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Ekonomisi Üzerine Ampirik Bir Çalışma

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Effects of Monetary and Fiscal Policies on Economic Growth: An
Empirical Study On The Iraqi Economy

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Para ve Maliye Politikalarının Ekonomik Büyüme Üzerindeki Etkileri: Irak Ekonomisi Üzerine Ampirik Bir Çalışma

Öz

Çalışmanın amacı, para ve maliye politikalarının Irak'taki ekonomik büyüme üzerindeki etkilerini açıklamaktır. Bağımlı değişken ekonomik büyüme oranıdır ve bağımsız değişkenler döviz kuru, enflasyon, parasal bir araç olarak M2, mali araçlar olarak kamu borcu, kamu harcamaları ve devlet geliridir. Veriler Irak Merkez Bankası'ndan alınmıştır ve 2005-2019 dönemini kapsamaktadır. ARDL Bound Test ve OLS, sırasıyla para ve maliye politikalarının büyüme üzerindeki etkilerini tahmin etmek için kullanılmıştır. Para politikası açısından, döviz kurunun ekonomik büyümeye zarar verdiğini, enflasyon ve para arzının ise ekonomik büyümeyi olumlu etkilediğini ortaya koyulmuştur. Maliye politikası açısından bakıldığında, devlet borçlarının ve devlet harcamalarının büyüme üzerindeki etkileri olumsuz, devlet gelirleri ise olumlu olduğu belirlenmiştir.

Anahtar Kelimeler: Ekonomik Büyüme, Maliye Politikası, Para Politikası, Enflasyon, Devlet Gelir ve Harcamaları

Effects of Monetary and Fiscal Policies on Economic Growth: An Empirical Study on The Iraqi Economy

Abstract

The purpose of the study is to explain the effects of monetary and fiscal policies on economic growth in Iraq. The dependent variable is the economic growth rate, and independent ones are exchange rate, inflation, M2 as a monetary instrument, while public debt, public expenditure, and government revenue are as fiscal instruments. The data were obtained from the Central Bank of Iraq and covers the period of 2005-2019. ARDL Bound Test and OLS were used to estimate the effects of monetary and fiscal policies on growth respectively. As for monetary policy, the results revealed that the exchange rate harms economic growth, while inflation and money supply positively affect economic growth. In terms of fiscal policy, the effects of government debt and government spending on growth seemed to be negative, while government revenues seemed to be positive.

Keywords: Economic Growth, Fiscal policy, Monetary Policy, Inflation, Government Revenue, and Spending.

Introduction

Economic growth is the most important issue, especially in developing countries, as it is considered an indicator and a mirror reflecting the general economic situation. There are many inconsistencies and intertwining economic problems that the economist seeks to overcome, the best of which is fiscal and monetary policy.

The fiscal policy attains its place among other policies because of its merit in achieving national economic goals through its tools included in the most important economic management tools. But in fact, this policy was absent from the economic scene for a long time, until it was reborn,

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especially after the Great Depression in 1929, thanks to the contribution of the great economist Keynes.. John Maynard Keynes demanded the state's need to intervene in economic activity to move from the pattern of the guardian state to that of the intervening state.

The monetary policy represents the monetary aspect of macroeconomic policies. This requires a high degree of coordination with other economic policy tools, especially with fiscal policy. They are the most used ones preferred in various countries (regardless of the size or type of their economic systems) to achieve economic growth. These policies lead to improving the population's standard of living, providing employment opportunities, and reducing unemployment, as well as stimulating economic performance through increased investment and production.

In that context; the study aims to examine if the fiscal and monetary policies affect the growth in Iraq or not. The conceptual structure of the monetary and fiscal policies was argued in the first part of this study. In the second part of the study, the literature was reviewed. Our examination approach has been stated in the fourth chapter, and the outcomes and their related comments are in the fifth and sixth chapters, respectively. All of the suggestions for the people in charge and prospective studies have been discussed in the final section.

1. Conceptual Framework

Under any regime, the purpose of economic activity is to meet the needs of society. People earn profits, consume, save, and invest. Society pays taxes, and also accordingly the states are supported by all of them. Therefore, money flows, and the different parts' interrelationships can be seen in an economy (Trotman1996:6).

The interaction between the general and the special financial policy, fiscal and monetary policies, is always in a direction that results in the increment in their influences on incomes, interest rates, inflation, exchange rate expenditures, and the rest of the prominent economical earnings. Without considering all possible strategies, we are unable to foretell the impacts of one type. If we are to reach our wanted economic ends of inside and outside equilibrium in the global scale, the related people in charge shall use the special form of financial policy to make an impact on the various aspects of paying methods, such as value, amount and the presence of money. This procedure has been devised to manipulate the money sums in the economy, by acclimatizing the sources of money, and/or the rate of appeal. For this reason, this policy is always being followed by several nations, which acts as an organizer for ensuring the rise and the improvement of the economy overtime. Historically, this fixed plan and the way of joining of money effects in creating the economy returns to Adams

Smith's era, which was developed later by those economists who were studying monetary (Bain and Howells, 2003:14-15).

Monetary economics is a branch of economics based on the economy's capital and monetary ties. It concentrates on the links between money and prices, output, and employment and so is the development of macroeconomics. The relationship between the rate of growth of the supply of money and the rate of inflation has been of particular concern to monetary economists. Some countries have taken many important institutional decisions regarding monetary policy works. One of the most important goals of monetary policy is to know what governments or the central bank can do to improve the way monetary instruments are dealt with to avoid harming the real economy's performance (Ufoeze et al., 2018:2).

The aim of the fiscal policy, is to go through the intentional actions of the government in expenditures and payable taxes to orient the macro-economic factors in the intended path. It contains the stable escalation of the economy, increase in the employment rate, and the decrease in inflation. Due to this, the general policy is planning to decrease the variations and to fix the status of the economy (Ogbole et al., 2011:3-4). If the government's expenditure grows or the taxation collapse, the economy would fall and the business status would become unsuccessful, and vice versa (Dornbusch et al., 2011). So, fiscal policy, as an element of economic policy, contributes to the implementation of the economic program and plays an active role in achieving it, provides theories and solutions, confronts strategies, and makes choices and decisions as well as actions to achieve them (Jeffrey, 2019:4). Hemming et al. (2003) suggest that fiscal policy's effect on economic activity may also depend on structural factors such as internal and external lags, considerations or factors of the political economy, and level of growth.

Despite its simplicity, the exchange rate, which means "the process of exchanging one currency for another," leaves significant impacts, both negative and positive, on the economy when it changes up or down without planning (Eichenbaum et al., 2017). The difficulty lies in how the economy's sustainability affects the outside world and not the other way around—the less durable the economy, the greater control over the outside world via the exchange rate gateway. An unstable economy will need to engage with the outside world to meet its needs (Bernanke, et al., 2008). They stressed that the decline in currency exchange rates does not indicate economic weakness. On this basis, any country can reduce the exchange rate for increasing economic activity at the local and global levels while revitalizing its economy by increasing production and increasing its exports (Riyadh et al., 2017). In some countries, especially developed countries, there is a causal relationship with economic growth. Sometimes, there is a two-way causal relationship, which means that exchange rate fluctuations affect economic growth, and economic growth influences the exchange rate volatility (Korkmaz, 2013:2-3).

One of the most important considerations in the formation of the economy and the financial policies, is the correspondence between the economic surge and the inflation, though we have not yet reached the precise form of this interaction. A moving interaction of the mentioned factors are present both in the developed and developing nations. According to the properties of the region, i.e. earning money from investments or not, the influence of the protuberance alters within different countries. A minus dependence is generally provided between the protuberance and growth, particularly in promoted economies (Foluso et al., 2017). With regards to the developing economies, the growth could improve, in case of the reduced protuberance (Mallik and Chowdhury, 2001; Rapach, 2003; Ben-habib and Spiegel, 2009; Kasim, 2012). According to Wai (1995), another cause for the unpredictable correspondence between the protuberance and the rise of economy, is that their relation is in fact negligible.

The relationship between economic growth and inflation is of great importance in the economy and monetary policy composition. However, the exact relationship between them has not been determined. There is a dynamic relationship between growth and inflation in both developing and developed countries. The effect of inflation on economic growth varies from one country to another, depending on the characteristics of the states as rentier or productive. In general, there is overwhelming support for a negative relationship between inflation and growth, especially in advanced economies (Foluso et al., 2017). As for developing economies, low inflation positively affects growth (Mallik and Chowdhury, 2001; Rapach, 2003; Benhabib and Spiegel, 2009; Kasim, 2012). There is another reason for the causal relationship between inflation and economic growth. Wai (1995) concluded that there is no significant relationship between them.

A vital factor in the macroscopic scale of the economy, is the stockpiling of money, which impacts the rise in the economy through guaranteeing the maintenance of economic chores, regardless of the type of the economical section (i.e. private or state) (Prasert et al., 2015).

A money supply can have a positive effect (Ogunmuyiwa and Ekone, 2010). The monetarists claim that the supply of money is an instrument that gives economic growth a boost based on an unforeseen rise in the stock of money (Jawaid et al., 2011). However, the supporters of the Maynard Keynes theories claim that this effect is of much less importance (Twinoburyo and Odhiambo, 2017). All results indicate that the money supply, negatively or positively, depends on the amount of liquidity offered and the central bank's monetary policy to achieve equilibrium.

Public finance investigators and the great scale economical patterns always worry about the coincidence between the rise in the economy and the government's expenditure, and they emphasize the expenditure impacts on the escalation of the economy. Whether the increasing government's

expenditure help or ruin the escalation in the economy, is a fundamental question to be responded in the growth theory.

Neither the theoretical nor the experimental investigations are able to give a determinant result, without being antithesis. Although the theories of Keynesian and Wagner are in the side with the direct relation between the people's expenditures and the escalation in the economy, laissez-faire supporters are on the opposite side, claiming that this has a negative side by providing no opportunities for developing. The latter view indicates that the total efficiency of the economy will lessen due to the people's expenditure (Nurudeen and Usman, 2010). The decrease in the sectional dissimulations and the improvement of the social dorsal due to the act of the public spending, is making the foundation of the escalation in the economy, according to Josaphat and Oliver (2000). This spending could serve as a merit for the economic escalation, if being outlay in great scales.

Catastrophes such as wars and pandemics, result in the financial breakdowns, and recently several countries are asking the people to pay more for their debts. Due to this, this topic has now become a controversial concept for studying, to examine the influences on the escalation in the economy, particularly after the attempts of Reinhart and Rogoff (2010), which summed up that public debt harms economic growth when it reaches more than 90% of the GDP (Kumar and Woo, 2015). Countries that resort to public debt for short periods have a positive effect because most short-term debts are paid quickly (Elmendorf and Mankiw, 1999). The direct negative effect of growth on public debt in high-debt countries is compounded by an increase in the long-term real interest rate which in turn lowers interest-sensitive demand and contributes to a further rise in the public debt ratio. Public debt has negative and positive effects. First, the debt period is long or short term. Second, the purpose of the debt is for investment, operating expenses, or emergency purposes (Jacobs et al., 2019).

Revenues include two types, the first is revenues collected through taxes and fees, and the second is that they are obtained from natural resources. It is most likely that tax receipts are the most important source of general government revenues in most countries. However, government receipts from non-tax sources call for examination. Non-tax revenues from foreign aid and oil resources contribute to the system's stability in both developed countries and developing countries (Mourre and Reut, 2018). Tax collection in developed or developing countries lacks mechanisms for implementing taxes that help them develop infrastructure and contribute to economic growth. Thus, taxes have one way to generate income in any government to meet citizens' needs. The lack of correct collection methods leads to lower economic growth (Abiola and Asiwah, 2018). In developed countries, taxation is significant because it is one of the important revenues at the core of their development. Taxes are imposed according to sophisticated mechanisms and policies to reach the largest possible revenue

contributing to economic growth as declared by Morrison (2009), the matter is how these revenues are used to contribute to growth.

2. Literature Review

Since the 1970s, monetary policy has had some benefits over fiscal policy and that is because of the lack of political influence, as defined by the central bank. Moreover, fiscal policy also has significant impacts on the economy, particularly in tax and non-tax revenue collection and spending control.

The escalation in the economy will have more positive outcomes, when it comes to the relation between the special and general type of financial policy, according to some researches (Friedman and Meiselman, 1963; Elliott, 1975; Rahman, 2005; Senbett, 2011). For the equilibrium of the economy in macroscopic scales, the special policy of finance is more efficient. However, by referencing to the researches done by (Ajisafe and Folorunso, 2002; Adefeso and Mobolaji, 2010; Ajisafe and Folorunso, 2002; Chowdhury, 1986. Mohammad, et al., 2009), this balance is more related to the expenditures of the government and tax variations than this kind of financial policy.

A scheme has been conducted in Nigeria by Tule et al. (2020), to display the coordination between these financial policies from 2003 to 2017. According to the conclusion, these financial policies boost the growth in the economy, regardless of putting the prices in the peril of being harmed. Thereafter, if we utilize the general kind of financial policy in major projects, the economy would be improved and fasten any activities which is related to the requirement of private section of money profits, in the economy.

Alkasasbeh (2018) found that the relationship between fiscal policy and economic growth is not clear. There is a positive relationship in some cases, while there may be a negative relationship in others. These cases are related to the economic reality of the country. Cyrus (2014) used the (VAR) model in Kenya and found that fiscal policy has a significant impact on economic growth, unlike monetary shocks, which are not significant in Kenya.

With regards to the Jordan, Mugableh (2019) stated that there is a same emotion and interest between the general wealth and the escalation in the economy, which proved to be useful. They extracted the corresponding information from 1978 to 2017, and self-distributed lag models and also the error correction model of Vector has been modified. They obtained that, in the long term, the spending of the government could be beneficial for the economy to level up. More clues for this topic have been investigated by Hasnul (2015) in Malaysia from 1970 to 2014. Accordingly, this spending can be categorized into two section, operating and development spending, and

these results are the outcomes of the OLS. Furthermore, he uncovered the minus correlation of spending and surge in the economy. In this idea, the small improvement in the economy is a result of excessive financial care on residency and the part which is related to the development. It is also interesting to note that other aspects such as education, defense, health care and costs of other activities have no contribution.

According to the study conducted by Bayrak (2019) on Turkey, the optimal value of defense expenditure, which triggers the growth, is 2.5 % of GDP. In other research employed by Bayrak (2020), it was found that the optimal value of public expenditures for Turkey, Bulgaria, and Tunisia seemed to be 23.03%, 22.78%, and 21.77%, respectively.

There could be some periods, in which, according to Onuorah and Akujuobi (2012), the escalation of the economy could fluctuate, and the outside factors act in an antithesis way in the GDP. If we consider Nigeria, for instance, the outcomes of the study exhibit that the expenditure of the population and the escalation in the economy have no statistical correlation. By using the information from 10 selected countries from Central and Eastern Europe from 1995 to 2015 Lupu et al. (2018) showed that in the autoregressive distributed lag (ARDL) model, the coordination between various types of the people's expenditures and the rise in the economy can be uncovered. Moreover, it has found out that if we invest on the education and health care, it is beneficial for the economy, and on the other hand, too much spending on security services, foreign affairs, public services, and social welfare is harmful. However, according to Nyasha and Odhiambo (2019), no precise relation between the government's expenditure and the surge in the economy. Despite this, the process of measurement is directed upward. The same distributed self-regression model (ARDL) has been conducted by Ali et al (2013) from 1972 to 2009 to detect any impacts of the spending of the population on the economy, and the result was positive.

The correlation between the total government's money lent to the people and the variation of the rise in the real GDP was displayed by Reinhart and Rogoff (2010), which was negative in the long term, particularly for the time that this relationship makes up to the 90 percent of GDP. Another study was performed by Ahlborn and Schweickert (2016), which contained three country clusters and their economical organizers were thoroughly various, namely liberal, continental, and Nordic. The outcome was that in the continental system, the proportion of rise is more remarkable than the liberal one, and it causes an abate in the influences of the debts of the people. This type of debt proved to has more goodness than harm. In the Nordic case, however, things are quite different. The correlation is not linear, and this results in a collapse in the GDP to nearly 60 percent of the peoples debt. By utilizing the yearly information in the period of 1961 to 2013, Puig (2013) examined this pay offs of the population on the escalation in the economy, in both short and long terms. With regards to the short term

outcome, according to that particular country, there may be a positive influence, while in the long term it is a downside for the participants of the EA.

Gurdal et al. (2020) made use of the yearly information from 1980 to 2016, in order to find the coordination between the three factors of the population's regular fee, government's expenditure and the rise in the economy, for the United Kingdom, Germany, the United States of America, Italy, Japan, and France. According to the results, those countries that used economic conjuncture of G7 for their taxes, are mightier in their finance and have a higher chance to reach their desired ends. In the case of Nigeria, Cornelius et al. (2016) studied the factors which had impacts on this nation's economy, such as the regular fee of petroleum, non-oil products, taxes, according to the least-squares of multiple regression models. With regards to the outcome, although corporate income tax and the surge were not prominent in terms of any correlations, incomes from non-oil products played a remarkable role. The method of Ordinary Least Squares (OLS) regression has been conducted by Joseph et al. (2020), by using the information from 1981 to 2018, to test any similarity between the government's incomes and improvements in the economy, and it turned out that this income plus value added tax (VAT), which is particularly for the federal, are merits for this improvement.

Some other deductions were discovered by Omodero (2019) from 2009 to 2018, with respect to the general type of financial policy in Nigeria and Ghana. For the prior, M2 has a minute impact on GDP; M3 is a benefit for GDP. Private sector's credits (CPS) were also a merit for GDP. With regards to the former, M2 is a plus point; M3 is a significant harm, CPS is a relatively advantage for GDP. So in order to boost the economy in both nations, these general policies shall be decided by the people in charge, and also M2 and CPS should have a more active role, since they are responsible for the rise in the economy, that as a result leads to an abundant status of occupations and production. By using the information from the past 3 decades, Hameed and Amen (2011) considered how useful this policy can be, in terms of the regression analysis technique, and according to the results, there is a coordination between the two mentioned aspects in Pakistan. Moreover, if the amount of money in hoards increases, it highly benefits the situation of producing domestic items.

Another case in Tanzania, from the information extracted in a period from 1990 to 2011, by Kasidi and Mwakanemela (2013) was performed to reveal any relations between the protuberance and the rise in the economy, and none was observed. But this protuberance could harm the improvement of the economy, which is also not valid for the long term. However, in the Nigeria, based on a study by Osuala and Onyeike (2013), this is a merit, but there is no other great factor other than that. Another researcher, Hasanov (2011), studied any impacts of the protuberance and the rise in the economy

from 2000 to 2009. Based on that, in Azerbaijan's economy, protuberance has a non-linear coordination with the rise in the economy, and this protuberance is rising to 13 percent in GDP levels. If this number grows up, it could be a harm, while any percentages below 13 are highly beneficial on the rise of the GDP.

In case of the influences of the financial stockpiles M2 on the GDP in Pakistan, Ihsan and Anjum's paper (2013) is an examination for this, from 2000 to 2011, and it had negative impacts. Some other models like a formal advanced training course (ARC) model, and a nominal ARC model of the money supply, have been created by Dai and Wu (2013), according to the Solow's model of growth. Money is the cure for the economy to rise and relieve, based on their outcomes. Researchers like Ayodeji and Oluwole (2018), made use of the Jo- hansen Co-Integration test, and Engle Granger Co-Integration test, to display the correlation between the speed of substitution and the rise in the economy for the long times, and their source of information was from 1981 to 2016, and among their factors were the substitution and desired rate, along with the money hoards and the interchangeability of assets and money. For the GDP of the Nigeria, substitution rate and the money hoards were benefits, though not relevant. In China, for various states, this study revealed real exchange rate in the rise in the economy and how these factors approach together, conducted by Chen (2012). They were active panel information obtained from 28 Chinese provinces from 1992 to 2008, and the outcomes showed a merit. For Malaysia, Kogid et al. (2012) studied the impacts of the speed of the substitution by performing data from time series, in the period of 1971 to 2009. Regardless of the type of the rate (nominal and real), the influence does not change. If we also use the long-term ARDL test, we gain advantages, but for the ECM, the results are by chance for the rise in the economy. The last coming output for Malaysia, is that the special kind of financial policy has benefits for boosting the economy.

3. Methodology

Time-series data analysis methods have been implemented in this study. This type of data is comprised of a set of end-to-end data points which provides the data about a given variable in every unit of time which is defined based on the features of the variable itself. It could be gathered in a year, 4 month, month, week, or even day. In the case of the economical information, we can find any data related to how often the shocks are maintained, how readable is the rate of change, how probable is the sudden fluctuations over the particular period, and whether they tend to move slowly and vaguely, with respect to the other factors. Many applications for them can be found, for instance social sciences, finance, economics, physical sciences, and epidemiology (Shrestha and Bhatta .2018:72).

Sometimes, the time series data is in contrast with our postulates of the conventional statistical methods. So researchers use time series analysis, which are that information from the previous model that need a unique set of instruments and procedures, and these models have various types, like ARDL.

In the ARDL approach, we combine factors together, in order to examine any correlation between them, for a long period, and this has a superiority over the classical version of cointegration tests (Nkoro and Uko, 2016). The initial one is that it is independent of the kind of the series (I(0) or I(1)). Next, the error correction model is unlimited (UECM) and we can obtain them by only using a single linear transformation of the ARDL bounds testing. This model is active, regardless of the length of the time. The final advantage, is that it is the most appropriate method for tiny samples (Cetin et al., 2015).

Among the various linear methods for estimating the model parameters (regression parameters), the Ordinary Least Squares (OLS) method which is known as the most widely used and dominant method due to its desirable properties (of course, when the assumptions of this method are met). This method is believed to be established by the famous German mathematician Karl Friedrich Goss. OLS tries to fit the best regression line between the observed data and the data predicted by the model by minimizing the sum of squares of perturbation sentences. This principle is known as the principle of least squares (Zdaniuk. 2014). In this study, the variables used were presented in Table 1.

Table 1: Variables and Definitions

Variables	Definition of Variables	Expected Signes	Resource
Dependent Variable	GDPR GDP Growth Rate		
	EXCR Exchange Rate	+	Central Bank of Iraq
	M2R M2 Money Supply	+	
Independent Variables	INFR Inflation Rate	-	
	PDEPR Public Debt Rate	-	
	GREVR Government Revenue	+	
	GEXPR Government Expenditure	+	

The dependent variable of the study is the GDP. In this study quarterly GDP rate was included as a dependent variable. Independent variables are exchange rate, M2 money supply, inflation rate, public debt, government revenue, and government expenditure respectively. M2, public

debt, government revenue, and government expenditure was calculated to be the quarterly ratio to avoid the effect of inflation.

To measure the effects of monetary and fiscal policies on the growth respectively, the first and second equation below was established and estimated. Variables were estimated using the OLS method. The model is shown in equation 1 and 2;

$$GDPR_t = \beta_0 + \beta_1 EXCR_t + \beta_2 M2R_t + \beta_3 INFR_t + e_t \quad \beta_1, \beta_3 < 0 \quad (1)$$

$$GDPR_t = \beta_0 + \beta_1 PDEPR_t + \beta_2 GREVR_t + \beta_3 GEXPR_t + e_t \quad \beta_1, \beta_3 < 0 \quad (2)$$

In the following parts of the study, firstly ADF and PP Unit Root Tests results will be given. Long-term and Short-term Coefficient Estimations will then be presented. Lastly, other estimation results will be respectively shown.

4. Findings

To apply time series analysis, all series included in the analysis must be stationary. Because both R^2 and t statistics may present misleading results due to the risk of spurious regression in series where stationarity cannot be achieved (Newbold and, Granger 1974; Gujarati and Porter, 2009). The most commonly used method for determining the stationarity of the series is unit root tests (Gujarati, 1999:718-719). In this analysis, all three models of ADF and PP Unit Root Tests (without constant, with constant, with constant and trend) are used. The level values of the unit root tests of the series are presented in Table 1 and the first difference values are presented in Table 2.

Table 1. Unit Root Tests (Level)

Variables	Augmented Dicky Fuller (ADF)			Phillips Perron (PP)		
	None	Constant	Constant and Trend	None	Constant	Constant and Trend
GDPR	-2.540897**	-	-	-2.531990**	-	-
EXCR	-1.364468	-2.821281*	-2.137119	-1.460283	-2.480740	-1.637959
Table1: Continue						
M2R	-1.394134	-2.223509	-	-	-	-
			7.423555***	5.116626***	6.455326***	7.438295***
INFR	-2.298521**	-1.954169	-	-2.262893**	-2.078373	-2.034147
			12.51456***			
PDEPR	-2.142762*	-2.238098*	-2.185415	6.336129***	6.481236***	6.462768***
GREVR	-	-	-3.691988**	-	-	-
	3.713508***	3.684082***		8.686263***	8.634883***	8.611613***
GEXPR	-2.127913**	-2.610574*	-2.644432	-	-	-
				10.48360***	10.70618***	11.50254***
<i>MacKinnon Critical Values</i>						
%1	-2.604746	-3.546099	-4.121303	-2.604746	-3.546099	-4.121303

%5	-1.946447	-2.911730	-3.487845	-1.946447	-2.911730	-3.487845
%10	-1.613238	-2.503551	-3.172314	-1.613238	-2.593551	-3.172314

Note: *, **, *** signs represent .10, .05, and .01 significance level of (α) critical values respectively.

Table 2. Unit Root Tests (1st Difference)

Variables	Augmented Dicky Fuller (ADF)			Phillips Perron (PP)		
	None	Constant	Constant and Trend	None	Constant	Constant and Trend
GDPR	- 10.5435 1***	- 10.4424 9***	- 10.3220 5***	- 10.6316 5***	- 10.5278 8***	- 10.4077 6***
EXCR	- 4.74259 1***	- 4.89186 4***	- 5.27679 4***	- 4.71937 6***	- 4.88000 0***	- 5.24385 3***
M2R	- 9.12725 8***	- 6.37018 5***	- 6.30052 5***	- 25.3927 4***	- 25.2855 2***	- 24.9495 7***
INFR	- 2.41463 9***	- 2.30757 5***	- 2.23458 7***	- 5.23380 3***	- 5.23627 0***	- 5.22358 9***
PDEPR	- 12.6619 4***	- 12.5469 1***	- 12.4504 9***	- 15.4096 6***	- 15.2503 7***	- 15.1104 4***
GREVR	- 19.4304 9***	- 19.2597 9***	- 19.0874 1***	- 32.8874 0***	- 32.5723 6***	- 32.2502 9***
GEXPR	- 15.0044 3***	- 14.8622 4***	- 14.7468 1***	- 44.1806 1***	- 43.7386 7***	- 43.6830 7***
<i>MacKinnon Critical Values</i>						
%1	- 2.60544 2	- 3.54820 8	- 4.12426 5	- 2.60544 2	- 3.54820 8	- 4.12426 5
%5	- 1.94654 9	- 2.91263 1	- 3.48922 8	- 1.94654 9	- 2.91263 1	- 3.48922 8
%10	- 1.61318 1	- 2.59402 7	- 3.17311 4	- 1.61318 1	- 2.59402 7	- 3.17311 4

Note: *, **, *** signs represent .10, .05, and .01 significance level of (α) critical values respectively.

The unit root test results revealed that GDP was I(0), Exchange Rate was I(1), M2 was I(0), Inflation was I(1). Due to different stationary levels of series, ARDL Bound Test was chosen and executed as the right estimation method for equation 1 (Pesaran and Shin, 1999). Additionally, as for the second equation above (see equation 1), all variables were observed as stationary at level [I(0)]. In other words, in addition to GDP, public debt, government revenue, and government expenditure were seen as stationary [I(0)] respectively. Also, the Least Squares (LS) method was conducted in equation 2.

To test the monetary policies' impacts on the growth, equation 3 below was created and thereafter estimated.

$$\Delta GDPR = \beta_0 + \sum_{n=1}^m \beta_{1i} \Delta GDPR_{t-i} + \sum_{n=1}^m \beta_{2i} EXCR_{t-i} + \sum_{n=1}^m \beta_{3i} M2R_{t-i} + \sum_{n=1}^m \beta_{4i} INFR_{t-i} + \beta_5 GDPR_{t-1} + \beta_6 EXCR_{t-1} + \beta_7 M2R_{t-1} + \beta_8 INFR_{t-1} + \mu_t \quad (3)$$

The Long-run and short-run coefficients of the variables were estimated and presented in Table 3. According to the results; there were not seen any autocorrelation, heteroscedasticity, and normality problems. Additionally, the model was observed to be set-up right. As a result, the results can be said reliable.

Table 3: Long-term and Short-term Coefficient Estimations

Long-term Coefficient				
Variable	Coefficient	Standart Error	t-statistics	p-value
EXCR	-29.397482	7.503264	-3.917959	0.0003
M2R	0.115956	0.049838	2.326646	0.0250
INFR	0.189289	0.048036	3.940549	0.0003
C	35.222924	8.704121	4.046695	0.0002
Short-term Coefficient				
$\Delta(GDPR(-1))$	0.127377	0.129754	0.981680	0.3320
$\Delta(GDPR(-2))$	0.302405	0.125657	2.406587	0.0207
$\Delta(GDPR(-3))$	0.275766	0.107815	2.557766	0.0143
$\Delta(EXCR)$	25.800468	6.513436	3.961115	0.0003
$\Delta(EXCR(-1))$	16.483365	7.754098	2.125762	0.0396
$\Delta(EXCR(-2))$	12.836839	7.690445	2.125762	0.0396
$\Delta(EXCR(-3))$	22.347876	7.538900	2.964342	0.0050
$\Delta(INFR)$	0.047041	0.031685	1.484665	0.1453
Table4: Continue				
$\Delta(INFR(-1))$	-0.129278	0.032634	-3.961419	0.0003

Table4: Continue

$\Delta(M2R)$	0.047376	0.019420	2.439526	0.0191
ECM (-1)	-0.735154	0.123722	-5.941994	0.0000

Table 3 (Continue) Results of Diagnostic Tests

R ²	0.655787	X ² _{JB}	0.779316 (0.6772)
Adjusted R ²	0.538251	X ² _{BG}	0.042440 (0.9585)
F-statistics	5.365324 (0.0000)	X ² _{BPG}	0.334532 (0.9850)
DW	2.012074	X ² _{Ramsey}	1.427901 (0.1611)

Note: X²_{JB} represents normality, X²_{BG} represents autocorrelation, X²_{BPG} represents

heteroscedasticity and X²_{Ramsey} represent model set-up errors.

When the long-term coefficients are examined; It was observed that the exchange rate, M2 money supply, and inflation rate were effective on growth. Among these, the effect of the exchange rate is negative, while the effect of others is positive.

Considering short-term coefficients; the exchange rate, inflation rate, and M2 money supply seem to be effective in the short run on GDP. Based on the results of the correction model which is a large negative number, one can readily conclude that the model works properly, and the local deviations that occur are going to be stabilized in longer periods. A shock that will occur in the short term comes to balance after about 4 months.

The graphs of CUSUM and CUSUMQ (Brown et al., 1975) were developed to determine whether there is a break in the model that has been examined and the result is presented in Figure 1. As can be seen, the long-term coefficients are consistent since the residual variances at the 5% significance level do not exceed the critical limits (Tatli and Lebe, 2017:18); In other words, it is possible to state that the relationship between GDP and money supply, inflation and Exchange rate is consistent in the long run.

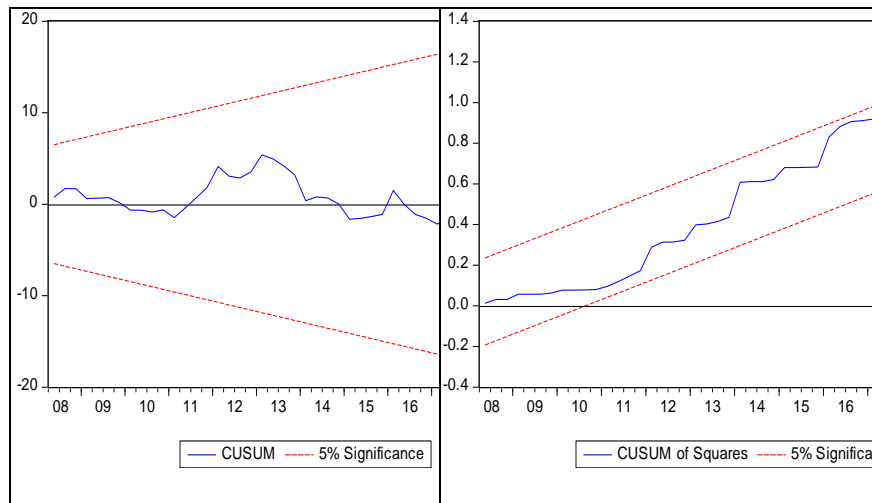


Figure 1. CUSUM and CUSUMQ Graphics

In unit root tests (see Table 1 and Table 2), it was observed that the series of public debt, public revenues, and public expenditures were stationary at level. Therefore, the effect of these variables on growth was estimated using the Ordinary Least Squares (OLS) method, and thereafter the results are presented in Table 4.

Table 4: Results of OLS Method Estimations

Variable	Coefficient	Standart Error	t-statistics	p-value
PDEPR	-0.062951	0.023915	-2.632296	0.0110
GREVR	0.052092	0.016431	3.778977	0.0004
GEXPR	-0.019400	0.153117	-2.059487	0.0600

Results of Diagnostic Tests

R ²	0.510349	DW	1.231994
Adjusted R ²	0.485116	X ² _{JB}	1.524512 (0.7241)
F-statistics	63.22480	X ² _{BG}	0.260965 (0.7713)
F probability	(0.00000)	X ² _{BPG}	0.152254 (0.9278)

Note: X²_{JB} represents normality, X²_{BG} represents autocorrelation, X²_{BPG} represents heteroscedasticity and X²_{Ramsey} represent model set-up errors.

According to the results; public debt and government expenditure have a negative effect on growth, while government revenue seems to have positive effects on growth. The signs of the variables were observed to be consistent with economic theory and economic expectations.

Moreover, there were not any observed normality, heteroscedasticity, and also autocorrelation problem in the model. All of these results of the residual diagnostic test were given just below Table 5.

To clarify the short-term effects of independent variables on growth, we conducted firstly VAR model, then estimated the VEC model, and finally executed Wald Test to examine if the independent variables affect growth in the short term or not.

The optimal length lag results were presented in Table 5. As seen in Table 6, the optimal length lag seems to be 4.

Table 5. Optimal Length Lag

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-980.4872	NA	4.15e+10	35.79953	35.94552*	35.85599
1	-948.4780	58.19848	2.32e+10	35.21738	35.94732	35.49966
2	-929.7186	31.37934	2.12e+10	35.11704	36.43093	35.62513
3	-907.7494	33.55297	1.75e+10	34.89998	36.79782	35.63389
4	-879.6472	38.83221 *	1.18e+10*	34.45990*	36.94169	35.41963*
5	-865.2778	17.76572	1.36e+10	34.51919	37.58494	35.70474

The VAR stability condition test result was presented below. In Table 6 and Figure 2, appeared to be less than "1" and no roots lie outside the unit circle, which means that the VAR model satisfies the stability condition.

Table 6. Optimal Length Lag

Root	Modulus
-0.939803	0.939803
0.032814 - 0.896367i	0.896967
0.032814 + 0.896367i	0.896967
-0.724863 - 0.453485i	0.855029
-0.724863 + 0.453485i	0.855029
-0.374116 - 0.745111i	0.833759
-0.374116 + 0.745111i	0.833759
0.738475 - 0.365029i	0.823766
0.738475 + 0.365029i	0.823766
0.780791 - 0.237081i	0.815992
0.780791 + 0.237081i	0.815992
0.477506 - 0.495707i	0.688286
0.477506 + 0.495707i	0.688286
-0.452414 - 0.470703i	0.652871
-0.452414 + 0.470703i	0.652871
0.475430	0.475430

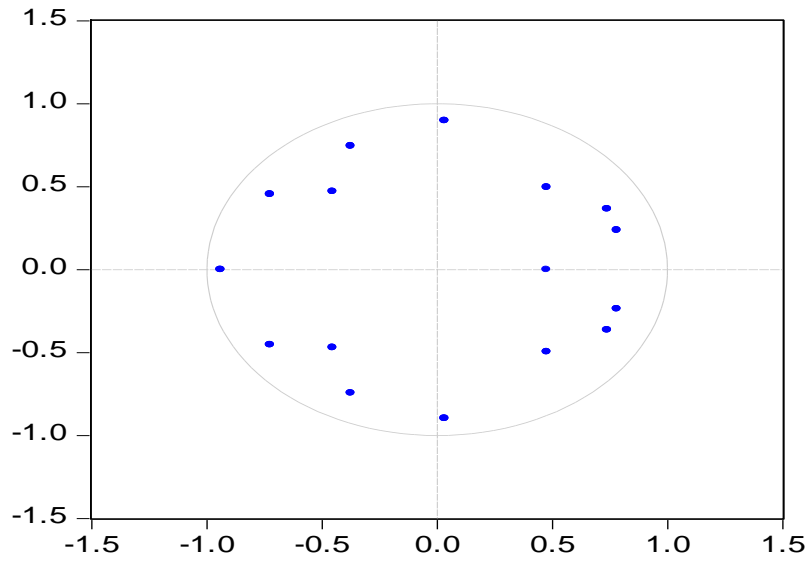


Figure 2. AR Roots Graphic of the VAR Model

According to the VAR diagnostic Test results, there is no autocorrelation, heteroscedasticity, and normality problem in the model.

Table 7. Results of VAR Diagnostic Test

R ²	0.607189	X ² _{JB}	681.8813 (0.3241)
Adjusted R ²	0.445116	X ² _{HTC}	312.9190 (0.4713)
F-statistics	3.767774	X ² _{LM}	18.15564 (0.5278)

Note: X²_{JB} represents normality, X²_{HTC} represents heteroscedasticity, X²_{LM} represents autocorrelation results.

The results of the VEC model are presented in Table 8. As seen in Table 8, the coefficient of the VECM is negative and greater than “2” as an absolute value. This means that any shock that can take place in the short-term may disappear in the long-term.

Table 8. Results of VECM

Error				
Correction:	D(GDPR)	D(EXPR)	D(PDEBR)	D(REVR)
CointEq1	-0.219675 (0.01506) [-2.30645]	-6.297567 (0.85564) [-7.36007]	0.117241 (0.26107) [0.44908]	1.568981 (1.11766) [1.40381]

Note: standart errors are presented in () and t-statistics in [].

The short-term relationship among variables is presented in Table 9. According to estimation, it was put forward that the public expenditure, revenue, and debts affect the growth in the short-run.

Table 9. Results of Short-term Relation of Variables

Test Statistic	Value	df	Probability
F-statistic	0.447879	(1, 57)	0.0060
Chi-square	0.447879	1	0.0033

5. Results and Discussions

In this study, the effects of monetary and fiscal policies on growth are examined.

In the first part of the study, the M2 money supply, inflation rate, and exchange rate are monetary policy variables. ARDL Bound Test approach was used to observe the effect of these variables on growth. As a result of the estimation, it has been observed that money supply, inflation, and exchange rate affect growth. While the effect of the Exchange rate among these effects was negative, the effects of the inflation rate and M2 money supply were positive. These results align with economic theory and some studies (Basirat et al., 2014) emphasizing that exchange rates negatively affect economic growth. Xianglan and Xi (2011) indicate the negative effects of the exchange rate in GDP, whereas the positive effects of M2 on GDP. Likewise, Ogunmuyiwa and Ekone 2010 assert that M2 has a positive effect on economic growth.

Some studies in the literature (Mallik and Chowdhury, 2001; Majumder, 2016; Osuala and Onyeike, 2013) assert that inflation is necessary for economic growth. Despite the analyzed findings, which indicate inflation has positive effects on GDP, one of the policies to be followed by the Central Bank is to maintain the price level to avoid large inflation rates and, at the same time, price stability positively affects economic growth.

In the second part of the study, the impact of budgetary policies on total growth is investigated. Government expenditures, government revenues, and government debt are selected as independent variables as fiscal policy tools. Variables were analyzed using the OLS method and their effects on growth were examined. According to the findings; the effects of government debt and government spending on growth were negative, while the effect of government revenues was positive. Our findings are in complete agreement with what Panizza and Presbitero published in 2013. The negative impact of public debt depends more on the composition of the public debt than on the size of the debt itself. The difference in the structure of public debt between countries is what determines its effect, whether negative or positive, as well as the purpose of the debt and the duration of its repeat. Based on the short-term investigation outcomes, public expenditure, public revenue, and public debts affect the growth in the short-run.

The study relied on official and real data of expenditures, revenues, and public debt of Iraq. It was found that both recurrent expenses of the government and public debt have adverse effects on economic growth in the short term. Funds are spent on salaries and social care, while these funds are not directed to productive and investment expenditures. Iraq suffers from a deficit in the infrastructure, therefore economic growth cannot be achieved. These results are supported by some studies (Devarajan et al., 1996; Rahman et al., 2019). As for the revenues, they have a positive effect since Iraq is one of the countries rich in natural resources and is dependent on about 80% of its revenues on oil. Since oil prices from 2005-2018 are on the rise, and the yields were sufficient to meet a need, as is the case in rentier countries. These results are supported by studies of Akacem et al. (2020).

6. Limitations Of The Study And Future Implications

As for the limitations of the study, the data used in this study are limited to the years 2005-2019. In the analysis performed, the effect of other variables on growth was accepted as constant (*ceteris paribus*). Therefore, these restrictions should be taken into account while generalizing the results.

Considering the suggestions for future studies, it is possible to state that the explanatory power of the study can be increased by expanding the data set both in time and in different countries in future studies.

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