growth through both an empirical and econometric study. In addition, through an applied study in which we rely on statistical studies. Using the VAR model and Eviews 10 software,

We conclude that there is indeed an impact of fiscal policy and tax policy on Moroccan economic growth.

Second, budget and tax policy can be catalysts for private investment and an increase in public spending by the state.

If we take into account the results obtained from this research, we can make the following recommendations: The State must take into account financial and fiscal measures in the first place to increase investment and realize the budget and thus achieve economic growth

Secondly, the State must be aware of the importance of budgetary and fiscal policies in achieving the major balances of the State. As we know, tax revenues represent an important resource for the state treasury, but it should not be forgotten that high tax revenues can lead to lower investments, whether private or public.

Keywords: Fiscal policy, Economic growth, Budget policy, VAR model, Morocco

JEL Classification: H61 O11 O23 R28

Paper type: Empirical research

1. Introduction

The use of budgetary and fiscal policies has become necessary to develop the national economy or to escape suffocating economic crises. The best example is that of 1929. The financial crisis of 1929 led to a radical change in the economic policies of most countries in the world. This was due to a change in the perception of the state's role in economic life. The economic analysis before the crisis was based on the neutrality of the state in economic life. In the early thirties of the last century, when monetary policy failed to remedy the situation, Keynesian thinking emerged. In this respect, this policy emphasized fiscal policy as the basic rule for achieving desired economic goals. In this case, the interest in fiscal policy returned as a tool and a means to address macroeconomic imbalances, which are of critical importance, especially after the emergence of both the debt crisis and the problem of the general government budget deficit in many countries. The developing world in general and the Arab world in particular stand here as clear examples. In add, due to the increasing interference of the state in economic life, which has led to an increase in the volume of public spending, many tools are used to control public spending and to increase public revenues to maintain a well-balanced budget.

The budget is the most important tool in the hands of the government to achieve its development objectives, and thus constitutes a faithful translation of its orientations so that the economic and social policy adopted reflects the nature of the priorities established through the funds. Allocated, in addition to the financial effort of the State in the management of public affairs and the implementation of sectoral policies. The state budget has three basic dimensions: financial, economic, and social. On the one hand, it is a matter of ensuring optimal management of financial resources, which are of a limited nature, to achieve the objectives of government policy through efficient distribution of financial funds, according to priorities fixed in advance. Secondly, the budget envisages achieving macroeconomic objectives related to the improvement of the general indicators of the national economy, encouraging the creation of wealth and thus increasing the growth rates achieved, and ensuring their sustainability over time, in connection and interdependence between immediate and long-term structural choices. Finally, the budget also ensures the distribution of national wealth in such a way as to guarantee equity and seeks to reduce the extent of social and spatial disparities, even those related to gender.

The debate on the budget derives its extreme importance from the primary role of the general state budget and the finance law in the conduct of government policy, in all economic and social areas. Including the embodiment of the political will of voters and the practical translation of public policy deliberation, which are supposed to be associated with the rotation of governments in positions of responsibility.

The importance of fiscal policy lies in its integration with other economic policies such as monetary policy, exchange rate policy, and fiscal policy, all of which are used to achieve economic stability and ensure a high rate of return for countries.

The main objective of our article is to study the impact of budgetary and fiscal policy on the economic growth of Morocco.

Our article is not intended to expose an empirical econometric study which will be pressed first by a theoretical study. In other words, we will start first with a literature review, then I will address the issue of research and hypotheses.

Moreover, the methodology and data will also be explained in depth. Finally, I will discuss the results and conclude with a clear conclusion.

2. Literature review

The classics

The classical school of economics can be considered one of the most eminent schools that have dealt with the theory of public finance.

For the economist Jean Baptist Say, who considers that any supply creates equal demand, This is the main determinant of the rate of economic growth. In this sense, it should be noted that classical economic thinking is based on the premise of full employment.

Moreover, this thinking considers that the economy operates in a state of equilibrium that is reached automatically through the law of supply and demand.

Adam Smith's "Invisible Hand", which is considered to be one of the most important pillars of classical economic thought, shows that there is a direct relative relationship between production and expenditure. Consequently, any increase in production or supply will result in an equal increase in monetary income. (Saraceno, Francesco 2017).

Neoclassics

Fiscal policy is one of the two traditional instruments of economic policy. However, the classical (neoclassical) or anti-Keynesian ideology advocates that expansionary fiscal policy has no favorable effect on economic activity. (Blancheton, Bertrand page 17-23)

John Maynard Keynes

On the other hand, Keynesian theory considers that the ideas on which the classical economists (the classical school) based themselves are only theories that are difficult to apply. Keynesians have strongly criticized the ideas and foundations of the classics about fiscal policy.

In his analysis of inflation and employment, Keynes linked the state's fiscal policy to employment and income levels. According to Keynes, the state can use government revenues and spending to regulate economic activity. For this reason, several variables are affected by this fiscal action, and the return to full employment requires the intervention of the State, a regulatory body that must ensure the ex-ante coordination of individual actions (Blancheton, Bertrand 2003, page 25).

There is no doubt that fiscal policy and budgetary policy have been the subject of debate and intervention throughout history. In this regard, Ibn Khaldoun's explanation of the role of fiscal policy in the economy of the state must be taken into account.

For ibn Khaldoun, public spending can cause major problems for the economy, given the weight of spending. In this regard, the state must make public investments from the money it has collected in one way or another. For Ibn Khaldun, consumers play a large role in maintaining private demand, and therefore, there is sufficient production on the part of the state. However, if there is an economic slowdown, this will reduce the taxes collected (Verrier, 2004). This question leads us to say that Tax is indeed one of the main manifestations of the state's authority existence.

In this sense, the budgetary action of the state should not always be considered harmful but also as a lever for development and a means of promoting the private sector, without having a negative impact on economic life in the case of Morocco. (The financing of the budget deficit does not seem to hinder business investment, term deposits, or medium- and long-term credits or even cause an increase in interest rates). (El Hiri Abderrazak, 2018, page 386).

Fiscal policy can be considered a very important policy that has already caught the attention of many heights and economists throughout history.

To clarify, if we want to appreciate, measure, and treat the impact of fiscal policy on the country's economic growth, we will find in the literature review several authors who have already tried to discuss this problem in this sense, and we can cite the following examples:

A study was conducted by Brun, J. F., Chambas, G., & Combes, J. L. (1998). To analyze the influence of taxation on growth and clarify the relationship between tax policy and economic growth. Another study was carried out by Maxime, A. T. & Toussaint, O. S. (2019). Published

in European Scientific Journal October 2019. This study addressed the effectiveness of taxation in achieving economic growth.

Another case was treated concerning the African continent, which tried to measure the role of tax policy in increasing tax revenue through an empirical analysis. This was done by Avom, D. (2011). In this sense, another study was carried out for the case of Morocco, which treated taxation as a required policy to achieve the economic development of the country as well as for inclusive growth for the eradication of poverty and the reduction of inequalities. (DINAR, B., & MAHZOUM, A. (2022).

Another study that proposed a theoretical model explains the effects of fiscal and monetary policy on the financing of state projects. A Minea, P Villieu - Economic Review, 2007, proposed this model.

In addition, to our subject, we can add the research of K Lahlou, which has shown the role of taxation as a priority objective of growth in Morocco (K Lahlou - Economic criticism, 2016).

In our article, we present two main issues:

Is the fiscal and tax policy having an impact on the economic growth of the country?

In addition, how can these two policies close the public budget deficit?

To discuss the issues and answer the previous questions, we make the following assumptions:

H1: We assume that budgetary and fiscal policy have an impact on the economic growth of the country.

H2: We assume that tax policy plays a very important role in increasing the national income of the state. Hence, it can lower the state budget deficit.

3. the most important fiscal and tax policy objectives

3. 1 The optimal distribution of income

National income distribution refers to the way income is distributed among social classes and strata; thus, the income of each class or segment is determined based on its contribution to production and the amount of its ownership.

The dominant social system determines the forms of distribution as a production in the capitalist system, which is based on private ownership of the means of production, while

Production in the socialist system is based on public ownership of the means of production and effective participation.

In the process of production, fiscal policy has a major role in the process of income distribution using its spending tools.

After all these steps, the state redistributes income to disadvantaged classes by directing public expenditure to establish service facilities and provide subsidies of various kinds. On the other hand, they impose high taxes on those with high incomes and low taxes on those with modest incomes because tax is one of the most important tools used by the state (tax policy).

In this sense, it can be deduced that the state links great importance to the distribution of income and influences this process by using fiscal policy to achieve greater equity in the distribution of income and impose low rates on those with low incomes and impose high rates on those with high incomes.

Spending policy is one of the most important tools of fiscal policy to achieve optimal distribution. As a result, this leads to positive effects:

- Increasing public spending through health, education, and social services for those with limited income.

- The production subsidy policy results in lower prices of goods for the benefit of low-income people.

Thus, one of the main objectives of fiscal policy is to achieve justice in the distribution of

national income.

Thus, the great disparity in living standards disappears, which involves working to change the distributional pattern.

3.2 Financing public expenditure

The financing of public expenditures is usually considered to be the main function of fiscal policy Anderson, W., Wallace, M. S., & Warner, J. T. (1986). Consequently, the tax must correspond to the services rendered, that is, the payment of the state for the protection of the rights that it dispenses.

3.3 Redistribution

Redistribution aims to correct inequalities in the distribution of income and wealth. It can take either monetary or nonmonetary forms. Traditionally, two dimensions of redistribution are distinguished.

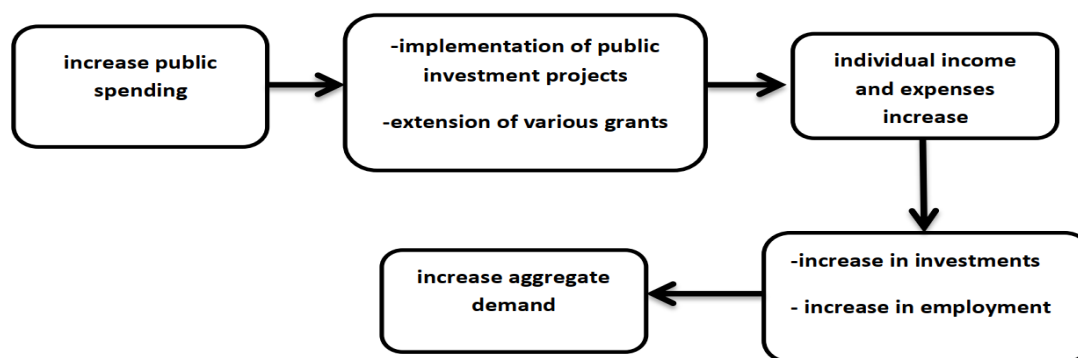
3.4 Regulation of economic activity and Stabilization

To control the macroeconomic balance, ensure growth, and to move towards full employment, a distinction is usually made between policies centered on demand aimed at supporting or reviving economic activity and policies favoring supply, which are more restrictive, favorable savings and/or seeking to improve business competitiveness.

3.5 Tax Incentives and manipulation of Behavior

Tax incentives aimed at manipulating the behavior of economic agents occupy an increasingly important place in tax policies. Fiscal interventionism Ikeda, S. (2004). has been practiced, in a massive way, for a very long time, but it had above all an economic and social vocation. In recent times, tax incentives have been increasingly used to discourage harmful activities or positively encourage socially valued activities.

Fig. 1 The effect of government spending on aggregate demand



Sources: the authors

3.6 Achieving economic development

Economic development is one of the most important priorities on which countries depend, to achieve economic development, the state relies on many means and tools that help and enable it to achieve growth.

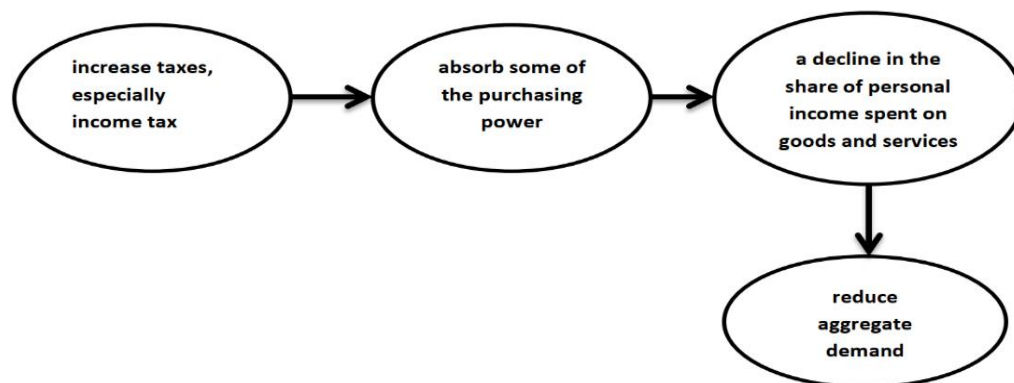
Fiscal policy is one of the main ways to achieve comprehensive economic development through its various tools. Whether it is revenue or public expenditure, tax, as an important part of state revenue, plays an important role in economic development, and it is one of the important and necessary economic methods that stimulate state revenue and have a positive impact on the financing of state projects and various social programs and investments, which are considered

to be one of the most important drivers of development.

The budget is related to the decisions and actions taken by the state vis-à-vis its revenues and expenditures, which affect economic development by influencing the investment climate and by providing infrastructure, which is considered to be one of the pillars of investment.

In this sense, the State can, through taxes and tax breaks, contribute to the encouragement of investments and thus advance economic development.

Fig. 2 The effect of taxes on aggregate demand



Sources: the authors

3.7 Economic stability

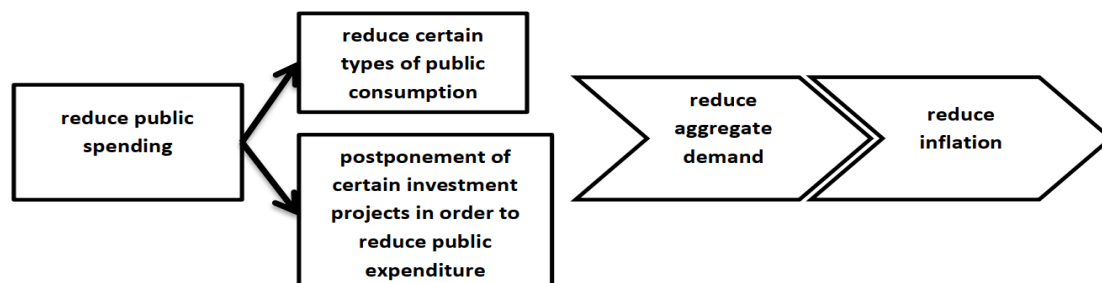
Each country seeks to achieve many different goals, including economic stability. To fulfill this, it uses its various available policies.

To achieve economic stability, fiscal policy plays a major role in dealing with the changes that attack the national economy. This is done through stabilization at the level of employment, production, and prices.

Because the government's policy on spending and raising money has important effects on the level of employment, output, and prices.

The function of economic stability is to improve the balance of the national economy, both internally and externally, maintaining the capacity of production and the achievement of the general relative stability price level. In this respect, it is one of the most important means that the state uses to control its economic conditions, especially when faced with any economic problems in terms of inflation or stagnation.

Fig. 3 The effect of spending on inflation



Sources: the authors

4. Fiscal policy and its role in controlling inflation

In addition to the public spending policy and the public borrowing policy that the government uses to achieve economic balance

The treatment of economic problems, including inflation and depression, also depends on another policy, which is fiscal policy. This latter is undoubtedly considered to be among the most important policies on which the state relies to address the economic imbalances it faces. To achieve its different objectives, fiscal policy is the sum of fiscal measures taken by the state to collect taxes to use them as a tool and a policy to achieve its various economic and social objectives.

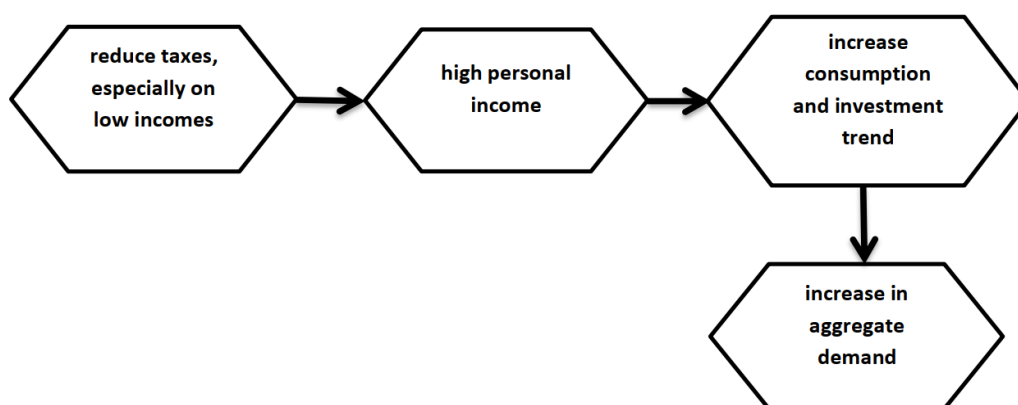
Taxation is one of the most effective tools to fight inflation and depression. In the case of inflation, taxes play a major role in absorbing the liquidity circulating among individuals by increasing its ratios. For example, income tax has a major role.

Reducing inflation, because it is a tax on income and the increase in the rates of these taxes reduces the income of individuals, and therefore their purchasing power, decreases the amount of money spent on the spending process, and absorbs the money supply.

In this case, inflation rates decrease, but in the case of depression, it plays a major role in encouraging demand and stimulating economic mobility (Charles Waline, «The state budget», Paris French documentation, 2006, P10).

On this basis, we note that many economists prefer to rely on fiscal policy to address inflation and recession because of its flexibility and effectiveness.

Fig. 4 The effect of tax cuts on aggregate



Sources: the authors

5. Fiscal and budgetary policies to address the impact of the COVID-19 pandemic

This section is not devoted to discussing COVID-19 but simply to considering the role of state policies to counteract crises and maintain a sustained level of growth through fiscal and monetary stimulus packages taken by countries to cope with the outbreak of the COVID-19 epidemic and mitigate the impact of the pandemic on economic growth and employment.

The COVID-19 outbreak occurred in China in December 2019 and took a heavy toll on human lives and economic activity. Many countries took a wide range of measures to contain the outbreak, such as a complete shutdown and travel ban, which led to a reduction in the movement of individuals and the disruption of several economic sectors, which prompted states to adopt many rapid and broad fiscal and monetary policies.

For Morocco, these stimulus packages aim to mitigate the immediate impact of a sharp drop-in economic activity on the business and family sectors and to maintain productive capacity.

Despite the various financial and monetary packages implemented, the damage was great. These measures aim to help the business sector retain employees by implementing certain short-term work plans or wage subsidies to keep them in their jobs, support income and reduce job

losses during the pandemic.

In this sense, we can infer the example of the single professional contribution (CPU) finance law 2021 that comes to replace the flat rate benefit applied for professionals in income tax. This contribution is more than a fiscal aspect; it is a social aspect that consists of effecting a complementary right intended for social benefits covering medical coverage.

A second example is the social solidarity contribution (article 267 CGI/LF 2021), which is considered to be one of the key measures of the 2021 finance law; it is a levy of 1.5% for employees who earn a net monthly salary of 20,000 DH and another levy for companies, as explained in the following table:

Table N° 1. The rates of social contributions for societies

Net income	Rates
1.000.000 Dh to 5.000.000 Dh	1.50%
5.000.000 Dh to 40.000.000 Dh	2.50%
Above 40.000.000 Dh	3.50%

Source: 2021 Finance Law

6. Methodology and Data

In this section, we analyze the link between economic growth, public expenditure, and tax revenue in a vector autoregressive (VAR) framework. The VAR model was developed by Sims (1980) for estimating unrestricted reduced-form equations that have uniform sets of lagged dependent variables as regressors. The VAR model is simply a system of dynamic simultaneous equations, free from a priori restrictions on the structure of the model. Since no restriction is imposed on the structure of the system, the VARs can be considered an approximation of the reduced form of the model correctly specified but whose true economic structure is unknown. Thus, since structural models are very often poorly specified, the VAR model is then particularly essential to understand the dynamics of empirical data.

Definition and sources of variables

The macroeconomic variables used in this estimation were taken from the World Bank database. The variables cover the period from 1990 to 2020, a period of 30 years.

- **Gross Domestic Product:**

Gross domestic product (GDP) is the total monetary or market value of all finished goods and services produced within a country's borders during a given period. It counts all production generated within a country's borders. GDP also includes part of nonmarket production, such as defense or education services provided by the government. As a general measure of overall national production, it functions as an effective indicator of the economic health of a given country.

- **Final consumption expenditure:** Final consumption expenditure is the sum of final consumption expenditure by households and final consumption expenditure by the general government. Household final consumption expenditure includes expenditures incurred by the resident household for goods or services that are used for the satisfaction of needs or wants. General government final consumption expenditure includes all current government expenditure on purchases of goods and services (including compensation of employees). It also includes most spending on national defense and security.

- **Tax revenue:** Tax revenue is defined as revenue from income and profit taxes, social security contributions, taxes levied on goods and services, payroll taxes, taxes on property, and transfer of property and other taxes.

• Vector autoregressive (VAR) model

The VAR (vector autoregressive) model is one of the most efficient and flexible models to use for multivariate time series analysis. It is a natural extension of the univariate autoregressive (AR) model to multivariate dynamic time series. The VAR model is very useful in describing the dynamic behavior of economic and financial time series. It often provides superior predictions than univariate time series models and theory-based simultaneous equation models. Predictions from VAR models are quite flexible, as they can be conditioned on the potential future paths of variables specified in the model. In addition to data description and forecasting, the VAR model is also used for structural inference and policy analysis.

On the one hand, the VAR model is relatively easy to estimate. One can use the least squares method (OLS), the maximum likelihood method (ML), or the Bayesian method. For a VAR model, least squares estimates are asymptotically equivalent to ML estimates and ordinary least squares (OLS) estimates. However, the properties of VAR models have been studied extensively in the literature. Moreover, VAR models are similar to multivariate multiple linear regressions widely used in multivariate statistical analysis.

The general writing of a VAR model with K variables and P lags (denoted VAR (p)) is written in matrix form:

$$Y_t = A_0 + A_1 Y_{t-1} + A_2 Y_{t-2} + \dots + A_p Y_{t-p} + v_t$$

Avec: $Y_t = \begin{pmatrix} y_{1,t} \\ y_{2,t} \vdots y_{p,t} \end{pmatrix}$; $A_{i \neq 0} = (a_{1i}^1 \ a_{1i}^2 \ \dots \ \vdots \ \dots \ a_{ki}^1 \ a_{ki}^2 \ \dots \ a_{ki}^k \ \vdots \ a_{ki}^k)$; $A_0 = (a_1^0 \ \vdots \ a_k^0)$; $v_t = (v_{1t} \ \vdots \ v_{kt})$

• Correlation between variables

According to the correlation matrix, there is a positive linear relationship between Moroccan economic growth (GDP), tax revenue, and final consumption expenditure. First, the strongest relationship is between GDP and FCE, with a coefficient of 0.976. However, the correlation between GDP and TR is also strong, with a coefficient of 0.96.

7. Results and Discussion

7.1 Heteroscedasticity test

The table shows the results of the heteroscedasticity test for the VAR model. It can be deduced that the critical probability of the test statistic is 0.08, higher than the risk threshold of 5%. We can accept the null hypothesis of homoscedasticity, that is, that the variance of the residuals of the VAR model is stable.

Table 2. The results of the heteroscedasticity test

Chi-sq	Df	Probability
68.65420	54	0.0865

Sources: the authors

The other validation criterion of the model is to verify that the residuals of the model follow a normal distribution. The Jarque-Bera test is performed to verify this property. The results are given by model variables, and on the last line, we find the result for the model as a whole.

Table 3. Jarque-Berra test

Components	Jarque-Berra	Df	Probability
1	0.419760	2	0.8107
2	2.656015	2	0.2650
3	102.1680	2	0.0000
Joint	105.2438	6	0.000

Sources: the authors

For GDP, the critical probability of the Jarque-Bera statistic is 0.8107, well above the 5% threshold. Therefore, we can deduce that the residuals of the variable GDP in the VAR model studied follow a normal distribution and the same goes for LDCF. The critical probability of the Jarque-Bera statistic is 0.000 for the LRF variable, so we cannot accept the hypothesis that the residuals of this variable follow a normal distribution. Additionally, the test shows that for the global VAR model, we have a critical probability of the Jarque-Bera statistic of 0.00. In this case, we are not able to accept that the residuals of the model follow a normal distribution. Violation of this assumption is not a problem in VAR models; thus, one can proceed to the analysis of the estimated VAR model.

7.2 Study of the stationarity of the variables

The notion of stationarity refers to the momentum dynamics of a time series. A time series is stationary when these stochastic properties do not depend on the time of the observation of the series. The time series presenting a trend or seasonality are not stationary; these two components will modify the value taken by the series at different times. Thus, a nonstationary time series will not present either an obvious or a predictable modality. Moreover, stationarity plays a major role in time series analysis because it naturally replaces the assumption of independent and identically distributed observations in standard statistics. Ensuring that the increase in sample size is accompanied by a corresponding increase in information. Unit root tests allow not only the detection of the existence of nonstationarity but also the determination of what nonstationarity it is and therefore the right method to make the series stationary. The Dickey-Fuller (DF) tests make it possible to highlight the stationary character or not of a chronological series. Here, we use the augmented Dickey-Fuller test, which is more general and widely used in empirical studies of time series. The test proceeds similarly to simple DF tests, Only the statistical tables differ. The value of p can be determined according to the criteria of Akaike or Schwarz

Table 4. Augmented Dicky-Fuller Test (ADF)

Variable	ADF		Order of Integration
	Level (P values)	t-Statistics (P values)	
LnPIB	8,39 (1.000)	-8,37 (0.000)	I(1)
LnDP	3,283 (0.99)	-3,45 (0.0012)	I(1)
LnRF	2,11 (0.99)	-2,101 (0.0362)	I(1)

Sources: the authors

7.3 Determination of the optimal delay

To determine the order of a VAR model, we can use several information criteria: Schwarz Criterion (SC), Akaike Information Criterion (AIC), Final prediction Error (FPE), and Hannan-

Quinn information criterion (HQ). The procedure for selecting the optimal number of lags consists of estimating all VAR models for an order up to the maximum allowable lag. Thereafter, we choose the delay p that minimizes the fixed information criterion, which is retained as the order of the VAR model. The choice of the number of lags of the considered model is very important since it influences the results of the estimations as well as the number of existing cointegration relations. To make this choice, we use the calculation of the information criteria. The values of the information criteria for the different delays are given in the table below. Thus, the number of delays to retain is equal to 1, the one that minimizes the majority of the calculated information criteria.

Table 5. Optimal delay

VAR Lag Order Selection Criteria

Endogenous variables: LOG PIB LOG FISCAL LOG DEPENSE

Exogenous variables: C

Date: 09/17/21 Time: 13:46

Sample: 1990 2020

Included observations: 28

Lag	LogL	LR	FPE	AIC	SC	HQ
0	36.47664	NA	1.84e-05	-2.391189	-2.248453	-2.347553
1	127.2761	155.6562*	5.36e-08	-8.234006	-7.663062*	-8.059463*
2	137.5175	15.36206	5.04e-08*	-8.322676*	-7.323522	-8.017225
3	141.0878	4.590496	7.93e-08	-7.934846	-6.507484	-7.498487

*Indicates lag order selected by the criterion; LR: sequential modified LR test statistic (each test at the 5% level)
FPE: Final prediction error; AIC: Akaike information criterion; SC: Schwarz information criterion; HQ: Hannan-Quinn information criterion

Sources: the authors

7.4 Cointegration test

Before moving on to estimating the VAR model, we must determine whether there are cointegrating relationships between the variables. The notion of cointegration addresses the dynamics of a multivariate time series. Often, in practice, each individual component of a multivariate time series is not stationary, but some linear combinations of these components are stationary. Cointegration studies the effects of these combinations and the relationships between the components. Since the variables studied are all integrated of order 1, $I(1)$, there is possibly a cointegration link between them.

From the result of Johansen's cointegration test, it is obtained that the model does not contain a long-term relationship between the variables. The number of delays retained is $p=1$. Therefore, we estimate a VAR (1) model.

7.5 Model estimation

The parameters of the VAR model are estimated with an optimal delay of 1 by the method of least squares. The results of the estimation are shown below.

Table 6. Estimation of the VAR (1) model

	L GDP	LFCE	LTR
L GDP (-1)	0.841632	-0.056614	0.040869
	(0.10663)	(0.24716)	(0.33416)
	[7.89287]	[-0.22906]	[0.12230]
L FCE (-1)	-0.015177	0.739749	0.169562
	(0.07164)	(0.16606)	(0.22452)
	[-0.21184]	[4.45467]	[0.75523]

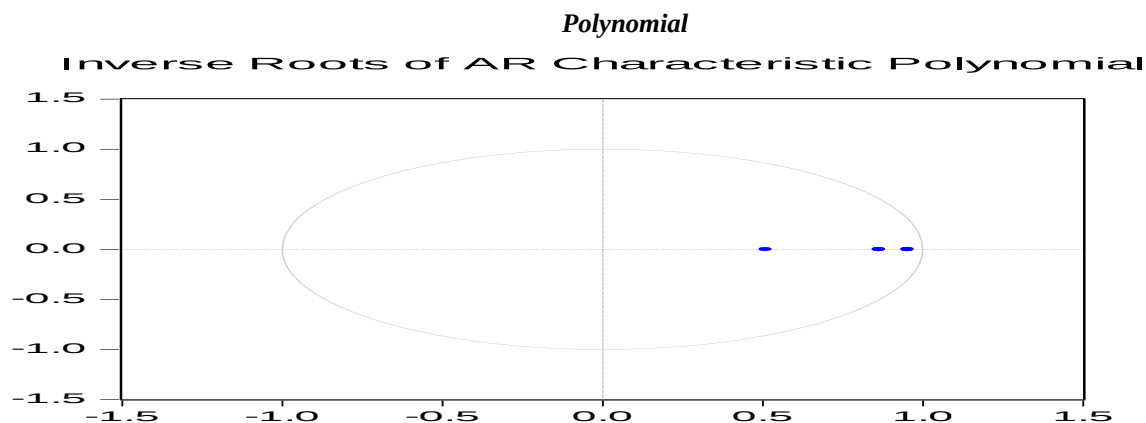
L TR (-1)	0.139795	0.266753	0.748313
	(0.10956)	(0.25395)	(0.34334)
	[1.27594]	[1.05041]	[2.17950]
C	1.198304	1.811266	0.757130
	(0.61521)	(1.42597)	(1.92791)
	[1.94781]	[1.27020]	[0.39272]
R-squared	0.995545	0.977625	0.963267
Adj. R-squared	0.995031	0.975044	0.959028
Sum sq. resides	0.027597	0.148269	0.271022
S.E. equation	0.032580	0.075516	0.102098
F-statistic	1936.712	378.6747	227.2679

Sources: the authors

7.6 Model Validation

To confirm the stationarity of our model, we examine the circle of eigenvalues. We note that all the roots associated with the AR part belong to the complex unit disk, so the estimation of the VAR model is indeed stationary.

Fig. 5 Inverse roots of the AR characteristic



Sources: the authors

Subsequently, to examine the residual autocorrelation of the VAR model, we perform the lag range multiplier (LM) test, which tests the significance of the residual autocorrelation up to the selected number of lags. The results below obtained by Eviews 10 show that the probabilities are well above the 5% threshold. Therefore, we cannot reject the null hypothesis of no residual autocorrelation, which verifies the absence of residual autocorrelation.

The heteroscedasticity test is important to ascertain whether the residuals constitute white noise. According to the results below obtained by Eviews 10, there is homoscedasticity of errors because 0.0865 is greater than 0.05.

7.7 Model Validation

To examine the residual autocorrelation of the VAR model, we perform the Lagrange multiplier (LM) test, which tests the significance of the residual autocorrelation up to the selected number of lags. The results below obtained by Eviews 10 exhibit that the probabilities are well above the 5% threshold. Therefore, we cannot reject the null hypothesis of no residual autocorrelation, which verifies the absence of residual autocorrelation.

The heteroscedasticity test is important to ascertain whether the residuals constitute white noise. According to the results below obtained by Eviews 10, there is homoscedasticity of errors because 0.0865 is greater than 0.05.

Fig. 6: The heteroscedasticity test

Chi-sq	df	Prob
68.65420	54	0.0865

Sources: the authors

7.8 Interpretation of econometric results

With the model being validated from an econometric point of view, we proceed in this section to the interpretation of the results obtained. According to the results of the estimation of the VAR model, the equation that gives GDP as a function of tax revenue and final consumption expenditure is the following:

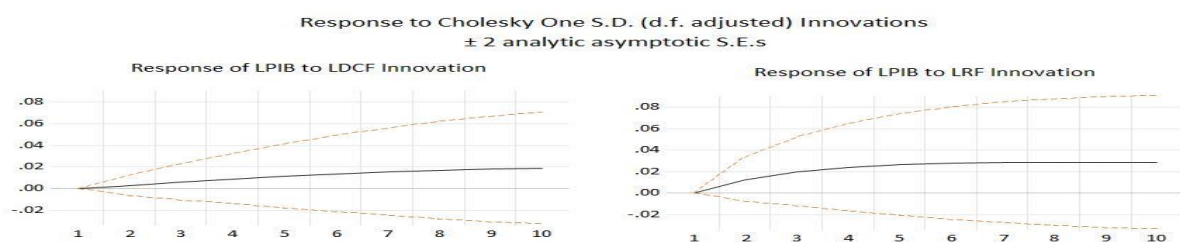
$$LPIB = 1.19 + 0.84 \times LPIB_{(t-1)} - 0.02 \times LDCF_{(t-1)} + 0.14 \times LRF_{(t-1)}$$

Observation : (Gross Domestic Product: PIB, Final consumption expenditure: DCF, Tax revenue: RF)

Based on this equation, we see that an increase of 1% in LDCF implies a decrease of 0.02% in LPIB. In addition, a 1% increase in tax revenue causes an increase in LPIB of approximately 0.14%. Thus, tax revenue and final consumption expenditure have positive and negative impacts, respectively, on economic growth in Morocco. Subsequently, we use two instruments of analysis of the VAR model, the impulse response function and the variance decomposition, to inspect the dynamics that exist between the variables of this study.

We start by analyzing the impulse response function. This function is an important step in econometric analyses, which use autoregressive vector models. The main objective here is to describe the evolution of the variables in our model following a shock on one or more variables. This characteristic makes it possible to trace the transmission of a single shock within a system of equations and thus makes them very useful tools in the evaluation of economic policies. The figure below gives the response of the LPIB variable following a shock of the two model variables, namely, LDCF and LRF.

Fig. 7 The reaction of the gross domestic product after the change in final consumption expenditure and tax revenue



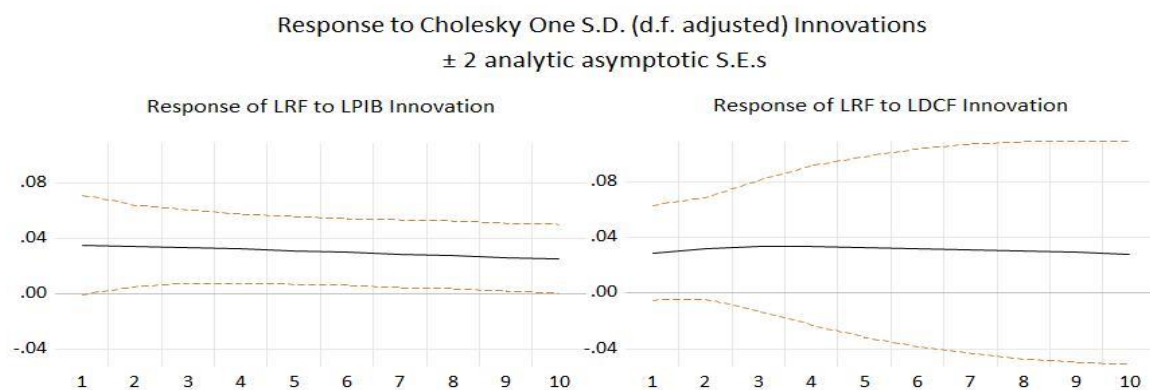
Sources: the authors

The graphical representation on the left side gives the reaction that the LPIB variable experiences for a shock of the LDCF variable. The figure shows that during the first year, there is an increase in LPI. This increase is almost nil and only becomes significant in the second year. This growth continues, and from the fifth year, the curve becomes almost constant. For this reason, we deduce that LPIB stabilizes on a new value that is higher than the initial value. Thus, a shock on LDCF induces a positive impact on LPIB. On the graph on the right, we have the response of LPIB following a shock of the LRF variable. It is observed that from the first year, LPIB presents an immediate increase. This growth of LPIB continues and presents a break from the second year. Between the fifth and sixth years, this growth of LPIB stabilizes. Thus, a shock on LRF implies a positive impact on LPIB. By comparing the two graphs, we notice that the impact of LRF on LPIB is immediate, from the first year, while that of LDCF is not

remarkable until the second year. In both cases, the variation in LPIB is minimal, between 0.01 and 0.02.

The analysis of the impulse response of the other variables will allow us to have a global vision of the dynamics, which exists between the three variables of our system. The figure below gives the response of the LRF variable following a shock of LPIB and LDCF. Note that a shock of LPIB causes a decrease in LRF; however, this decrease is minimal. During the first four periods, the LRF curve is almost constant, which further accentuates the weak impact on LRF. In the figure on the right, we observe that a shock of LDCF causes an increase in LRF, which is visible from the second period. Between the third and the fifth period, this growth of LRF stagnates and returns to its initial state from the sixth period. Therefore, it is inferred that LPIB and LDCF have negative and positive impacts, respectively, on LRF. For both variables, the effect is minimal, particularly for LDCF, and the impact of the shock on LRF disappears after five periods.

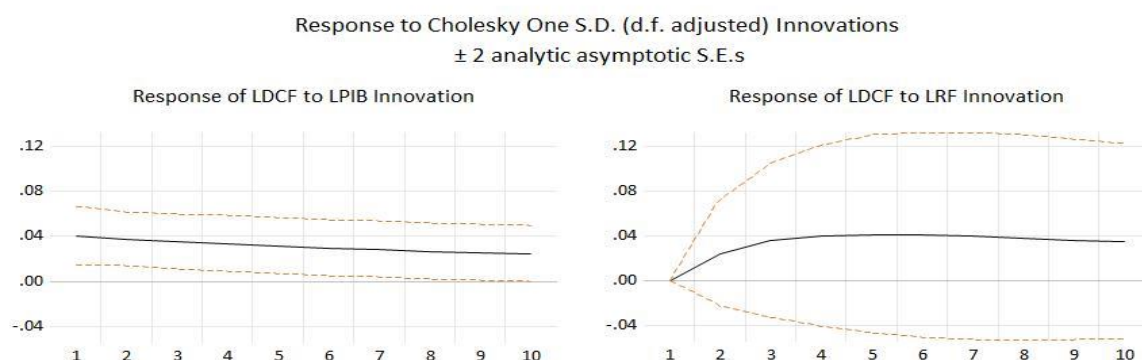
Fig. 8 The reaction of tax revenue after the change in final consumption expenditure and gross domestic product



Sources: the authors

The following figure shows the response of LDCF following a shock of LPIB and LRF. The effect of a shock of LPIB on LDCF is similar to that of the response of LRF for a shock of the same variable. There is a very weak and continuous decrease in LDCF from the second period. For an LRF shock, a significant and immediate growth of LDCF is observed. This increase stabilizes from the fourth period, and we notice a slight decrease, which starts from the eighth period.

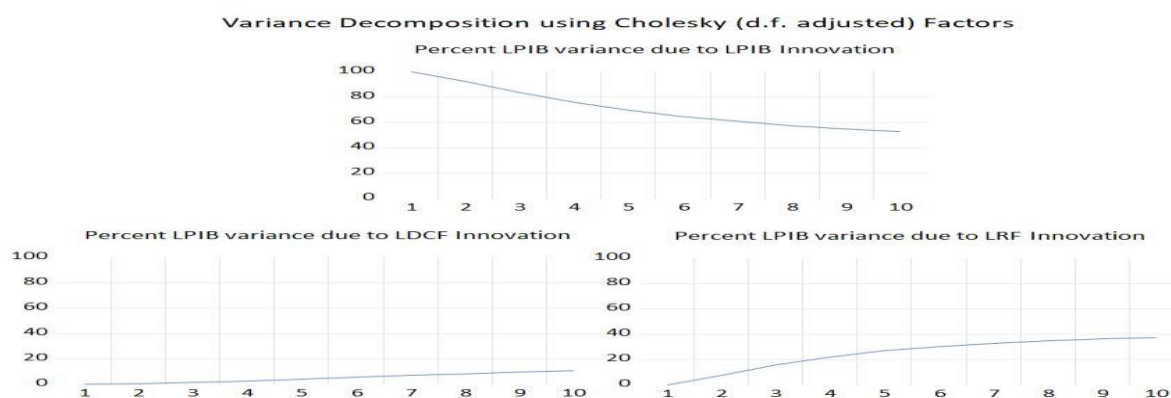
Fig. 9 The reaction of final consumption expenditure after the change in gross domestic product and tax revenue



Sources: the authors

Then, we move on to the analysis of the variance decomposition. The results of the variance decomposition are shown in the figure below. The decomposition of the variance of the LPIB variable shows that economic growth is largely explained by its shocks, followed by tax revenue shocks and final consumption expenditure. In the initial period, economic growth explains 100% of its variation, and the explanatory power decreases until the tenth forecast period, in which 53% of the variance is explained by its shock, followed by 10% and 37% for final consumption expenditure and tax revenue, respectively.

Fig. 10 Variance decomposition analysis



Sources: the authors

Therefore, the analysis of the impulse function shows that the effect on economic growth following a shock in tax revenues and a shock on final consumption expenditure is similar. Both variables induce an increase that results from a tax revenue shock and is immediate from the first year, while that of final consumption expenditure takes effect from the second year. The effect of the two shocks on economic growth stabilizes after the first five years. The analysis of the variance decomposition for the LPIB variables also shows that variations in economic growth are largely explained by their own variations and very weakly by tax revenue and final consumption expenditure. Therefore, we can say that the effect of tax revenue and final consumption expenditure is very low for Morocco.

At the level of our article, we started with useless theory to talk about economic growth and budgetary and tax policy.

Our theoretical study was also an opportunity to benefit from previous studies that have already dealt with the relationship between fiscal and fiscal policy and economic growth.

At the level of our empirical study, we tried first to expose the variables

Testing the relationship between the variables to verify the influence and impact of fiscal and tax policy on Moroccan economic growth

Our empirical study allowed us to validate the analysis model and verify the impact and influence of fiscal policy on growth.

In other words, a well-governed fiscal jewelry policy can affect economic growth

Our empirical study was an opportunity to treat the variation of a variable after a shock carried out at the level of another variable. This approach clearly shows that budgetary and fiscal policy can influence economic growth.

The shock analysis allowed us to deduce that each variation in tax revenue generates a variation in growth.

In addition, each variation in the level of expenditure causes a variation in the level of growth. However, what we have been able to observe in this direction and according to the results of our study. The influences remain small, in other words, we can say that other indicators have a very high and very large influence on Morocco's growth include. For example, the trade

balance, foreign direct investment, the industrial policy adopted by the State, and so on.

7.9 Comparison with other studies

The question of studying Moroccan economic growth and trying to find out the reasons that led to this development has attracted the attention of many authors and economists, and in this regard, we can compare our study with other studies. Related to the same topic. We cite for example a study entitled "The sources of economic growth in Morocco" which was carried out by the High Commission for Planning (2005), and analyzed Morocco's economic performance. This study showed a low rate of growth and which has adopted a sectorial analysis. According to this study, growth was driven by domestic demand (consumption plus investment) despite export promotion policies • the service sector began to emerge and grow in the 1990s.

In this perspective, we can cite another study entitled "The impact of taxation on the economic growth of Morocco" Hamzaoui, M., & Bousselhami, N. (2017). At the level of this study, the authors have shown that tax revenues can help public authorities achieve their economic and social objectives.

Without forgetting a third study, which focuses on, foreign direct investment and is entitled: Effects of FDI and trade openness on economic growth in Morocco. According to this study, FDI should be encouraged but it should be accompanied by trade openness to improve the country's economic growth, Mansouri, B. (2009).

8. Conclusion

Fiscal policy is one of the most important economic policies that have an effective and significant impact on the economic situation of a country.

Economic interest has increased since the onset of the recession, as fiscal and tax policy has proven their effectiveness in solving economic problems, and it is the main driver of the national economy in activating aggregate demand through expenditure policy.

Fiscal policy is a flexible policy capable of influencing many economic variables. It was developed as a solution for the economic imbalances it faces.

The general budget, which contains public expenditure and public revenue, is one of the most important tools used by countries to achieve the desired objectives since it has many characteristics that have made it of great importance in the world. National economy

The general state budget is governed by many rules, and its preparation process goes through many stages, perhaps the most important of which is the budget control process. Its rational use means the soundness of fiscal policy and the soundness of the financial situation of the state. On the other hand, its inconsiderate use can lead to falling into a financial imbalance, which is called the general budget deficit of the state.

By way of a synthesis of this work, our research is part of the response to the problem linked to the role of taxation and fiscal policy in achieving growth.

In our attempt to answer this problem. We first approached the study related to the previous literature, which is interested in the question of fiscal and financial policies and the question of economic growth. Then we asked about the theoretical bases to develop a roadmap that allows us to find a theoretical aspect to carry out a complete study and to develop the necessary pillars to give more value to this work and this research

We have adopted an econometric study with the VAR model, (vector autoregressive) which is one of the most efficient and flexible models to use for multivariate time series analysis. It is a natural extension of the univariate autoregressive (AR) model to multivariate dynamic time series.

The theoretical study and the empirical econometric study allowed us to properly frame our research, expose the problem with the hypotheses, carry out tests, and release results.

Through our research, we were able to deduce that the budgetary and tax policy have an impact on the economic growth of Morocco.

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