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The analysis of macroeconomic gaps in Iraq for the period (1990-2017)

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Abstract

The study aims to investigate the analysis of macroeconomic gaps in Iraq between 1990 to 2017 via comparative quantitative research methods. As a result, inflation rates at zero limits except for some years such as 1991 because of the new monetary issue caused a sharp rise in prices. In conclusion, investment remains weak both public and private, as well as the erosion of infrastructure in security-stable governorates and their destruction in unstable security governorates.

Keywords: Unemployment, Inflation, Macroeconomic gaps, Expenditure.

El análisis de las brechas macroeconómicas en Iraq para el período (1990-2017)

Resumen

El estudio tiene como objetivo investigar el análisis de las brechas macroeconómicas en Iraq entre 1990 y 2017 a través de métodos de investigación cuantitativa comparativa. Como resultado, las tasas de inflación en límites cero, excepto en algunos años como 1991 debido a la nueva emisión monetaria, causaron un fuerte aumento en los precios. En conclusión, la inversión sigue siendo débil tanto pública como privada, así como la erosión de la infraestructura en las gobernaciones de seguridad estable y su destrucción en las gobernaciones de seguridad inestables.

Palabras clave: Desempleo, Inflación, Brechas macroeconómicas, Gasto.

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1. INTRODUCTION

The Iraqi economy is managed by the government sector effectively cannot be ignored as we find that the economic function of the public sector (government) almost dominates the overall economic policy. Where we find that Gt ≈ Go, which represents government spending is close to the total expenditure of the economy Gt, as the private sector has a limited role, because of the nature of its limited potential of investment spending but has two-thirds of the workforce, which is organized in its various sectors has the weight in employment and limitation of the unemployment rate as well as his weight in inflation rate and improve the standard of living of citizens (KHORSANDI & ALI BABAEI, 2017; GANDELMAN & HERNÁNDEZ-MURILLO, 2009).

The problem statement is The Iraqi economy faces many challenges that require the ability of the government to address and the most important of these challenges is the high unemployment rates, which is posing a serious threat on the social and economic level, and high inflation rates and their impact on the level of economic growth. The importance of the study (DAVID & SMYTH, 2002). This study focuses on the importance of tackling the high volatility in inflationary and deflationary gaps that cause the deviation of the values of most macroeconomic variables. Study of Hypothesis is The harmony of the deflationary and inflationary gaps supports the overall balance in the long run. Objectives of the Study:

1. Determine the factors affecting the overall demand.

2. Determine the factors affecting the overall supply (AUWAL, 2013).

2. METHODOLOGY

Macroeconomic policy is the policy of macroeconomic balances while maintaining normal rates to increase economic growth and achieve its objectives. But what happens is that this policy tends to one party to another, which causes problems that may be traumatic for consumers, producers or both, especially in the short period, which results in that policy to clearly show very important indicators, both unemployment or inflation or bot. Therefore, we find that the general macroeconomic policy, which is supposed to seek a general balance for both unemployment and inflation at their natural limits from negligence in that balance in favor of one or both parties, where the problem emerges through the method of spending on real GDP as follows:

Consider the tariff formula for spending on real GDP as follows:

$$Y = C + I + G + M - X \text{ ---------- } (1)$$

Where Y real GDP C real private consumer spending I real total investment spending G real government spending M real export value

X real import value. Where we find that the real total investment spending is divided into the formation of real gross fixed capital i.c and change in the real commodity stock ch.c and thus:

$$I = i.c + ch.c \text{ ---------- } (2)$$

By substituting this formula (2) in formula (1), the new formula is as follows:

$$Y = C + (i.c + ch.c) + G + M - X \text{ ---------- } (3)$$

Which leads to the final version, which will be written as follows:

$$Y + X - ch.c = C + i.c + G + M \text{ ---------- } (4)$$

Therefore, we find that the right side of the formula (4) represents the total supply side (TS) with its components that is:

$$TS = Y + X - ch.c \text{ ---------- } (5)$$

The left side represents the total demand TD with its components ie:

$$TD = C + i.c + G + M \text{ ---------- } (6)$$

Forms (5) and (6) represent both sides of the total supply TS and total demand TD.

$$TS > TD \text{ ---------- } (7)$$

The economy is facing the problem of unemployment in general and not at its natural borders, but more than its natural limits, there will be the problem of unemployment (2), which haunts all government parties and the unemployed in the private sector.

If the total demand TD is greater than the total supply TS:

$$TD > TS \text{ ---------- } (8)$$

Therefore, the economy will face inflation (3) above its natural limits that stimulate economic growth and often different economies, especially developing, including Iraq inflation rates may reach open inflation and hyperinflation and here is the catastrophe on the incomes of individuals of different segments, especially low-income as a result of the loss of money Inflation becomes a real problem facing the national economy. The two problems lie in both unemployment and inflation, not in their indicators, but within the limits allowed by the laws of the market and the general economic policy of the government, where it recognizes that the abnormal limits of the problem of unemployment can be clarified according to the following formula (4):

$$U = NU - ACU \text{ ---------- } (9)$$

Where NU represents natural unemployment (ACU) and (ACU) represents actual unemployment. Negatively on social peace, especially in the circumstances of Iraq. If NU is greater than actual unemployment (ACU), it will leave the economic situation without negligible effects, except to the extent that it does not concern the general economic policy in the country, which could be benefited in the case of a harmonious expansion with the increase in the volume of public and private investments in the country. The national economy to move in the direction of economic growth promotions in a way that positively affects the socio-economic well-being of the citizens' living standards is the goal of the general economic policies of the country (MARIA & KENNEDY, 2011).

As for the problem of inflation, it is known that there are natural limits of inflation that cannot be exceeded in any form. The natural limits of inflation and the catalyst are the basis for increasing economic growth, which pays to achieve high rates without the negative effects of increasing the rate of inflation at its abnormal borders, depending on the desired economic growth rate. At normal limits of catalytic inflation to increase this growth as in the following formula (5):

Inf = N.Inf - Ac.Inf ---------- (10)

If the natural inflation rate of 1% or 2% is the desired rate to increase the rate of economic growth in the country because any increase is undesirable, this increase will have a negative impact on the

living level of citizens and thus a lower rate of economic and social welfare and this negative impact of inflation will affect Negative impacts on the socio-economic peace of the country (MOREIRA, 2019).

3. ANALYSIS

Analysis of the structure of aggregate demand: The aggregate demand according to the Keynesian model consists of the elements of aggregate domestic expenditure, which is private consumption expenditure and general consumption expenditure and the total composition of domestic fixed capital and exports, and that aggregate demand in Iraq consists as in Figure (1) as follows:

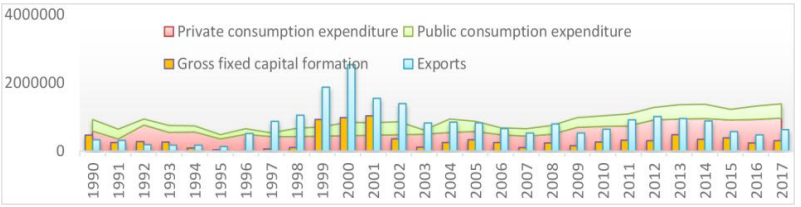

Figure 1: Total Demand Components in Iraq for the Period (1990-2017) (Million Dinars)
Source: Researchers' work based on Annex 1 data

It is noticeable from the annex and figure (1) that private consumption expenditure was volatile, it was reduced in 1991 due to the Gulf War and in 1995, 1997 due to the conditions of the economic blockade and 2007 in the aftermath of the global financial crisis. It also

suffered some small declines during the study period depending on the fluctuations of consumer tastes and income level. Apart from that, it has generally tended to rise in most school years following the growth of income and government spending. Public consumption expenditure was fluctuating during the study period and declined in 1992, 1995 and 1997 due to the decline of public resources and consequently the decline in public revenues.

Exports declined due to the economic blockade of the period (1990-1995) and started to rise gradually after this period following the implementation of the oil-for-food and medicine program. Exports in 1996 reached 513606.4 million dinars from 130493.2 million dinars in 1995. Significantly in 2003 because of the war conditions, which was reflected in the decline in oil exports. Exports also suffered a decline in 2007 and 2009 due to the repercussions of the global financial crisis, as well as a decline during 2015 and 2016 due to the vulnerability of Iraq to double shock (SA'IDU & ABUBAKAR, 2015).

It is clear from Annex (2) that the highest contribution rates recorded in favor of private consumption expenditure during the study period in the total demand, it reached in 1990 (34.2%) and 2000 (10.4%) and 2017 (41.7%) has a compound growth rate (1.8%). And exports thanks to oil exports as Iraqi exports are not characterized by diversity and attractiveness except crude oil. Its share in 1990 was 19% of total demand, 2000 (58.1%) and 2017 (27.2%) and its compound growth rate was 2.4%, the highest compound growth rate during the study period. (2) Then comes the general consumer spending and then the gross domestic capital formation.

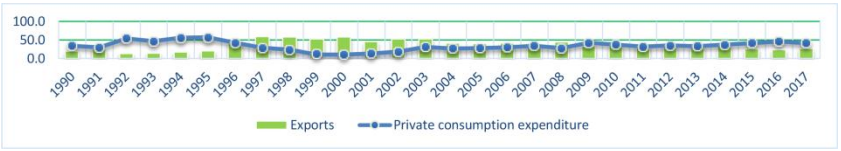

Figure 2: Contribution of private consumption expenditure and imports to total demand in Iraq for the period (1990-2017) (%)
Source: - Work of researchers based on the data of Annex (1)

The aggregate supply according to the Keynesian model consists of GDP and imports minus net commodity inventories as they were produced earlier. As shown in Appendix 1 and Figure 3 below, the first component of the aggregate supply, the gross domestic product of Iraq, has been volatile throughout the study period (RANDOLPH & GABRIEL, 1983). It was reduced in 1990 and 1995 due to the economic blockade and the decline of crude oil production and the prevention of export, as well as in 2003 due to the change of regime and the subsequent occupation and security turmoil.

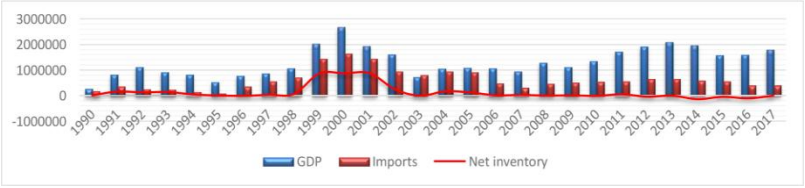

Figure 3: Total supply components in Iraq for the period (1990-2017)
Source: Work of researchers based on the data of Annex (1).

As for imports, which was the part of macroeconomic policies to cover the deficit in the overall supply following the decline in gross domestic production, where it began to escalate after 1995 following the implementation of the oil-for-medicine and food by the United Nations, but declined after 2000 to reach (1452813.5) million dinars in 2001 due to

the volatile political and security situation before 2003. Imports also increased after 2003 to 2005 to absorb the surplus of domestic demand, and imports declined in 2006, 2007 to the slowdown that hit the world because of the repercussions of the financial crisis Global but a Take an upward trajectory for the remainder of the study to cope with expansionary macroeconomic policies that injected aggregate spending items. Net inventories ranged from positive to negative, depending on the changing consumer tastes and declining attractiveness of some goods and services during the study period.

It is noted from Annex (2) that the GDP and then imports had the highest percentages to contribute to the composition of the total supply during the study period as shown in Figure (4). The contribution of output in 1990 (61.7%), 2000 (77.5%) and 2017 (81.3%) and its compound growth rate (7.2%), thanks to the production of crude oil. Imports contributed to the total supply in 1990 (42.6%), 2000 (47.7%) and 2017 (18.7%).

Figure 4: The relative contribution of GDP and imports in Iraq for the period (1990-2017) (%)
Source: - Work of researchers based on the data of Annex (2).

Appendix 1 and Figure 5 show that there was a deflationary gap in the macroeconomic gap in 1996, 2010 and 2012-2016, which caused continued unemployment to increase during the study period. The unemployment rate in 1990 (5.5%), 2000 (22.2%) and 2017 (19.3%). Without expanding existing projects or creating good investment opportunities capable of absorbing super-supply in the labor market and qualifying and qualifying.

There is also an inflationary gap that has extended for a relatively longer period than the deflationary gap in the Iraqi economy. However, the efforts and efforts exerted by the Central Bank of Iraq to reduce and control inflationary pressures by all means available to the monetary policy, which culminated in the success and restore confidence in local work. It is noted that inflation rates at zero limits except for some years such as 1991 because of the new monetary issue, which caused a sharp rise in prices. And the period (1993-1995) for the same reason, with a significant decline in the total domestic production wheel and the decline of imports and imposing quantitative restrictions on some of them. This caused wild inflation that significantly weakened the local currency.

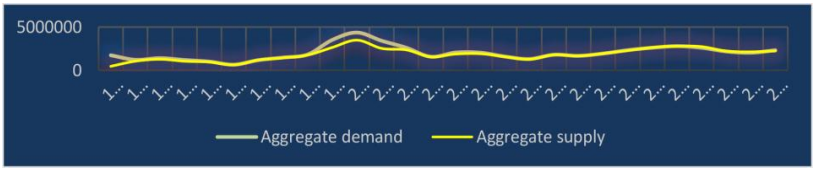

Figure 5: Macroeconomic Gap in Iraq for the Period (1990-2017)
Source: Work of researchers based on the data of Annex (1).

The duration of the inflationary gap in the Iraqi economy during the study period caused instability in most macroeconomic variables such as consumption, investment, output, etc. It has also led to a systematic failure of the macroeconomic gap. Despite the minimum recorded for inflation rates, but the continued survival cost the Iraqi economy a lot. As well as the psychological impact of the citizen and confidence in the importance of the local currency in discharging receivables and settlement of transactions and in being a good repository of value at saving.

The macroeconomic gap is affected by the deflationary gap, which can be expressed as the unemployment rate and the inflationary gap, which can be expressed as inflation. The macroeconomic gap derives its impact from several macroeconomic elements, most notably the above-mentioned Keynesian model. Other factors indirectly influence this gap. Any macroeconomic component that affects the aggregate demand side of the aggregate supply side has a long-term impact on the macroeconomic gap. Thus, the model of the deflationary and inflationary gap in the macroeconomic gap can be described as follows:

$$Gap = a + b1Une. + b2Infl. + b3Impo. + b4Gro.Pop. + Ut$$

The results of the ADF test for the time series of the study model were as follows:

Table 1: ADF Test Results for Time Series Stability of Study Model (1990-2017)

Variables	Level			1 deft.		
	Prob.			Prob.		
	Int.	Int.+ T	Non	Int.	Int.+ T	Non
The macroeconomic gap	(0.002)	(0.02)	(0.000)			
Unemp. rate	(0.3)	(0.7)	(0.7)	(0.001)	(0.006)	(0.000)
Infl. rate	(0.07)	(0.052)	(0.01)			
Imports	(0.1)	(0.4)	(0.2)	(0.02)	(0.02)	(0.001)
G-popul..	(0.08)	(0.2)	(0.8)	(0.001)	(0.009)	(0.000)

Source: Eviews 10

The ADF test indicates that the time series of the macroeconomic gap and Infl. Rate variables were stable at the first level (I). The time series of the macroeconomic gap stabilized at the three formulas, while the time series of the inflation rate stabilized at the formula at the level. The time series of the unemployment rate, imports and population growth (G-popul.) did not settle at the level in the three formulas and settled at the first difference I (1) in all three formulas. This means that the estimate will be real non-false and therefore ARDL will be performed.

It is noticed from the model (ARDL) installed in the statistical annex that the deflationary gap represented by the unemployment rate affects the overall economic gap (Gap) negatively, when it increases by one unit, the gap increases by (2493.8) units, as the impact intensifies with the decline of production wheel Weak management of economic resources due to the unstable conditions experienced by the

country during the study period of the Gulf War and the economic blockade and then the events of 2003 and beyond. Which caused high unemployment. The inflationary gap represented by the rate of inflation positively affects the macroeconomic gap, ie if the inflation rate increases by one unit, the gap increases by (113515.8) units. This is due to higher aggregate domestic spending, which directly contributed to higher aggregate domestic demand than domestic aggregate supply, leading to higher inflation and erosion of purchasing power, often causing dollarization and loss of confidence in the local currency. Imports also positively affected the overall economic gap. If imports increase by one unit, the gap increases by 1.13 units.

This effect is attributed to the effective contribution of imports in the formation of the total supply after the decline of the gross domestic product over a while. The study, especially after 2003, following the opening of the Iraqi economy to the outside world. The population growth positively affected the gap by (1260077) units, which means that the gap tends to rise with increasing population growth as the increase in population growth leads to an increase in total spending and thus increase the total domestic demand, which raises the macroeconomic gap at the borders of the inflationary gap due to Weak overall supply to keep up with aggregate demand. The coefficient of interpretation of the model (97%) means that independent variables explain the fluctuations of the macroeconomic gap very well. The probability level was less than (0.05) for economic variables. The statistical and standard tests proved in the statistical appendix were as follows:

The Bounds Test proved that the calculated F value was 11.4 at 0.05, which is higher than the upper and lower limits. The error correction coefficient of the model was negative and significant ie (1.3-) of the short-term deviation generated by inflationary and deflationary gaps in the macroeconomic gap can be corrected in three months to return to the long-term equilibrium situation. The natural distribution test has a probability ratio (0.6) that is, the model follows the normal distribution. Fischer's calculated probability of Breusch-Godfrey for autocorrelation (0.1) is insignificant, thus accepting the null hypothesis and rejecting the alternative hypothesis. The Fischer probability value of White (0.7) is non-significant, thus accepting the imposition of nullity and rejecting the alternative hypothesis, which means that there is no problem of inconsistency of variance in the model. The (VIF) test did not prove that any value of the model variables occurred within the values of (5-10), which means the model is free from the problem of linear multiplicity.

4. CONCLUSIONS

1- External shocks in Iraq have affected wars and economic crises negatively in the components of aggregate demand, which caused the distortion of its structure throughout the study period, as the percentage of private consumption demand increased in the composition of aggregate demand, while exports and then general consumer demand respectively contributed to the formation of aggregate demand.

2- Very large weakness in the contribution rates of gross domestic capital formation fixed and is the most important part on which economic policies rely on its success. Investment remains weak both public and private, as well as the erosion of infrastructure in security-stable governorates and their destruction in unstable security governorates. This posed a threat to the success of economic policies to address the inflationary gap.

3- Distort the structure of the overall supply, despite the high rates of output contribution to its composition, but that output crude oil is the largest proportion of it as well as being a traditional production is not incubated to technology. However, the contribution was that imports had a very large share of the aggregate supply and this is a serious indicator in the weakness of the aggregate supply structure and the decline of domestic production in the absorption of domestic demand.

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