International Journal of Psychosocial Rehabilitation, Vol. 24, Issue 06, 2020
ISSN: 1475-7192

Imbalance of the productive structure and its effect on fluctuating government spending (Iraq case study)

[1]Fahad Mghemish Huzayran, [2]Khudhair Abbas Hussein Al waely, [3]Mohammed Naji Mohammed Al zubaidi

Abstract

The study aims to try to explain the reality of the imbalance of the productive structure in Iraq during the study period by providing an analysis of the indicators of the imbalance of the production structure represented by the imbalance of the structure of the agricultural, industrial, service, mining and quarrying sectors while tracking the impact of these imbalances on fluctuating government spending. As the research problem lies in the fact that the Iraqi economy has long suffered from an imbalance in its production structure and an unequal relationship between the constituent elements according to the proportions and levels determined by the economic theory. This resulted in weak growth of the sectoral contribution to the gross domestic product and the continuing rentier economy and its dependence on oil exports, which was negatively reflected on the fluctuation of government spending. The research reached several conclusions, the most important of which is the presence of a clear imbalance in the production structure of the Iraqi economy during the study period. In the first phase of the study, that is, during the nineties period, there was a great dependence on the agricultural sector because of economic sanctions on Iraq, which led to the scaling of government spending, but after 2003 it was the adoption The gross domestic product on the oil sector has increased significantly, which has led to an abundance of government revenues and reflected an increase in government spending and a clear neglect of the rest of the production sectors. The research reached several recommendations, the most important of which is the need to get rid of the rentier nature of the Iraqi economy by supporting the productive sector in the agriculture, industry and services sector by following a set of financial, monetary and commercial policies, as well as supporting the private sector and giving way to it to take its role in supporting the economy.

Keywords : *structural imbalance, agricultural sector, government spending, manufacturing sector, The services sector*

[1] University of Warith Al-Anbiyaa/ Faculty of Administration and Economics/ Business Administration Department
[2] University of Kerbala/ Faculty of Administration and Economics/ Department of Economics
[3] University of Kerbala/ Faculty of Administration and Economics/ Department of Economics

Received: 15 Jan 2020 | Revised: 5 Feb 2020| Accepted: 30 Mar 2020

I. Introduction

The structural imbalance is one of the economic problems of many countries, especially developing countries. There are multiple definitions of the concept of structural imbalance, including that structural imbalance means a situation that expresses a departure from the point of equilibrium between opposing forces and in economic analysis the opposing forces are expressed in the variables of supply and demand or the variables of investment and savings .... etc.

The structural imbalance appears in the form of imbalance in the relationship, inequality or imbalance between a specific type of economic variable, taking into account the objectives that the national economy should reach.)Mousawi &Mehannah,2010) (1)

The structural imbalance in the economy indicates the imbalance in the relations of general balance at the level of the national economy, which can affect the possibility of stability and economic growth and its sustainability, which leads at a later stage to the emergence of many bottlenecks, problems , and crises in the structure of the national economy. (Awwad,2004) (2)

Accordingly, the disruption of the economic structure is the disruption of the relations of proportionality between its constituent elements, which leads to a gradual departure from the goals that should be reached, which ultimately leads to the loss of the general balance in the economy and the distortion of reciprocal relations between the total variables, which means the economy is unable to play its role in life Social.(Yahya and Al-Musawi, 2015) (3)

Types of structural disorders

The structural imbalances of the economic sectors can be divided into the following:

1- Internal structural imbalances: It can be said that the internal structural imbalance in general means a disproportion between the current of total domestic demand for goods and services versus the current total domestic supply of these goods and services, and internal imbalances are divided into: -

A- The structure of the gross domestic product: The structure of the gross domestic product is defined as the sum of the productive, distributive and service activities that make up the national economy, and that the different rates of growth of economic sectors and then the difference in sectoral growth elasticity, this reflects the difference between sectors for the opportunities for growth available to them, so the difference The elasticities of growth between sectors is the one that explains the changes in the structure of the national product, which explains the low relative importance of each sector.(Kazim,2017,p47)(4)

B- Commodity productive imbalance: - The marginal tendency and the average tendency of consumption in most developing countries is characterized by a high percentage of available income due to the low levels of entry for the majority of the population in these countries and the other influencing factor in these ratios is the high population growth rate in these countries, which led to increasing rates Poverty and unemployment and thus the inability of the economy to satisfy human needs in these countries, as well as the emergence of serious consumption patterns in developing societies, which weakens local savings and makes them unable to meet new investment needs, which causes a difference in the production structure.(Idan,p518) (5)

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C- Employment structure: - The change in the employment structure leads to a corresponding change in the productivity of the sectors of the national economy, and trying to identify the size of the change in the work structure is an important axis for studying structural changes in the context of the process of economic development, especially at the sectoral level and in developing countries in particular because the majority of their population They work in agriculture, and this sector is one of the most backward sectors in these countries. Therefore, the decline in productivity in this sector was a catalyst for the transfer of the workforce to the more productive sectors with economic development.

D- Monetary structural imbalance: - The imbalance of the monetary structure is represented by the gap that appears between two main streams in the economy, the first of which is the cash flow stream and the commodity flow stream. To push effective aggregate demand above the level of aggregate supply available leading to an increase in the overall level of prices.(Idan,p519) (6)

E- Financial imbalance: - This imbalance represents the imbalance between government revenues and the expenditures of government sectors, that is, it explains the deficit of the state's public budget and some economists believe that the financial imbalance represented by the state's budget deficit is the main cause of many of the problems, crises and structural imbalances that developing countries suffer from (Abdul Karim and Ghaidan, 2017 ,p875)(7)

2- External imbalances: - It includes the external change in the structure of the economies of developing countries in the imbalance of payments and the imbalance of the trade balance.

II. Presentation and analysis of the results of the standard model

The statistical program Eviews9 will be used to analyze the effect of the agricultural sector, mining and quarry sector, The services sector and The manufacturing sector on the government spending. The analysis includes the following variables:

- the government spending variable GE
- the agricultural sector variable E
- mining and quarry sector variable MQ
- The manufacturing sector variable, M
- The services sector variable S

The data for these variables are used for a time series from 1990 to 2018. The data will be analyzed according to the VAR model as well as the causal approach to show the type of relationship between the variables. According to the VAR model, the variables of the agricultural sector, mining and quarry sector, The services sector ,The manufacturing sector and government spending are internal variables, The relationship can be characterized by the following equations:

$GE = B_O + B_1E+B_2MQ +B_3M +B_4S$

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2.1 - Test Stationary stability variables

The first step should be to test the stability of the model variables and determine the rank of the joint integration of the time series and see if the variables are stable or not. This is done by applying the unit root test to the extended ADF. After the extended root unit (ADF) test, Table (1).

Table (1) Expanded Dicky Fuller test for unit root

Variables	Delays	The level				First differences			
		a		**b**		**a**		**b**	
		(t) Calculated	**(t)** Table	**(t)** Calculated	**(t)** Table	2. **(t)** Calculated	**(t)** Table	1. **(t)** Calculated	**t) Table(**
LOGE	**1**	-1.61	-2.97	-3.08	- 3.6	*-3.11	-2.97	-3.26	3.58-
LOGMQ	**1**	-0.71	3.28-	-3.22	-3.58	*4.47-	2.97-	4.42-	3.58-
LOGM	**1**	-0.87	2.98-	- 4.06	-3.79	*5.89-	3.14-	2.19-	3.87-
LOGS	**1**	-1.63	2.97-	-3.19	3.58-	*4.80-	2.98-	-4.64	3.59-
LOGGE	**1**	-0.99	-2.99	-1.71	-3.61	*-6.93	-2.99	-7.16	-3.61

The source is prepared by the researcher based on the standard appendix

A means the gradient contains a cutoff and a general direction

b means the gradient contains only a breaker

* Morality at the level of 5%

We note from the table that the original strings were unstable at the level; Therefore, the unit root test was done first-difference Of the original series showed that all the variables stabilized at a significant level (5%). Therefore, the variables are integrated (Cointegration) of the first degree I (1) with the existence of a cutter and a general trend.

2.2 - Co-integration test

It is noted that joint integration shows the long-term equilibrium relationship between the variables. Joint integration will be tested in the Johansson method. Since the analysis contains five internal variables, if these

variables are integrated together, there are at least four common integration paths. The joint integration test of the model variables was conducted and the results were shown in Table (2).

Table (2) Johansson Combined Integration Test

The null hypothesis	Alternative Hypothesis	Statistic Value	Critical Value
Trace test			
r=0	r>1	*219.68	69.81
r≤1	r>2	*118.14	47.85
Maximum test			
r=0	r=1	*101.54	33.87
r=1	r=2	*88.69	27.58

* Meaning at a significant level 5%

Source of the researcher's preparation

Note from Table (2) The results of the Johanson test indicate that there are two cointegration paths according to the Trace test, and then reject the null hypothesis that there is no common integration at a significant level (5%). Johansson's maximum value test Indicates the presence of vectors at a significant level (5%). Which confirms the existence of a long-term balance between the variables of research and this means the possibility of the existence of false regression as well as the results indicate a causal relationship between these variables

2.3: Granger Causality Test

The test is used to determine the direction of causation between the study variables. This test shows the causal direction whether it is one-way or two-way, or that both variables are independent. After the test, the results were as shown in Table 3:

Table (3) Cranger's Causality Test

Pairwise Granger Causality Tests	
Date: 10/12/14 Time: 19:21	
	Sample: 1990 – 2013

		Lags: 1	
Prob.	**F-Statistic**	**Obs**	**Null Hypothesis:**
0.2693	**1.27628**	**25**	**LOGMQ LOGE**
0.8856	**0.02114**		**LOGE LOGMQ**
0.5837	**0.30890**	**25**	**LOGM LOGE**
0.3412	**0.94482**		**LOGE LOGM**
0.2483	**1.39709**	**25**	**LOGS LOGGE**
0.0036	**10.2996**		**LOGE → LOGS**
0.5382	**0.39055**	**25**	**LOGGE LOGE**
0.2517	**1.38258**		**LOGE LOGGE**
0.0333	**5.12579**	**25**	**LOGM → LOGMQ**
0.7425	**0.11058**		**LOGGMQ LOGM**
0.3539	**0.89242**	**25**	**LOGS LOGMQ**
0.0006	**36.4599**		**LOGMQ → LOGS**
0.7283	**0.12369**	**25**	**LOGGE**
0.0484	**4.34653**		**LOGMQ → LOGGE**
0.4818	**0.51135**	**25**	**LOGS LOGM**

Received: 15 Jan 2020 | Revised: 5 Feb 2020| Accepted: 30 Mar 2020

0.0014	**13.2631**	**LOGM → LOGS**	
0.2209	**1.59216**	**25**	**LOGGE → LOGM**
0.0132	**7.32052**	**LOGM → LOGGE**	
0.0000	**76.7171**	**25**	**LOGGE → LOGS**
0.3915	**0.76268**	**LOGS → LOGGE**	

Source: Prepared by the researcher based on the outputs of the statistical program

And the conclusion of the test of causality to Kranger is as follows:

• There is no causal relationship between LOGMQ and LOGE, meaning that the changes in the mining and quarrying sector do not affect the agricultural sector and vice versa.

• There is no causal relationship between LOGM and LOGE, meaning that changes in the manufacturing sector do not affect the agricultural sector and vice versa..

• There is a one-way causal relationship between LOGGE and LOGS, that is, the previous changes in LOGGE explain the current changes in LOGS, as increased government spending leads to a change in the services sector.

• There is no causal relationship between LOGGE and LOGE, meaning that changes in the agricultural sector do not affect government spending.

• There is a one-way causal relationship between LOGMQ and LOGM, that is, the previous changes in LOGMQ explain the current changes in LOGM, as changing the mining and quarrying sector leads to a change in the manufacturing sector.

• There is a one-way causal relationship between LOGMQ and LOGS, that is, the previous changes in LOGMQ explain the current changes in LOGS, as changing the manufacturing sector leads to a change in the services sector.

• There is a one-way causal relationship between LOGGE and LOGMQ, meaning that previous changes in LOGMQ explain the current changes in LOGGE, as changing the mining and quarrying sector leads to a change in government spending.

• There is a one-way causal relationship between LOGM and LOGS, that is, the previous changes in LOGM explain the current changes in LOGS, as changing the manufacturing sector leads to a change in the services sector.

• There is a one-way causal relationship between LOGGE and LOGM, that is, the previous changes in LOGM explain the current changes in LOGGE, as changing the manufacturing sector leads to a change in government spending.

• There is a one-way causal relationship between LOGGE and LOGSI, meaning that previous changes in LOGGE explain the current changes in LOGS, as increased government spending leads to a change in the services sector.

We conclude from the foregoing that some of the variables have relations between them in one direction and some of them have an independent relationship between them.

2.4: Analysis of the results of the VAR (Vector Autoregression Estimates)

Before analyzing the VAR model for model variables, the number of optimal delay times for these variables should be known. After the test, the results were as shown in Table (4). The optimum delay times based on the AIC standard, the SCWS and the Hanan-Quinn standard are determined mainly as the delay duration that carries the lowest value is chosen for these criteria:

Table (4) shows the number of delays or losses for the VAR model of the search variables

HQ	SC	AIC	FPE	LR	LogL	Lag
168.1028	168.2831	168.0376	6.54e+66	NA	-2011.452	0
163.5682*	164.6501*	163.1776*	5.35e+64*	124.9813*	1928.131	1

* Indicates the optimal number of delays or delays, and all tests at a significant level (5%).

LR: LR test.

FPE: Final Predictive Error.

AIC: Standard Akek.

SC: Standard Squares.

HQ: Standard Hanan Quinn.

From the table above we conclude that the number of deceleration times is one period based on the AIC and SC Schwarz criteria. The defaults of the variables were tested based on the above indicators which have the lowest value.

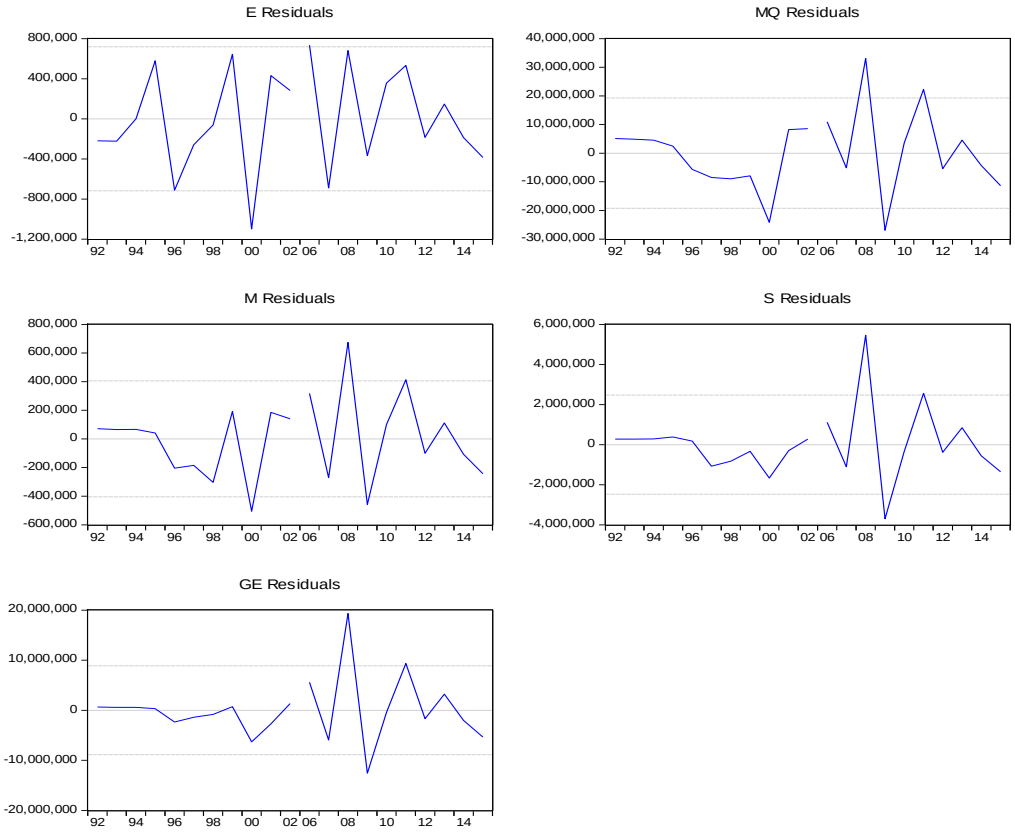

Figure (1) Residual oscillation

Table (5) Results of VAR model analysis

-579119.2	C	LOGGEI	variable
(4168273)		2.174082	LOGE(-1)
[-0.13894]		(4.77624)	
0.978628	R-squared	[0.45519]	
0.957256	Adj. R-squared	-0.400456	LOGMQ(-1)

Received: 15 Jan 2020 | Revised: 5 Feb 2020| Accepted: 30 Mar 2020

7.90E+14	Sum sq. resids	(0.33354)	
8889444.	S.E. equation	[-1.20064]	
45.78971	F-statistic	11.66619	LOGM(-1)
-358.0152	Log likelihood	(4.98593)	
35.14431	Akaike AIC	[2.33982]	
35.69144	Schwarz SC	2.128648	LOGS(-1)
37074668	Mean dependent	(1.93093)	
42996663	S.D. dependent	[1.10239]	
		0.206756	LOGGE(-1)
		(0.52278)	
		[0.39549]	

III. Estimating the function of study indicators in Iraq

The Statistical Program (SPSS) was used to estimate the impact models of the agricultural sector, the mining and quarrying sector, the manufacturing sector and the services sector as independent variables in government spending as a variable of the period (1990 - 2018)

GE = -10.5 - 0.31E+0.39MQ + 1.36M +0.92S

(0.00) (-0.19) (2.48) (0.49) (4.39)

R^2 =0.93 F= 81.290 DW= 1.85

We note through the model that the independent variables are associated with a positive relationship with the dependent variable of government spending, which means that the rise of the independent variables leads to an increase in the value of the dependent variable except for the agricultural sector, which is related to the inverse relationship with government spending, that is, the increase in the production of the agricultural sector leads to a decrease in government spending.

- Test (t): The t test indicated the significance of the regression coefficient of the mining and quarrying sector on government spending since the value of (t) calculated in the model (2.48) is greater than its tabular value of (1.699).also The t-test indicated the significance of the regression coefficient of the services sector on government spending, because the calculated value of t was (4.39) greater than its tabular value.

As for the rest of the variables, its significance was not proven on the government spending variable, since the calculated value of t is less than the tabular t.

- Test coefficient of the selection R2: According to the coefficient of determination, the independent variables affect 93% in the dependent variable and Boogie of 7% due to a number of other factors did not enter the model.

- F-test: The F test indicates the significance of the model's statistic, since the calculated F value of (81.290) is greater than its tabular value of (2.53).

- DW test: The model did not suffer from the self-correlation problem because the DW value is located in the critical resolution area of 1.85.

What can be observed from the regression equation is that government spending is related to a direct relationship with the mining and quarrying sector and manufacturing and services in Iraq and this means that these variables do not affect government spending while government spending is related to the inverse relationship with the agricultural sector and this means that government spending is affected by the output of the agricultural sector and in an inverse relationship That is, the increase in agricultural sector production leads to a decrease in government spending, and vice versa due to the underdevelopment of the agricultural sector in Iraq and its low levels.

IV. Conclusions

1- There is a clear imbalance in the production structure of the Iraqi economy during the study period. In the first stage of the study, that is, during the nineties period, there was a great dependence on the agricultural sector because of economic sanctions on Iraq, which led to the scaling of government spending, but after 2003, the dependence of gross domestic product on the sector The oil has greatly increased which resulted in an abundance of government revenues and reflected an increase in government spending and a clear neglect of the rest of the production sectors.

2- It becomes evident from the extensive Dickey Fuller test that the time series of the variables is unstable at the level, but all of them settled in the first difference at the level of significance (5%).

3- The results of the study indicate that there is a positive relationship between government spending, the mining sector, quarries, the industrial sector and the services sector in Iraq during the study period and it appears through the positive indication for the transactions of independent variables, while the agricultural sector coefficient was negative and not statistically significant in explaining the behavior of government spending in Iraq This is evident in the (t) test.

4- Demonstrating the significance of the regression coefficient of the mining, quarrying and services sectors on government spending through testing (t). As for the rest of the variables, their significance was not proven on the government spending variable.

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Received: 15 Jan 2020 | Revised: 5 Feb 2020| Accepted: 30 Mar 2020