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IMPORTED INFLATION AND ITS IMPACT ON THE GENERAL BUDGET IN IRAQ (2004-2018) USING THE VAR MODEL

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Abstract
The study aims at analyzing the relationship between imported inflation and the general budget in Iraq (2004-2018).Monthly data is used for the purpose of achieving the aim of the study through the use of statistical and standard methods to obtain the most accurate results. By estimating and analyzing the relationship in the practical analysis in which VAR model is used, it is found that there is a direct relationship between imported inflation and expenditure in the general budget of Iraq during the study duration.
Key Words: (Imported inflation, Public budget, Dickey- Fuller , VAR Model)

Introduction

Iraq, like other countries of the world, has witnessed many changes, whether on the political, economic or social level, especially after 2003. Perhaps one of the most prominent of these changes is the transformation of the Iraqi economy from a central economy that depends on comprehensive planning to the market economy. The independence of the central bank, and the economic evolution, whether commercial or financial, on the global market, all these changes have affected foreign commerce in general and the general budget in particular because its income depends on one sector, which is oil.The imported inflation has taken place in deepening imbalances since it affects spending in the budget or the increase in imported inflation increases the aspect of expenditures in the budget.

The value

The importance of the study lies in knowing the relationship between imported inflation and the general budget in Iraq, by shedding light on the extent to which the public budget is affected by imported inflation.

The problem

Despite the circumstances that the Iraqi economy went throughafter the events of 2003, especially the commercial evolution to most countries, this evolution had a negative impact on the Iraqi economy, especially in imported inflation rates. In fact, the negative effects of inflation in the countries that Iraq had commercial relationship with has transformed to Iraq what makes the rates of imported inflation rise during the study duration.

The aim

The study aims at Clarifying the relationship between imported inflation and the general budget in Iraq, and the extent of the impact of inflation on the general budget in Iraq (2004-2018).

The hypothesis

The study is based on the hypothesis that there is a direct relationship between imported inflation and the general budget in Iraq during the study duration.

The procedure:

The qualitative and the quantitative methods are utilized to analyze the data. and the study is divided into three axes, the first axis deals with the theoretical background of imported inflation and its channels, while the second axis deal with the reality of imported inflation and the general budget in Iraq during the study duration.The third axis focuses on analyzing and assessing the relationship between imported inflation and the general budget.Finally, the study comes up with a set of conclusions and recommendations.

1.Imported inflation, its channels and effects of transmission

1-1 :**The concept of imported inflation and the factors affecting it**

The inflation problem is one of the most serious economic problems that most of the world's economies suffer from, whether developing or developed ones. Many studies have dealt with the concept of inflation because of the effects of this phenomenon on most of the economic pillars such as the trade balance, the balance of payments and other economic foundations. Before explaining the concept of imported inflation, its meaning in general must be clarified first. In spite the fact that there have been many definitions of inflation in economic thought, there is no specific meaning or concept of the meaning of inflation among financial scholars and economist. The origin of this disagreement is the angle through which this phenomenon is viewed to in terms of the various general monetary theories, the reasons for which inflation

arises and the characteristics that accompany inflation. Hence, it can be said that when using the term inflation without referring to a specific phenomenon or situation, what is meant is the rise in prices.

Some literature has focused in its definition of this phenomenon as a rise in the general level of prices, so inflation can be defined as an abnormal rise in prices, or a decrease in purchasing power (Azzopardi, 2013: 2), but it is not permissible here to interpret every rise in prices as inflation because the rise in prices may be for a limited period due to a shortage of supplying a particular commodity or an increase in demand for this commodity. This leads to an increase in its price.So the rise in commodity prices without being matched by a rise in the general price level is not considered inflation.

And there are those who believe that inflation is the continuous rise in the general level of prices that works to reduce the purchasing power of money and that impedes money from performing its functions well (Al-Sultan, 2007: 10). Thus, it can be said that despite the multiplicity of definitions that deal with the phenomenon of Inflation, it refers to successive rises in the general level of prices and a decrease in the purchasing power of the monetary unit.

After getting acquainted with inflation in general, it is necessary to give an understanding of imported inflation that arises as a result of the evolution of economies to each other, which makes these economies affect and are affected by global economic changes, therefore; the levels of inflation in these economies will be affected by factors outside the geographical scope, as well as It is affected by local factors that affect the market for goods and services. Therefore, inflation can be from external sources, and thus it is called imported inflation. This type of inflation may appear in small and developing countries that import most of the goods and services from abroad.This rise in the prices of goods and services will lead to the transmission of this increase in the prices of goods and services to the importing countries, that is, the extent to which prices within an economy are affected by external factors (Mercillon, 1985: 464). Imported inflation can also be defined as that phenomenon that expresses an increase of the general price level resulting from an increase in aggregate demand over the total supply or an increase in the cost of incomes coming from abroad (Kolodko, 1987: 1131).Hence, the researchers see that imported inflation is inflation in a country, resulting from higher prices in foreign markets on which it depends on it in its imports.

However, imported inflation is measured through a relationship that shows the influence of external forces on the domestic price level through the following law: (Abdul Hadi , etal, 2013: 201).

$$\text{Imported Inflation} = \frac{\text{Import Value}}{\text{Gross National Income Values}} * \text{ Global Inflation}$$

It is inferred here that the problem of imported inflation is more serious in countries that suffer from a degree of economic exposure, as there are external

economic factors that affect domestic inflation. In fact, the price is determined in the market of goods and services through the interaction of demand and supply. In other words, it is possible to look at price as a function that depends on the demand and supply variables.

1-2 : The transmission channels for imported inflation

Inflation spreads between countries through many channels that have been mentioned by many economists.Despite of the different divisions of these channels by economists, it flows into one stream, which is the process of inflation transmission between countries What some economists have reached in terms of divisions of these channels can be clarified through the following (Choi, 1982: 3):

1.**The direct channel of prices**: It is possible to distinguish between two channels through which inflation moves from the global economy to the local economy through the following:

A- **Direct price channel**: This channel concerns with the direct relationship between the global market and the foreign commercesector of the local economy through which inputs are substituted in production and final consumption.

B- **Indirect channel of entry**: This channel concerns with the impact of the balance of payments on the domestic money (outcome) and income.

Henri Mercillon suggests that it is possible to look at the two channels above from another angle that can be represented by the following:

A-- The income channel: The incomes come from exporting country to importing country, and causes increase in the real demand. They are restricted to the increase in export income or to the direct increase in the monetary availability of the country.

B- **Cost channel**: This channel is operated to a higher cost for dealings , higher prices for costumers and and the degree of influence of the channel depending on the degree of flexibility of imports.

The National Bureau for Economic Research considers that the channels of imported inflation are enhanced with the following: (Michael and Darby, 1983: 501):

A- **Commodity Substitution Channel**: This is done by knowing the direct impact of international prices on domestic prices.

B- **Asset flows and cash linkages channel**: This is done by knowing the effect of incomes coming from abroad on the money supply and effective domestic demand.

Samuel also sees that the channels through which imported inflation is transmitted are represented by the following: (Katz, 173: 6)

A- **The price channel**: It is the channel through which international prices affect domestic prices.

B- **The liquidity channel**: It concerns with the effects resulting from international transactions and their impact on both income and liquidity, which in turn affects the effective domestic demand.

2. **The indirect income channel**: The indirect channel of prices stands for the impact of incomes resulting from the surplus balance of payments on the level of money supply and income of the local economy which makes domestic demand active, whether consumer or investment and causes inflationary pressures from incomes coming from abroad through demand inflation. This channel is also called a liquidity channel for the international transmission of inflation as the central bank increases domestic liquidity by purchasing foreign currencies coming from abroad in the local exchange market. This domestic liquidity resulting from the central bank's purchase of foreign currenciesis the primary sign of the emergence of inflationary pressures from inflows of capital. In addition, to the central bank's purchases of foreign currencies will increase the monetary base. As a result of this increase,the monetary authorities must withdraw part of the level of cash that they pumped to buy foreign currencies or limit the secondary creation of cash in the banking system (katz, 1973: 65). Current account surpluses can also directly affect domestic income through the foreign trade multiplier. Export revenues can affect domestic investment or domestic consumption. as the monetarists see, there is a causal relationship between the monetary mass and the balance of payments.If the monetary mass increases, as a result of additional liquidity creation by the central bank, or the increase in the volume of loans granted by commercial banks, individuals will have a desire to spend some of their additional cash flow (Al-Bakri & Al-Safi, 2002: 197).Moreover, the expansion of other financial assets in their investment projects due to the availability of more liquidity in commercial banks may generate inflationary pressures through demand inflation, and the levels of money supply will be affected by the balance of payments balance in general.

The channels of transmission of imported inflation differ from one country to another. In oil-producing countries, for example, they can be divided as follows(Al-Wazzani & Al-Rifai, 2003: 250) and (Michael and Darby, 1983: 500):

1- **An increase in the average inclination to import**: that is, the ratio of imports to the total domestic product at current prices.The increase of this tendency suggests economic dependence, and dependence on the external sources in securing various commodities.So, the rise in the prices of this commodity is greatly reflected in the national economy

2- **The nature of the structural composition of imports**: that is, the quality of imports affects the issue of inflation. For example, countries that import

various goods (consumer goods, processing goods, machinery and intermediate goods) become vulnerable to imported inflation because the list of their imports is large and required.

3- **Excessive growth in imports**: It is an increase in the quantity and value of imports. With the rise in world prices for imports, high-priced goods enter the total supply, which in turn creates import inflation.

4-**Bias in importing from industrialized countries**: The industrialized countries are the most important countries in the world in the production of luxury goods, processing goods, equipment and technologies. These countries highly suffer from inflation and high prices. In fact, the higher the prices in these countries, the higher the prices in the importing country. Thus, the inflation moves from these industrialized countries to the importing country.

5-**The extent of the rise in the prices of imports**: After the oil shock of 1973-1974, the costs of producing materials in the world increased. This led to a sudden rise in prices in various materials because oil was included in the costs of producing all commodities. This made importing countries suffer of an increase of the cost of producing the materials it imports. Hence, the inflation has moved to it.

6-**The effect of increasing oil revenues on the growth of international liquidity**: This only happened in the oil-exporting market as the increase in oil revenues greatly increased several times over the public spending in those countries on various projects, and the increase in public spending led to an increase in the money supply. Thus,the increase in liquidity cash that is usually affected by several factors represented by the following:

A- Net change in foreign assets

B- The net change in the state's debt towards the banking system

T - The net change in the indebtedness of public sector institutions towards the banking system

W - The net change in the debt of the private sector to the banking system

On the other hand, the channels of transmission of imported inflation in countries with a fiscal deficit are as follows:

1- High average import propensity.

2- Nature of imports

3- Increase dealing with industrialized countries.

4- Conditions of the International Monetary Fund (government spending - reducing the exchange rate of the local currency)

1-3 : The economic and social impacts of imported inflation

The effects of inflation in its usual form or imported inflation cannot be separated from the economy since they lead to an increase in the general level of prices. But imported inflation depends on external factors, especially in oil-

exporting countries(and Iraq as one of these oil-exporting countries), so the most important effects can be summed up by the following(Al-Amin, 2002: 218) and (Ismail and Harbi, 1999: 150) (Manhal and Radwan, 1996: 175):

1.**The high cost of domestic investment**: Most countries, especially the source of oil, seek to use part of the revenues obtained from exporting crude oil in the formation of permanent capital, especially in the infrastructure sector because the investment in this sector represents the cornerstone of achieving the development that these countries seek. Actually, these countries suffer from a shortage in the components of this sector. In addition, developing this sector takes place in overcoming blockages experienced by other sectors. Thus, the investment in this sector have exceeded the volume of targeted investments in oil-exporting countries due to revenues from exporting oil.

2.**The rise in land prices**: The price of land in the oil-exporting countries has witnessed a remarkable increase in prices as a result of the revenues these countries made from exporting oil. This leads to an increase in the demand for land within these countries. As it is known, the supply of land within countries, especially the oil ones, is limited. The increase in demand raises its price, and as a result this increase has led to an increase in trafficking in these lands and real estate which prompted a large number of investors to buy, re-divide and sell lands, or to use them in building residential, administrative and commercial complexes in return for high rents.

3- **Disparity in income distribution**: As a matter of fact, imported or local inflation creates a disparity in the distribution of incomes among the social classes that make up societies. This is due to the difference in the growth rates of individual'sincomes during the inflation. However, the beneficiary of inflation is the owners of productive factor incomes because of the growth of their incomes during periods of inflation at rates higher than the rates of price increase.On the other hand, the opposite happens for those with permanent incomes because they are exposed to a real deterioration in living standards because of not keeping pace with the rates of change of their cash wages with the rates of price change.

4- **Excessive growth of the services sector**: imported inflation leads to an abnormal growth in services, especially in areas characterized by high rates of profit they do not require large capital in fixed productive assets for long periods. This has been concentrated in service projects such as building hotels Transport projects, the financial sector, and the bus industry projects. Hence, it can be said that excessive investment in the service sector often distorts the path of development and leads to the division of labor in favor of this sector at the expense of expansion in the sectors of physical production.

2. The Reality of Imported Inflation and the General Budget in the Iraqi Economy (2004-2018)

2-1 :The reality of imported inflation in Iraq for the period 2004-2018

The Iraqi economy witnessed a state of economic, political and security chaos after the events of 2003. This was accompanied by a major shift in the structure of demand on the impact of the application of the economic liberalization policy and the lifting of all restrictions imposed on foreign commerce. Imports of various consumer and investment goods and services increased, and since the Iraqi economy is exposed to some external factor with the low contribution of the commodity sectors (except for oil) in generating the GDP (Awad, 2015: 62), the components of the Iraqi consumer basket are likely imports.As Iraq relied for providing most of Iraq's needs of intermediate and final goods from on Imports, negative returns on the external economy through external inflationary pressures is expected , imports from abroad increase and a rise in the rate of imported inflation is accumulated (Central Bank of Iraq, 2018: 10). As shown in Table (1), there is an increase in imported inflation in the Iraqi economy in 2004 about (2.363%) due to the orientation of the ethnic economy towards a market economy. Furthermore, the overall supply of goods and services decreased as a result of the stoppage of productive institutions due to the sabotage and destruction after the events of 2003.Thus, imported inflation decreased to reach (1.472%) in 2007 due to the instability of the security and political conditions in the country. This led to a decrease in imports, then inflation increased again after that to reach (2.596%) in 2008 due to the rise in global inflation. After that,it began to decline to levels reaching less than one and the reason for this is the monetary policy orientations in targeting inflation and ensuring stability in exchange rates for the currency auction market.

Table (1)

Imports, gross national income, global and imported inflation (by million dinars)

Year	Value of imports (1)	Total national income (2)	Average of global inflation (3)	Imported inflation (4)
2004	34050969.0	53311558.7	3.7	2.363
2005	45145710.0	74622598.6	4.2	2.541
2006	36914707.0	96902093.4	4.5	1.714
2007	31422753.0	113163014.7	5.3	`1.472
2008	48249768.6	165421918.9	8.9	2.596
2009	51236145.0	134264467.4	3.0	1.147
2010	55232658.0	163926503.5	3.5	1.179
2011	60316542.0	217091235.4	5.0	1.389
2012	73980251.4	255460517.9	3.9	1.129
2013	75910914.2	272998466.0	2.8	0.779
2014	69948806.4	2658014717.7	2.8	0.074
2015	53626567.5	207154168.9	1.6	0.414
2016	57353324.3	183609460.7	1.5	0.468

2017	57333501.0	184834833.6	2.2	0.682
2018	67227432.0	207899549.9	2.5	0.808

Source: Data for Column (1,2) Ministry of Planning, Central Bureau of Statistics, Directorate of National Accounts
Data for Column (3): Data.worldbank.org/indicator/FP.CPI.TOTL.ZG
Column (4) data: the researcher's work based on Table (4) and according to the following formula:
Imported inflation = value of imports / value of national income x global inflation.

2-2 : The Reality of the General Budget in Iraq (2004-2018)

The general budget is a document that includes an estimate of the state's expenditures and revenues during the coming period (often one year). It is estimated in light of the goals pursued by the state's philosophy. The forefront is political and economic stability and economic and social development (Muhammad, 2017: 157). The structure of the public budget consists of public expenditures And public revenues. Table (2) reflects the structure of the public budget in Iraq during the study duration. It is noticed that there is an increase in the public expenditures during the study duration despite the increase in public revenuesas public expenditures increase from (32117491) million dinars in In 2004 to (59403375) million dinars in 2008 The reason is the increase in public revenues as a result of lifting economic sanctions and allowing the export of large quantities of crude oil after 2003. This is reflected positively on the general budget that depends on the revenues of the oil sector. Public revenues increase to (80252182) million dinars in 2008 after and it was (32982739) million dinars in 2004. Then public expenditures decreased in 2009 to reach (52567025) million dinars as a result of the decline in oil sector revenues following the global crisis that hit the world at the end of 2008. Hence, this led to a decline in the revenue side Public expenditures amounted to (55209353) million dinars for the same year, then public expenditures began to rise again until it reached (119,128,000) million dinars in 2013. On the other hand, there is an increase in the side of public revenues, as it amounted to (113767395) million dinars. After that revenues and expenditures suffered of declining and fluctuation(up and down because of the decline and rise in global oil prices which greatly affect the general budget, whether on the side of revenues or expenditures.

Table(2)
The general budget in Iraq(2004-2018)(using the current prices)

Year	expenditure	Growth average	income	Growth average	Surplus &shortage
2004	32117491	——	32982739	——	865248
2005	26375175	-17.9	40502890	22.8	14127715
2006	38806679	47.1	49055545	21.1	10248866
2007	39031232	0.6	54599451	11.3	15568219
2008	59403375	52.2	80252182	47.0	20848807
2009	52567025	-11.5	55209353	-31.2	2642328

2010	70134201	33.4	70178223	27.1	44022
2011	78757666.3	12.3	108807392	55.0	30049726
2012	105139575.7	33.4	119817224	10.1	14677648
2013	119128000	13.3	113767395	-5.0	-5360605
2014	113473517	-4.7	105386623	-7.4	-8086894
2015	70397515	-38.0	66470251	-36.9	-3927264
2016	67067437	-4.7	54409270	-18.1	-12658160
2017	75490115	12.5	77422172	42.1	1932057
2018	80873189	7.13	106569834	37.6	25696645

Source: the researchers depending on the data of Central Bank, Ministry of Planning and Ministry of finance(2004-2018)

3. Estimating and Analyzing the Relationship Between Imported Inflation and the General Budget In Iraq (2004-2018)

3-1 : **Study variables**

In order to verify the hypothesis of the study and its aims, the model was described as follows:

Table (3)
characterization of model variables

Variables	symbol	relation	Duration
Imported inflation	IM	independent	2004-2018
General budget	BG	Dependent	

Source: Prepared by researchers

First, the regression equation to obtain the initial form of the relationship between the two variables is estimated.Then, as in the equation below,the hypothesisis verified because there is a directrelationship between imported inflation and spending in the general budget of Iraq during the study duration .

$$BG = \alpha + IM\ B_1 + \varepsilon_i$$

3-2 : The results of the time-chains consistency test

The data were converted during the study duration into monthly data to expand the sample size and reach the most accurate results through the Eviews 10 program. On this basis, tests were conducted on time chains in order to reach consistency.

Table (4)
Results of the ADF root test at the original level

Variables	No constant		With a constant and direction		No constant or direction	
	t-Statistic	Prob.	t-Statistic	Prob.	t-Statistic	Prob.
IM	-1.91115	0.3187	-2.95904	0.1739	-1.95626	0.0515
BG	-2.30082	0.1855	-3.42888	0.091	-1.12302	0.2223

Source: Prepared by researchers using EViews10

It is noticed ,in table (4), the chains under analysis are not stable at the level therefore, the first variance must be taken into account so as to gainstall chains .

Table (5)
Results of the ADF root test at Level 1

Variables	No constant		With a constant and direction		No constant or direction	
	t-Statistic	Prob.	t-Statistic	Prob.	t-Statistic	Prob.
IM	-5.4136	0.0009	-4.69057	0.0135	-5.24652	0.0001
BG	-3.37527	0.0343	-3.16585	0.1368	-3.53593	0.0021

Source: Prepared by researchers using EViews10

Table (5) shows that the two strings under study became consistent at the first variance (at first level) ,using Dickey Fuller's unit root test (ADF).

Table (6)
Unit root (PP) test results at the original level

Variables	No constant		With a constant and direction		No constant or direction	
	t-Statistic	**Prob.**	**t-Statistic**	**Prob.**	**t-Statistic**	**Prob.**
IM	-1.78875	0.371	-2.89539	0.1906	-2.10748	0.0376
BG	-4.92818	0.0017	-5.40049	0.0034	-4.34129	0.0003

Source: Prepared by researchers using EViews10

To ensure the consistency of the time chains, the Phillips Perron Test (PP) isused at the first variance as in the table below:

Table (7)
Unit root (PP) test results at the first variance

Variables	No constant		With a constant and direction		No constant or direction	
	t-Statistic	Prob.	t-Statistic	Prob.	t-Statistic	Prob.
IM	-7.38745	0.0000	-13.0034	0.0001	-5.29091	0.0001
BG	-12.3525	0.0000	-11.744	0.0000	-12.8927	0.0001

Source: Prepared by researchers using EViews10

Table (7) showsthat the two strings under study also became consistent at the first variance (at first level), using Dickey Fuller and Phillips Peyron's unit root test.

3-3 : Granger Causality Test

In this test, we study the causal relationship between imported inflation and the general budget in Iraq, as the hypothesis of predicting future values of a variable is verified.The time series of variable X causes the variable Y if the previous values of the variable X includes useful information that contributes to the future prediction of the values of the variable Y. Conduct a causality test according to the following equations: (Alheety,2015:110)

$$Y_i = \alpha_1 + \sum_{j=1}^{m} \beta_{1j} Y_{t-j} + \sum_{j=1}^{m} \delta_{1j} X_{t-j} + \varepsilon_{1t} \qquad \dots(1)$$

$$X_i = \alpha_2 + \sum_{j=1}^{m} \beta_{2j} Y_{t-j} + \sum_{j=1}^{m} \delta_{2j} X_{t-j} + \varepsilon_{2t} \qquad \dots (2)$$

constant term α_j:

non-inherent random errors which are not linked to arithmetic mean ε_{jt}

equals zero and consistent variance over time

So as to test the direction of causal relationship from Y to x, the null

(H_{01}) and alternative substitution (H_{11})hypothesis :

=0 (j=1,2,3,…,m)$H_{01}\delta_{1j}$

≠0 (j=1,2,3,…,m)$H_{11}H_{01}\delta_{1j}$

Table(8)

the results of Granger`s cause

Null Hypothesis:	Obs	F-Statistic	Prob
BG does not Granger Cause IM	10	0.0494	0.80045
IM does not Granger Cause BG		0.7761	0.26678

Source: Prepared by researchers using EViews10

From Table (8) we note the results of Cranger causality, which show that the causal relationship and the effect are heading from imported inflation IM to the general budget of BG in Iraq during the study period.

3-4 : Identifying the Regression Period

The regression is tested and determined prior to testing the causal relationship and estimating the Autoregressive Vector Model (VAR) by three main criteria: (Yahya, 2014: 88)

1.5 Akaike information criterion

$$AIC = log\ \sigma_u^2(n) + \frac{2}{T}n \qquad \dots (3)$$

2.5 Hannan-Quinn information criterion

$$HQ = log\ \sigma_u^2(n) + \frac{2\ log\quad loqT}{T}n \qquad \dots (4)$$

3.5 information criterion Schwarz

$$SC = log\ \sigma_u^2(n) + \frac{logT}{T}n \qquad \dots (5)$$

Before performing the process of determining the degree of regression (delay) for the VAR model using the three criteria above in EViews, it becomes clear that the regression periods are two periods, as in the table below:

Table (9)

Identifying the optimal slowdown period for the model variables

Regression degree	**AIC**	**HQ**	**SC**
0	12.59816	12.64342	12.56975

1	12.80313	12.9389	12.7179
2	11.94472*	12.35202*	11.68902*
3	13.0081	13.23438	12.86605
4	13.21306	13.52985	13.01419
5	12.14968	12.6475	11.83717

Source: Prepared by researchers using EViews10

In Table (9) the degree of delay is 2(P = 2), so we run the test on the model of the path VAR (2), and the test results are shown in the following:

$$\mathrm{DIM} = \underset{2.73}{0.449}\mathrm{DIM}(-1) + \underset{1.95}{0.463}\,\mathrm{DIM}(-2) + \underset{1.64}{0.618}\mathrm{IM}(-1) + \underset{2.36}{0.338}\mathrm{IM}(-2)$$

t

$$\mathrm{DBG} = \underset{1.57}{0.315}\mathrm{DIM}(-1) + \underset{1.73}{0.293}\,\mathrm{DIM}(-2) + \underset{2.39}{0.185}\mathrm{BG}(-1) + \underset{2.36}{0.205}\mathrm{BG}(-2)$$

t

$R^2 = 63.74\ \overline{R^2} = 31.39\ \ F_{st.} = 15.606\ \ \mathrm{Prob}(F_{st.}) = 0.00\ \ DW = 1.96$

It is noticed from the results of the estimated model VAR (2) above that the model is statistically significant, as the statistics of F_ (st.) = 15.606 were significant to confirm the overall significance of the estimated model. The value of R ^ 2 = 63.74 indicates that imported inflation is more than 63% of the change in the general budget indicator.As for the value of the (calculated t) statistics, it is significant for all the variables of the estimated VAR (2) model. This shows that increasing in the imported inflation rate (by 1%) will lead to an increase in the volume of expenditures in the budget (by 0.463%).

3-5 : The Results of the Analysis of Variance

Table (10) shows that the results of the analysis of variance of imported inflation at the first stage is (99.54%) which is very close to the correct one and this means that the independent variable,which is imported inflation, explains almost 100% of the prediction error in the variance due to the same variable in the first period. The ratio continues at approximately the same pace to the tenth period, and this shows the relative importance of the imported inflation variable IM in explaining the behavior of the dependent variable in the general budget BG. Imported inflation directly affects the general budget in Iraq during the study duration.

Table (10)

Results of an analysis of variance for imported IM inflation

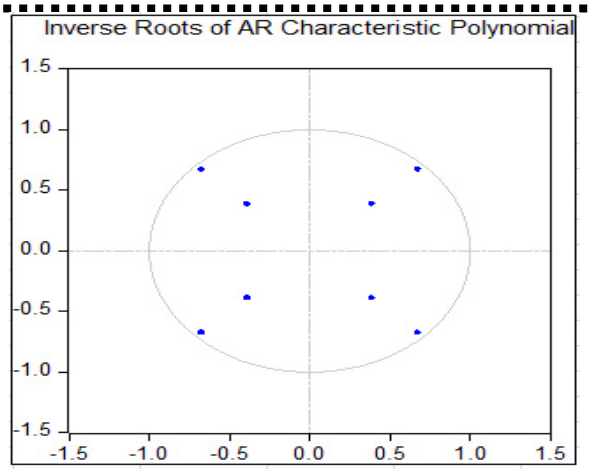
Period	Coefficient	Std. Error	IM
C(1)	0.000449	0.077332	99.54
C(2)	0.000449	0.077332	99.54
C(3)	0.000449	0.077332	99.54
C(4)	0.001792	0.077363	0.9963
C(5)	0.003846	0.884204	99.65

C(6)	0.003846	0.884204	99.65
C(7)	0.003846	0.884204	99.65
C(8)	0.001834	0.884196	99.66
C(9)	0.18568	1.438398	89.76
C(10)	-4.96E-05	0.011672	99.66

Source: Prepared by researchers using EViews10

3-6 : Stability test of the estimated model

To ensure the stability of the estimated regression vector model, we use the Inverse Root test, and the model is considered stable through it when all the roots are less than the correct one and are located within the unit circle, and the figure below shows the test result:



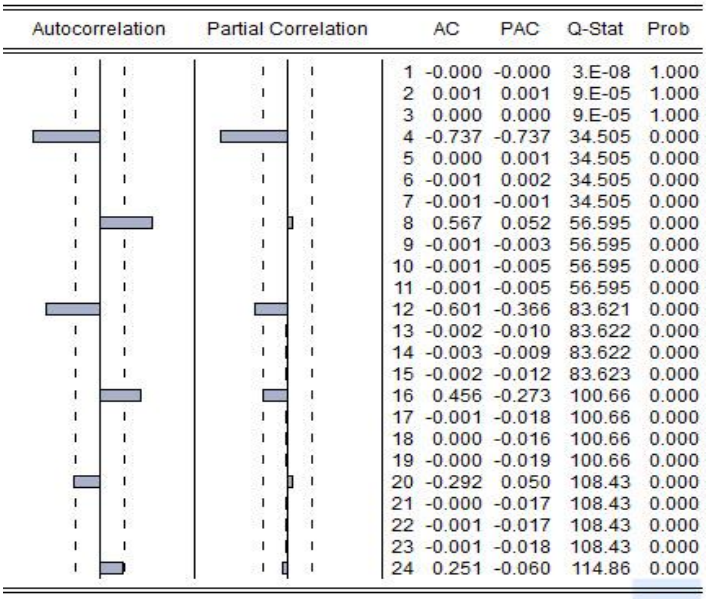
Source: Prepared by researchers using EViews10

We notice from the above figure that all the roots are less than the integer one and that they are actually located inside the unit circle, so the regression vector model VAR2 is considered to fulfill the cosistency conditions.

Table (11)

Normal distribution test results

Date: 08/30/20 Time: 15:48
Sample: 2004Q1 2018Q4
Included observations: 57

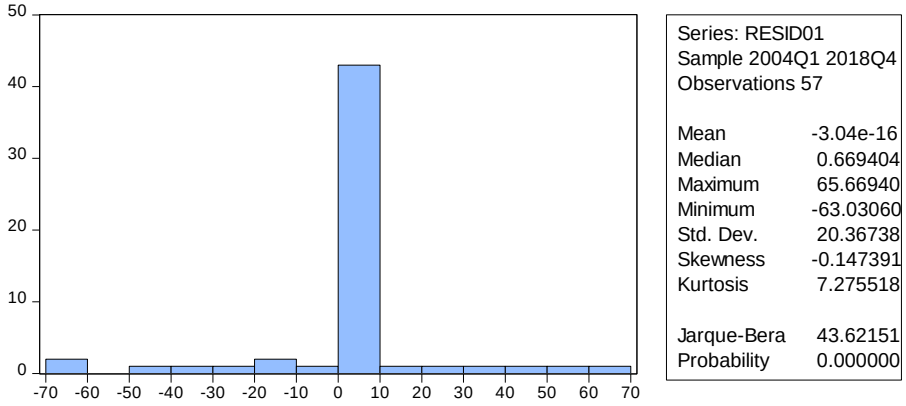


Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
		1	-0.000	-0.000	3.E-08	1.000
		2	0.001	0.001	9.E-05	1.000
		3	0.000	0.000	9.E-05	1.000
		4	-0.737	-0.737	34.505	0.000
		5	0.000	0.001	34.505	0.000
		6	-0.001	0.002	34.505	0.000
		7	-0.001	-0.001	34.505	0.000
		8	0.567	0.052	56.595	0.000
		9	-0.001	-0.003	56.595	0.000
		10	-0.001	-0.005	56.595	0.000
		11	-0.001	-0.005	56.595	0.000
		12	-0.601	-0.366	83.621	0.000
		13	-0.002	-0.010	83.622	0.000
		14	-0.003	-0.009	83.622	0.000
		15	-0.002	-0.012	83.623	0.000
		16	0.456	-0.273	100.66	0.000
		17	-0.001	-0.018	100.66	0.000
		18	0.000	-0.016	100.66	0.000
		19	-0.000	-0.019	100.66	0.000
		20	-0.292	0.050	108.43	0.000
		21	-0.000	-0.017	108.43	0.000
		22	-0.001	-0.017	108.43	0.000
		23	-0.001	-0.018	108.43	0.000
		24	0.251	-0.060	114.86	0.000

Source: Prepared by researchers using EViews10

3-7 : NormalDistribution Tests for Residues

This test is based on the calculated values of the Skewness statistics (which is the symmetry test) and the estimated Kurtosis of the residuals of the estimated regression vector model shown in the figure below.



Source: Prepared by researchers using EViews10

As for the Jarque-Berra normal distribution test, this test is used to test the null hypothesis of a series of residues with a normal distribution. The figure shows that its value is (43.62151) with a statistically significant (0.00).

The Liung-Box test is used to ascertain whether the residues are white noise or not, through the last value of the Q-Stat test column in table (11), whose value is (114.86).Since it is smaller than the tabular value, we accept the null hypothesis and reject the alternative hypothesis (the residues are white noise).

Through the tests for the normal distribution of residues above, we found that the residues are consistent. Thus, the residues represent random shocks, and this means that the estimated model is acceptable.

Conclusions

1- Inflation in Iraq achieved significant and influential increases and fluctuations in the Iraqi economy during the duration of the study. It is recorded (-2.8) in 2009 as the lowest decrease and (54.2) in 2006 as the highest rise in inflation.

2- The new fluctuations in inflation averagesin Iraq are related to some factors; the transformation of the Iraqi economy into a market economy, economic evolution after the closure before 2004 and the impact of fluctuations in global oil prices.

3- The impact of imported inflation in Iraq decreased from (2,363) in 2004 to (0.808) in 2018 because of the improvement in local economic production of agricultural products and small industries.

4- The Iraqi budget has witnessed large fluctuations between the surplus and the large deficit that pushed the country to borrow from different sources. This is mainly due to the high public expenditures, the low oil prices and the great corruption in the country.

5-It stabilized after taking the first difference using the unit root tests (PP and ADF). By using Cranger's causation, it is noticed that the causal relationship is heading from imported inflation IM to the general budget of BG in Iraq during the study duration. Thus the hypothesis of the study is verified.

6-The results of the estimated regression vector VAR (2) model are significant because the statistics for F_ (st.) = 15.606 are significant to confirm the overall significance of the estimated model. The value of R ^ 2 = 63.74 indicates that imported inflation explains more than 63% of the change in The General Budget Index, while the value of (t calculated) statistics is significant.

Recommendations

1- Supporting the necessary plans and procedures to reduce the external economic dependence of Iraq, strengthen its local economy and enchain customs breakdowns by encouraging national industry and focusing on industries with a comparative advantage.

2- Shifting the general budget to budgeting programs, supporting local productive sectors for diversification and not relying entirely on crude oil and foreign imports.

3- Conducting more standard research and studies to measure the impact of imported inflation on the different sectors of the economy and society.

4- Diversifying sources of income in the Iraqi economy and encouraging the policy of import substitutions by making use of technology to increase

product quality and reduce production costs, i.e. providing it with an opportunity to compete imported goods.

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