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Measuring and analyzing the impact of monetary aggregates on the level of aggregate demand in Iraq

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Abstract

Given the peculiarities of the rentier Iraqi economy (IE) structure, which refers to the weakening of the production machinery, the problem with the IE is not just supply, but also demand. In order to comprehend the direct relationship between them and how it affects the activity, the research seeks to quantitatively link the relationship between monetary aggregates (MA) and Aggregate Demand (AD). From 2004 through 2020, the data were collected to measure the study's variables. The study discovered that MA have a significant impact on AD because there is a direct relationship between them in the short and long terms. This relationship shows that MA are directly related to that demand because it rises when they do and falls when they fall. The quantitative approach was used to arrive at this result since there existed an equilibrium relationship between the long- and short-term variables in terms of the parameter of the long-term variable. In addition, public spending has a direct role in the increase in the volume of MA and in a direct relationship, which contributed to the increase in the volume of AD in light of the weak flexibility of the production system, which was reflected in the increase in imports. While the study advises working to strengthen economic sectors, particularly those that have extensive connections to other sectors, and increase their share of the gross domestic product. Particularly the tourist industry, with its lucrative financial returns and plentiful work opportunities that help raise people's standards of life and lessen the unemployment issue. Compared to other industries, exploiting it doesn't need much effort. Additionally, efforts should be made to expand the private sector so that it can draw in the rising level of national AD and provide the required support, such as funding or energy supplies. Additionally, local products are safeguarded by the application of customs taxes. The research's novelty is demonstrated by the use of the ARDL model to quantify and standardize the relationship between MA and AD.

Keywords: monetary aggregates, Aggregate Demand, Iraqi economy, GDP.

1. Introduction

MA are the primary tool used by the monetary authority, represented by the Central Bank, to direct its monetary policy toward achieving economic stability by influencing macroeconomic variables, which in turn affect AD. Which increases pressures on local production to meet that demand. The weakness of the flexibility of the production system, as is the case in the

IE, is reflected in the volume of imports, the inability of the economy to compete with imported goods in terms of price and quality. As a result of their departure to pay for imports, this worsens the country's economic structure distortion, the loss of possibilities for development and Economic Growth (EG), and the failure to profit from foreign currencies in attaining development. As a result of the production system's limited flexibility, the multiplier and accelerator mechanisms are made to operate outside of the economy.

1.1 Research Problem

Through its influence on all macroeconomic variables, the monetary authority uses MA as one of its fundamental tools to accomplish its monetary and even macro-objectives. This results from the significance of money in the economy, particularly in the wake of the development of the Keynesian theory and its focus on effective AD, which is primarily influenced by the amount of money in the economy. The observation that the IE suffers from major structural distortions in the structure of the economy with the rule of weak flexibility of the production system in light of the increasing volume of government spending affecting the volume of MA is the research problem. This contributes to an increase in the country's AD, which is reflected in an increase in imports.

1.2 Research Hypothesis

The study is based on the hypothesis that "MA have a significant and positive impact on the level of AD in Iraq."

1.3 Research Objectives

The research intends to examine the EG that actually occurs in Iraq as well as the effects of MA on AD levels. Analyzing the impact of MA on Iraq's total level of demand.

1.4 Limitations of research

Boundaries of space: reflected in the IE.

Timeframe: covered the years 2004 through 2020.

1.5 Research Methodology

The researcher relied on combining the two methods of inductive and deductive analysis by analyzing the research data and following its developments for the purpose of extrapolating the economic reality, and then deducing the effects and results to reach specific results using the available economic tools. This helped the researcher achieve the research's goals and prove or refute its hypothesis. In addition to applying the quantitative approach.

2. Conceptual framework

2.1 The reality of economic activity in Iraq

The distortion of the economic structure is one of the most important challenges that the IE suffers from, and this is caused by the inability of those concerned to direct economic resources towards achieving goals that would contribute to maximizing social and economic benefits on a continuous and sustainable basis. The weak role of the industrial and agricultural sectors in the formation of the gross domestic product, with the industrial sector primarily producing consumer goods and relying on the international market to meet its intermediate and capital goods needs, made the IE dependent on and closely linked to the oil sector (OS) in the case of rising and falling prices. Table (1) makes it clear that after the events of

2004 and the ensuing political and economic developments, as well as the relaxation of economic sanctions on Iraq, the resumption of oil shipments to the international market, and the recovery in oil prices, the GDP and its growth rate (GR) grew. All of this is reflected in all components of the GDP, which led to its rise from (532353558.7) million dinars in 2004 to (198774325.4) million dinars in 2020, with a compound GR of (8.6%). The gross domestic product increased from roughly (53235358.7) million dinars in 2004 to (157026061.6) million dinars in 2008, but not at the same rate, which was different during the research period. This increase also coincided with the rule of stability in the global oil market. Additionally, the output of the OS, which climbed from 30807302.08 million dinars in 2004 to about (87165166.8) million dinars in 2008, was lowered by the ongoing rise in oil prices and oil exports. Oil production and GDP gradually increased to reach (125576675.9) and (273587529.2) million Dinars, respectively, in 2013, as this increase is due to the rise in oil prices and their peak, as they crossed the threshold of $100 per barrel, after the IE recovered from the previous crisis as a result of the improvement in oil prices.

Table 1: showing the progression of Iraq's GDP structure by economic sectors from 2004 to 2020 (million dinars).

output of other sectors	Services sector	industry sector	banking sectors	agriculture sector	OS	GR	Gross domestic product	Years
7793656.7	8624128	936942.3	314088.6	4759241.068	30807302.1	-	53235358.7	2004
13640482.7	10956506	970643.5	522088.6	5066464.944	42377412.9	38.13	73533598.6	2005
17416124.5	17588184	1472055	688233.3	5572777.765	52850580.2	29.99	95587954.8	2006
19850279.6	23405721	1816730	1872458	5494771.601	59015853.2	16.6	111455813.4	2007
25077062.4	33132499	2653740	2952090	6045503.372	87165166.8	40.89	157026061.6	2008
27474264.3	35012378	3409788	1920455	6832639.381	55993675.7	-16.8	130643200.4	2009
35411107.4	39543754	3678866	2171665	8362531.58	72896641.6	24.05	162064565.5	2010
38075709.2	44552057	6128624	3412036	9910116.097	115248565.1	34.1	217327107.4	2011
53997493.9	51607775	6914933	4804862	10474090.22	126426336.5	16.98	254225490.7	2012
64375145.2	58821319	6292513	5471751	13050125.14	125576675.9	7.62	273587529.2	2013
84428620.2	44225784	5008703	2983908	12841462.53	116931906.8	-2.62	266420384.5	2014
75647531.3	57819769	3770855	2283462	7960692.87	62009607.7	-21.3	209491917.8	2015
63403518.5	55656464	4689006	3261917	7747053.62	69111873.1	2.7-	203869832.2	2016
62299369.9	58687812	5868781	3837280	6320225.91	88708885.1	10.7	225722354	2017
40675863.7	65435086	3758096	3979161	4863418.53	102352853.8	2.1-	221064479	2018
65025059.3	78919303	5835582	5001928	10003855.3	113099141.8	25.7	277884869.4	2019
46910740.4	58240877	4969358.1	4174260.8	7950973	76528115.7	-28.5	198774325.4	2020
11.9	12.7	11	17.6	3.3	5.9	8.6		النمو المركب

Source: Ministry of Planning, Central Statistical Organization, Directorate of National Accounts, several years.

With the global economy exposed to the crisis of low oil prices in 2014, resulting from the slowdown in global EG and the low rates of demand for crude oil, which led to a reduction in oil production in Iraq and reached (62009607.7) million dinars in 2015, which in turn led to a reduction in the GDP and reached (209491917.8) million dinars in the same year. But these two outputs soon began to improve due to the economy recovering from that crisis and the improvement in global oil prices, reaching (113099141.8) and (277884869.4) million dinars, respectively, in 2019. The Corona pandemic, which epitomized a global health emergency, had a significant impact on the whole world economy, particularly the economic aspects that resulted from their consequences and the preventative measures adopted by nations as a result of the complete shutdown of numerous production facilities. It resulted in a decline in both the demand for oil and the rate of global growth. This in turn led to a decline in oil prices, which in turn had an impact on Iraq's oil production, which fell to (76528115.7) million dinars in 2020. Due to this, the gross domestic product fell, falling to (198774325.4) million dinars in the same year.

The agricultural sector has experienced steady growth since the beginning of this period, particularly as a result of the agricultural initiative, which was launched in 2007 and was intended to last for 10 years. This initiative had a positive impact on the volume of agricultural output, which increased from (4759241.0) million dinars in 2004 to (6045503.3) million dinars in 2015. The year 2008 saw an increase rate for the same time period of (6.16%). The effects of the agricultural initiative continued to raise the volume of output in the agricultural sector until it reached (130,050,125.1) million dinars in 2013, with an increase rate of 17.56% for the period 2009–2013, but this rise did not continue due to the events of 2014 and the accompanying control of some terrorist groups over a part of the agricultural sector from Iraqi lands, which adversely affected agricultural production and gradually decreased until it reached (130,050,125.1) million dinars in 2016. Despite this, there were significant advancements in the agricultural sector over the research period, leading to a compound GR of 3.3%.

The banking and industrial sectors followed a similar trajectory to the agricultural sector. Industrial and banking output increased from (936942.3 and (314088.6) million dinars in 2004 to (2653740 and (2952090) million dinars, respectively, in 2008, with increases of (29.73%) and (75.09%), respectively, as the two sectors gradually increased with minor fluctuations throughout the study period. However, the banking industry was negatively impacted by the global financial crisis in 2009, and it fell to (1920455). It was quickly followed by a sharp increase in output in the industrial sector, which helped it reach (5471751) and (6292513) million dinars, respectively, in 2013, with GR of (29.7%%) and (16.55%) for the 2009–2013 period. The production in the banking and manufacturing sectors saw a marked fall in 2014, reaching (298,908) and (5008703) million dinars respectively

as a result of the twin shock towards the end of the year. As the economy recovered from the shock, output in these two sectors began to rise, reaching (5001928) and (5835582) million dinars, respectively, with rates of growth of (10.88%) and (3.1%) for the period 2014-2019. The global health crisis had a significant impact on their decline in 2020. Despite this, the table shows that the overall trend of output in the banking and industrial sectors increased during the study period. This is evident from the compound GR attained by these two outputs, which reached (17.6%) and (11%), respectively.

Table (13), for example, shows that the volume of output in the service sector has gradually increased since the start of the study period. It grew from (8624128) million dinars in 2004 to (58240877.34) million dinars in 2020, resulting in a compound GR of (12.7%) over the same period. It is also clear that this increase did not occur at the same rate throughout the study period. The service sector grew steadily and gradually until it reached (58821319) million dinars in 2013, with positive GR throughout. The output of this sector then began to fluctuate slightly until it reached (58240877.3) million dinars at the end of the period. It is also evident that the output of the other sectors [1] has followed two different pathways, the first of which shows a consistent, progressive increase from 2004 to 2013.

In 2013, it was approximately (64375145.2) million dinars, up from around (7793656.7) million dinars in 2004. This is a result of the growth in the volume of real estate services, which is evident given the economy's current housing problem.

In addition to the rise of developing residential complexes and the growth of several neighborhoods in Baghdad. Due to the synchronization of the shocks the IE experienced as a result of the health and security crisis, the second track showed a progressive decline throughout the years 2014 to 2020. In such industries, output fell from approximately 84428620.2 million dinars in 2014 to around 46910740.4 million dinars in 2020. Despite this, other industries generally had a noticeable uptick, recording compound GR of 11.9% from 2004 to 2020.

Table (2) and Figure (1) make it clear that the OS dominates GDP contribution rates over the study period, averaging contribution rates of 46.3% from 2004 to 2020. The share of the oil industry clearly changed, which is obviously a result of changes in oil prices on the oil market. It should be emphasized that the global financial crisis, which caused a drop in oil prices, is what caused this percentage to steadily diminish from roughly (57.9%) in 2004 to (42.9%) in 2009. Then, depending on the global oil market, this ratio will move sometimes in an upward direction and sometimes in a downward direction. It should be noted that this proportion fell as a result of the national economy's reactions to the shocks that happened in 2009, 2014, and 2019. Despite this, the IE depends heavily on this industry and the money it generates to support its growth initiatives. Additionally, it should be mentioned that the agricultural sector's percentage contribution to the GDP gradually decreased, reaching 3.9% in 2008. This is because the country was subjected to a succession of wars that resulted in the

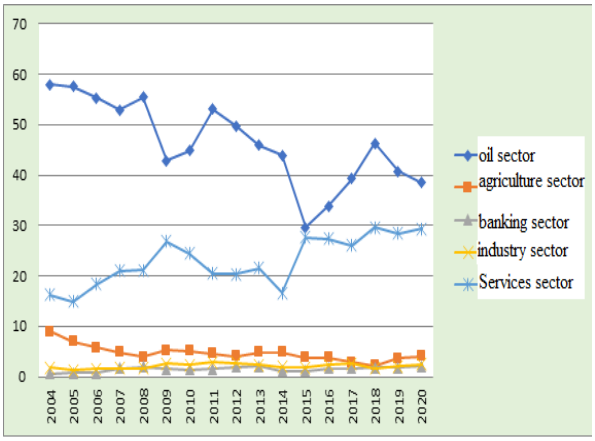
devastation of agricultural fields, which decreased agricultural productivity. In addition to other price and market-related regulatory factors, the lack of support for the agricultural industry and rivalry with importers, which is one of the most crucial elements in this sector's collapse, should also be mentioned. During the years 2004 to 2020, the sector's share was calculated as an average contribution ratio (4.7%). Despite the high production costs, the industrial sector did not receive the necessary support, which forced it to compete with importers and resulted in a small percentage of its contribution to the GDP, which was recorded as an average contribution ratio (2.1%) for the period 2004–2020. The contribution rate for the banking industry was incredibly low, averaging out at just (1.5%) from 2004 to 2020. It shows how backward this industry is and how capable it is of achieving the necessary outcomes. The prevalence of deteriorating political and uncertain security situations, which also led to the drop in production in these activities, can be stated to be the cause of the decline in the proportion of contribution made by these activities. According to the same table, the contribution of the services sector to GDP formation increased from about 16.2% in 2004 to (29.3%) in 2020, with an average rate of (22.9%) for the same period. This is due to a shift in societal consumption habits following the events of 2003, as well as the widening of the door to imports and the emergence of the phenomenon of simulation of Western consumption habits. Which can be consistent with the opinion of the economist (Baumal) that the societies that consume a lot of services are richer, and that their citizens become eager to buy services across the border. This inevitably makes their productivity on the way to decline, and this saying can be compared with the reality of the current IE (Saleh, 2012: 3).

Table 2: showing the percentages of how each economic sector contributed to the growth of Iraq's GDP from 2004 to 2020.

service sector ratio	Industry Sector Ratio	Banking Sector Ratio	Agriculture Sector Ratio	OS Ratio	year
16.2	1.8	0.59	8.9	57.9	2004
14.9	1.3	0.71	6.9	57.6	2005
18.4	1.5	0.72	5.8	55.3	2006
21	1.6	1.68	4.9	52.9	2007
21.1	1.7	1.88	3.9	55.5	2008
26.8	2.6	1.47	5.2	42.9	2009
24.4	2.3	1.34	5.1	44.9	2010
20.5	2.8	1.57	4.6	53.03	2011
20.3	2.7	1.89	4.1	49.7	2012
21.5	2.3	2	4.8	45.9	2013
16.6	1.9	1.12	4.8	43.9	2014
27.6	1.8	1.09	3.8	29.6	2015
27.3	2.3	1.6	3.8	33.9	2016
26	2.6	1.7	2.8	39.3	2017
29.6	1.7	1.8	2.2	46.3	2018
28.4	2.1	1.8	3.6	40.7	2019
29.3	2.5	2.1	4	38.5	2020
22.9	2.1	1.5	4.7	46.3	Mean

Source: Prepared by the researcher based on the data in Table (1).

Figure 1 shows the percentages of how each economic sector contributed to the growth of Iraq's GDP from 2004 to 2020.



Source: Prepared by the researcher based on the data in Table (2).

As a result, it is clear that the agricultural, industrial, and banking sectors do not significantly contribute to the GDP, as their percentage does not surpass the average worker's pay until 2020. This reflects the current situation of the GDP's significant structural imbalance and the OS's dominance over it. Along with the second-ranked services sector in terms of percentage contribution, these factors cause the production structure to be distorted and prevent it from being able to adjust to changes in AD. As a result, there is a discrepancy between domestic aggregate supply and demand. This calls for imports in order to purchase from and close that gap. Consequently, the economy is deprived of financial resources that might otherwise contribute to the growth of the nation and the improvement of its productive reality.

2.2 The path of MA developments in Iraq

The Central Bank is responsible for managing the money supply in a way that achieves stability in the general level of prices, using a set of tools based on market forces, and based on what reserves it has available in implementation of a provision in Law 56 of 2004. The peculiarity of the IE, however, is that it is heavily dependent on oil as a source of foreign currency and a foundation for the conduct of all economic activities in light of the disruption of the other sectors, complete control of the disrupted public sector over economic life, and a significant marginalization of the private sector, so that the workforce in the public sector is higher than 35%. About 40% of the economy in 2009 was made up of the private sector, which is primarily comprised of unproductive service industries and is in some way dependent on the public sector. This makes up the so-called free ride in the economy, which causes the remaining percentage to encounter full or partial unemployment (Planning Ministry, 2009).

Due to the total reliance on government spending, both consumer and investment, as well as the underdevelopment of the financial and banking sector and the low level of public awareness of banking, the majority of the money supply is made up of currency in circulation, which makes it harder for the central bank to control liquidity levels and reduces its influence as a factor determining the amount of money in the economy. The central budget and the state's general budget, which is made up of two components (revenues and expenditures), are closely related, therefore to show the budget revenues (mainly derived from the sale of oil). Neutralizing the negative effects of public spending, sterilizing the money supply through the window.

The close relationship between the two policies and the consequences is evident by tracking changes on both sides of the Central Bank's balance sheet and the government's financial balance as a result

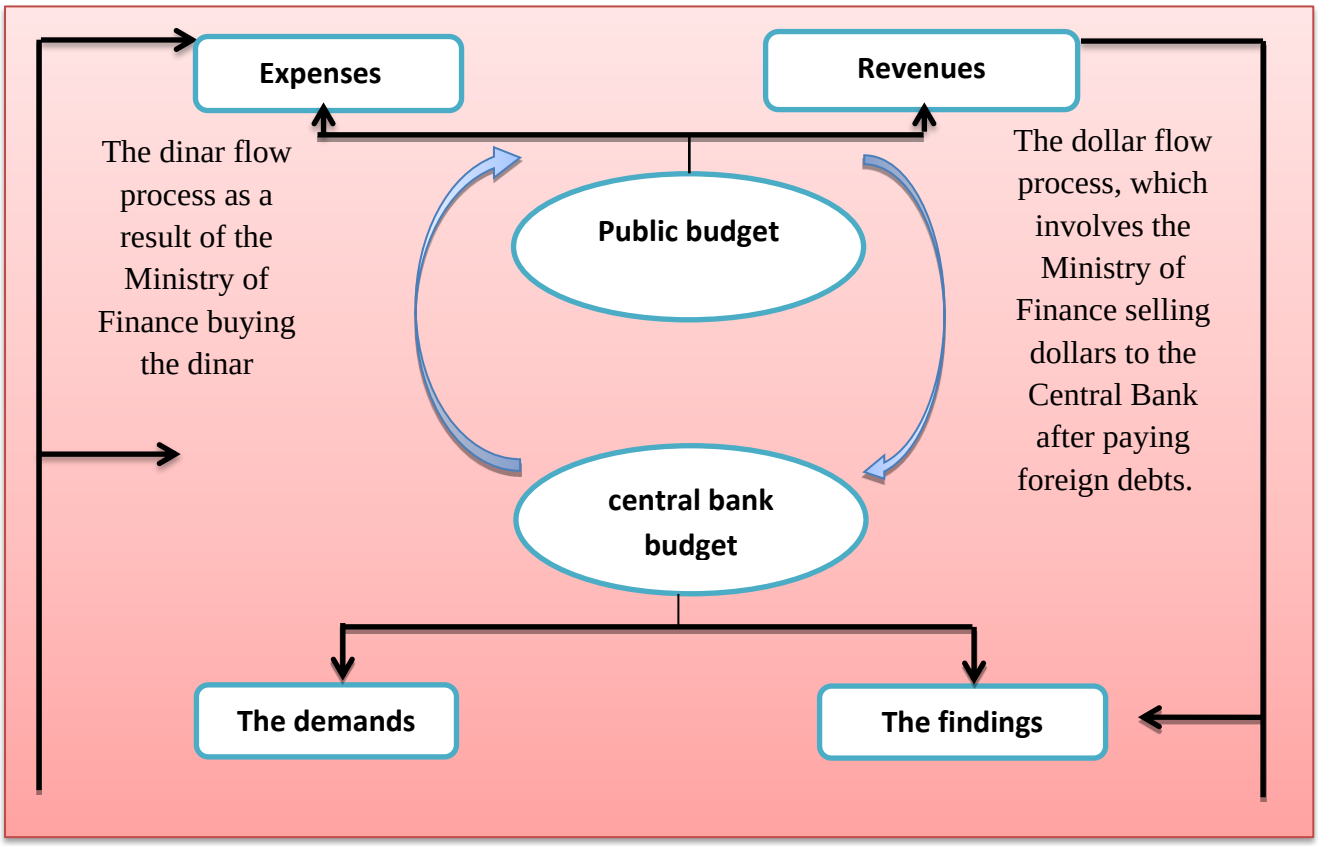
of financing the budget deficit on the one hand, and the oil rentier of the economy on the other, which is almost the only source of foreign exchange. The Ministry of Finance fulfills its external obligations through it and then sells them to the Central Bank to carry out its domestic financial tasks, as illustrated in Figure (2).

Figure (2) Relationship between the general budget and the budget of the Central Bank

central bank budget	
the demands	the findings
issued currency	foreign assets
bank reserves	local assets
**********	**********

Discount on government debt

Public budget	
Overhead spending	general revenue
running expenses	oil revenue
investment expenses	non-oil revenue
**********	**********



Source: Dagher, Mahmoud Muhammad Challenges Facing Monetary Policy, and the Difficulties of Consistency with Financial Policy, Central Bank of Iraq, Research on Monetary Policy, Issue 1, November, 2016, p. 3.

Following the path of government spending in Iraq, it can be seen that spending has increased significantly. This is because of the economic embargo placed on the country in the 1990s as a result of its invasion of Kuwait and the subsequent suspension of oil exports, which reduced revenues and caused a deficit in the public budget, forcing The Central Bank of Iraq to adopt a policy of deficit financing through the issuance of new cash. As a result, government spending significantly increased, rising from approximately (14179) million Iraqi dinars in 1990 to approximately (2518285) million Iraqi dinars in 2002. The huge decline in the purchasing value of money led to this spike in government spending. In addition to the previously listed reasons, it was necessary to boost expenditure allocations due to the high levels of inflation in order to meet public requirements, including the campaign to reconstruct what was damaged by the Second Gulf War. On the other hand, given that government spending is one of the elements of AD, this was accompanied by an increase in the gross domestic product. Given the decline in real aggregate supply and the suspension of imports, the increase in spending caused an increase in AD, which in turn caused price levels to rise. However, after 2003 and the Iraqi political system changed, oil exports resumed on the world market following the lifting of the thirteen-year-long economic blockade, public revenues increased, and the government's direction to rebuild Iraq and raise living standards resulted in an increase in government spending (Al-Akaili, 2018: 71).

In Iraq's economy, throughout this time, there have been significant transformations and changes, as evidenced by the tendency toward a market economy and the widening of the import window without qualitative and quantitative regulation of imported goods and services. Additionally, there is no restriction on the free exchange of foreign currency abroad, the government's administrative structure, the army, and the police have greatly expanded, and wages and salaries had increased as a result of the rise in oil prices. Due to everything mentioned above, state spending increased and reached (31.521.427) million dinars in 2004. As a result of the lifting of the economic embargo on Iraq and the return of oil exports to the global market, this increase occurred. In 2004, the narrow and broad money supplies increased to (10.1) and (12.3) trillion Iraqi dinars, respectively. This increase was reflected in an increase in the nominal purchasing power of money, which led to an increase in individual demand for goods and services in order to meet the demand. The total amounted to (31.9) trillion Iraqi dinars, reflecting the production system's lack of flexibility, which was reflected in an increase in imports to (34) trillion Iraqi dinars in 2004, as shown in Table (3). It should be noted that public spending kept rising in the years that followed, reaching a high level in the years of (2006) with an amount of (37,494,608) million dinars, rising significantly in the years of (2008) with an amount of (67,277,181) million dinars, and (2010) with an amount of (70,134,201) million dinars before starting to rise once more to reach its highest level in 2013 with an amount of (119,127,555) million dinars. This is due to an increase in

public revenues caused by an increase in the revenues of the most important source of oil revenues as a result of the previous period's rise in global oil prices. This was reflected in the increase in government spending that year. The broad and narrow money supply increased from (10) and (12.3) trillion Iraqi dinars, respectively, in 2004, to (37.3) and (45.4) trillion Iraqi dinars, respectively, in 2009. This increased the level of AD to rise from (31) trillion Iraqi dinars in 2004 to (109) trillion Iraqi dinars in 2009, as this increase affected mostly imports. Where imports increased from (34) trillion Iraqi dinars in 2004, to (51) trillion Iraqi dinars in 2009. As for the year (2014), public spending in Iraq decreased significantly compared to the previous year (2013), reaching (83,556,226) million dinars as a result of the sharp drop in global oil prices, which had a significant impact on the state of public spending in Iraq, which was reflected only on an increase in the narrow and broad money supply from (71.3) and (87.7) trillion Iraqi dinars, respectively, in the same year. As a result, AD and imports will rise to (24) and (75) trillion Iraqi dinars and one trillion Iraqi dinars, respectively, for the same year. Despite subsequent increases in public spending, it reached (111723523) million dinars in the year (2019), but quickly fell to (76082443) million dinars in 2020 due to a drop in global oil prices and the outbreak of the Corona pandemic and its economic ramifications. The decline in government spending in 2014 and 2015 had a significant impact on the decline in money supply, AD and imports to (65.4), (21.2) and (53.6) trillion Iraqi dinars, respectively in 2015, so it is clear from the above The extent of the impact of money supply in the narrow and broad sense on the volume of AD in the country through the public spending channel.

Table (3) developments in public spending, money supply, AD, imports and inflation rate in the IE for the period (2004-2020 (million Iraqi dinars)

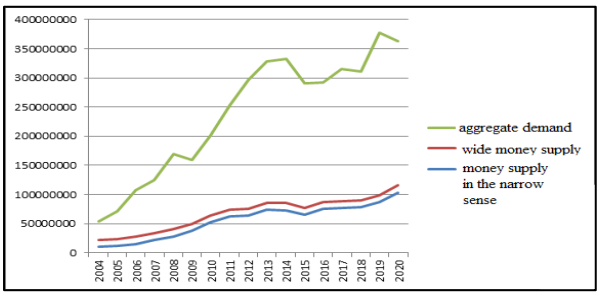
imports	AD	Money supply in the broadest sense	Money supply in the narrow sense	public expenditure	Years
34050969	31910578	12,254000	10148626	31521427	2004
45145710	47277227	14,684000	11399125	30831124	2005
36914707	79287631	21,080000	15460060	37494608	2006
31422753	91100187	26,956,076	21721167	39307836	2007
48249768	129249877	34,919,675	28189934	67277181	2008
51326145	109392615	45,437,918	37300030	55589062	2009
55232658	137587899	60,386,086	51743489	70134201	2010
60316542	178861925	72,177,951	62473929	78757665	2011
73980251	220769660	77,187,497	63738571	105139574	2012
75910914	241567976	89,512,076	73885000	119127555	2013
69948806	247891204	92,988,876	72692448	83556226	2014
53626567	212380801	84,527,272	65435435	70397515	2015
31208019	203869832.3	90,466,370	75523952	67067437	2016
35002146	225722354.2	92,857,047	76986584	75490115	2017
72647476	221064478.6	95,390,725	77828984	80873189	2018
24803820	277884869.1	103,441,131	86771000	111723523	2019
224756589	247856286.3	19,906,260	103353556	76082443	2020

Source: Prepared by the researcher based on data

1. Ministry of Planning, Central Statistical Organization, Directorate of National
2. multiple years Accounts

3. Central Bank of Iraq, Directorate General of Statistics and Research, monetary summaries.

Figure 3. Developments of money supply and AD in Iraq for the period 2004-2015



Source: From the researcher's work based on the data in Table 4

3.3 Measuring the impact of MA on AD in Iraq

To evaluate and analyze the effect of public debt refinancing mechanisms on guiding the public budget in Iraq, correlation and influence relationships are determined using the variables generated by the analytical portion of the research. To get a more precise data series, it also made use of national statistics released by the Central Bank and the Ministry of Planning and Development Cooperation (Central Statistical Organization). Then to arrive at more believable outcomes that are in line with macroeconomic theory. Considering the condition of the IE. The study data is also available on a quarterly basis and spans the years 2004 through 2020. At this point, it is necessary to describe the estimated model, as this is one of the most important stages of developing the standard model, as the independent variable is represented by MA (broad money supply) and the dependent variable is represented by AD.

1. View the static test results

We determine if the time series of the variables under discussion are static or not using the two static tests (extended Dickey Fuller and Phillips-Perron), and then we indicate if they have a unit root or not. This involves deciding whether to accept or reject the null hypothesis, figuring out the degree of time series integration, and then choosing the best model to use with it.

1.3 Viewing the Results of the Extended Dickey Fuller ADF Test

It is evident from Table (5) that the unit root test, conducted in accordance with the ADF test, revealed the presence of the unit root in the two time series of the variables, the domestic public debt at its initial level and the deficit (or surplus) of the public budget. The value of Prob, which was more than (5%) at its initial level, confirms that the null hypothesis (H0), which claims that these are not static for the two series, is accepted. When we calculate their first difference, we discover that they are still because their Prob value is less than 5%, indicating that they do not contain a unit root. By rejecting the null hypothesis and accepting the alternative, which states that the two series in question are still, we can say that they are complementary first-degree series (1).

Table (5) Unit Root Test Results by Dickey Fuller Extended Test

UNIT ROOT TEST RESULTS TABLE (ADF)			
Null Hypothesis: the variable has a unit root			
At Level			
MS2	AD	VARIABLE	With Constant
-2.4175	-1.0544	t-Statistic	
0.1412	0.7291	Prob.	
n0	n0	Significant	
-2.375	-2.7406	t-Statistic	With Constant & Trend
0.3887	0.2242	Prob.	
n0	n0	Significant	
-2.441	-0.1925	t-Statistic	Without Constant & Trend
0.0153	0.6134	Prob.	
**	n0	Significant	
At First Difference			
d(MS2)	d(AD)	VARIABLE	With Constant
-3.1759	-3.4345	t-Statistic	
0.0262	0.0129	Prob.	
**	**	Significant	
-3.1561	-3.4036	t-Statistic	With Constant & Trend
0.1029	0.0591	Prob.	
n0	*	Significant	
-3.2008	-3.3493	t-Statistic	Without Constant & Trend
0.0018	0.0011	Prob.	
***	***	Significant	

Source: Eviews10 statistical program outputs

1.4 Presentation of the results of the Phelps-Peron test pp

The results of Table (6) show that the public debt time series at its initial level accepts the null hypothesis (H0), meaning that it suffers from the presence of a unit root, confirming that its static character has not been achieved. This is supported by the value of Prob, which was greater than (5%) at the level and indicates that the time series has a unit root. While finding the static of that series by taking its first difference, i.e. rejecting the null hypothesis (H0) and accepting the alternative hypothesis (H1) stating that the time series does not contain a unit root, and this is confirmed by the value of Prob for it, if it was less than (5%). As a result, this series is classified as an integrated series of the first degree I(1).

The same table's results also showed that the null hypothesis was rejected at the level of the general budget deficit variable and that the alternative hypothesis (H1) was accepted, as the value of Prob was less than (5%), confirming that the time series is static at the level and does not contain the unit root. As a result, it is regarded as an integral of degree zero I(0). The above demonstrates a case of inconsistency in the results of the two tests (ADF and PP) for the variables: deficit or "surplus" of the public budget and domestic public debt, which leads us to rely on the results of the (PP) test because it is more accurate than the (ADF) test (obben, 1998, P 114).

Table (6): Phelps Perron's Unit Root Test Results

At Level			
MS2	AD	VARIABLE	With Constant
-3.2369	-0.1581	t-Statistic	
0.0219	0.9381	Prob.	
**	n0	Significant	
-3.2237	-1.9171	t-Statistic	With Constant & Trend
0.0882	0.6352	Prob.	
*	n0	Significant	
-3.2613	0.9121	t-Statistic	Without Constant & Trend
0.0014	0.9019	Prob.	
***	n0	Significant	

At First Difference			
	d(AD)	VARIABLE	
	-3.5787	t-Statistic	
	0.0086	Prob.	
	***	Significant	With Constant
	-3.567	t-Statistic	
	0.0401	Prob.	With Constant & Trend
	**	Significant	
	-3.4702	t-Statistic	
	0.0007	Prob.	Without Constant & Trend
	***	Significant	

Source: Eviews10 statistical program outputs

3.4 Autoregressive co-integration test for ARDL

It is possible to apply the co-integration test using the ARDL method after performing a unit root test and ensuring that the two variables remain in two different integration degrees according to the (PP) test.

It is clear from the results of Table (7) the boundary test, which shows the rejection of the null hypothesis and acceptance of the alternative hypothesis, which states that there is a long-term static relationship between the two variables in question. The highest amounting to (4.16) at the level of significance (5%). Table (7) shows the outcomes of the cash aggregates and AD model's border test in Iraq from 2004 to 2020.

F-Bounds Test	Null Hypothesis: No levels relationship			
Test Statistic	Value	Signif.	I(0)	I(1)
Asymptotic: n=1000				
F-statistic	7.739795	10%	3.02	3.51
k	1	5%	3.62	4.16
		2.5%	4.18	4.79
		1%	4.94	5.58
Prob(F-statisti)	0.00000	Adjusted R-squared		0.789288
R-squared	0.801683	Durbin-Watson stat		2.041720

Source: Eviews10 statistical program outputs

4.4 The short and long-term results of examining the link between MA and AD

This kind of test reveals the nature of the link between the variables in question, whether it is short- or long-term, as well as its kind, whether it is inverse or direct. The error correction coefficient also demonstrates how quickly the dependent variable adjusts to short-term shocks or imbalances in the interpreted variable in order to attain long-term balance.

Additionally, the modified coefficient of determination demonstrates that, when all other variables are held constant, (78%) of the changes in the dependent variable (AD) are caused by changes in the explanatory variable (MS2). Additionally, the model's standard-setting moral. Probable f-statistic value was (0.00), which is significantly less than (5%). Which enhances the results that have been reached, in addition to that the model does not suffer from the problem of autocorrelation, and this is shown by the value of D.W of (2.04) which is greater than the value of the coefficient of determination of (80%).

The value of Prob for each short-term parameter is less than 5%, indicating that all of them have a significant impact on AD. Prob measures how much the dependent variable is impacted by changes in the explanatory variable, which is represented in MA, as well as the significance of the correction factor. The error has a value of (-0.31) and a very low significance of 0.01, as expected, making it significant and negative (0.000000). This confirms the existence of a short-term

equilibrium relationship towards a long-term equilibrium relationship between the two variables in question, as the value of the error correction factor shows that approximately (31%) of the short-term imbalance in the value of AD (the dependent variable) in the previous period (t-i) was corrected in the current period (t) towards the long-term relationship at any change or shock in the MA (the explanatory variable).

The same table shows that there is a direct relationship between the variables in question, as indicated by the sign of the parameter in the long run. In addition to the statistical significance of the relationship, the value of Prob was (0.0206), which is less than (5%), so the null hypothesis is rejected and the alternative hypothesis is accepted, indicating that the two variables in question have a long-term equilibrium relationship.

Table (8): shows the results of a short-run and long-run test of the relationship between MA and AD in Iraq from 2004 to 2020.

Conditional Error Correction Regression				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5913468.	6373076.	0.000000	0.0000
AD(-1)*	-0.312395	0.065409	-4.776041	0.0000
MS2	6898832.	2911221.	5.076657	0.0266
D(AD(-1))	0.447896	0.107832	4.153630	0.0001
D(AD(-2))	0.248749	0.119694	2.078208	0.0417
Levels Equation				
Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
MS2	42590126	21547652	3.072768	0.0206
C	18929431	20294241	0.932749	0.3545

Source: Eviews10 statistical program outputs

Kranger causality test results

The Kranger causality test confirms the co-integration test results, as Table (9) shows that there is a two-way short-term causal relationship to and from MA and AD, and this is confirmed by the value of Prob, which was statistically significant because it is less than (5%), and this result is acceptable and consistent with the macroeconomic theory.

Table (9): shows the results of the Kranger causal test of MA and AD in Iraq from 2004 to 2020.

Pairwise Granger Causality Tests			
Sample: 2004Q1 2020Q4			
Lags: 1			
Null Hypothesis:	Obs	F-Statistic	Prob.
PD does not Granger Cause DB	71	6.08975	0.0036
DB does not Granger Cause PD		9.84490	0.0025

Source: Eviews10 statistical program outputs

5.4 ARDL parameters stability test results for the estimated model

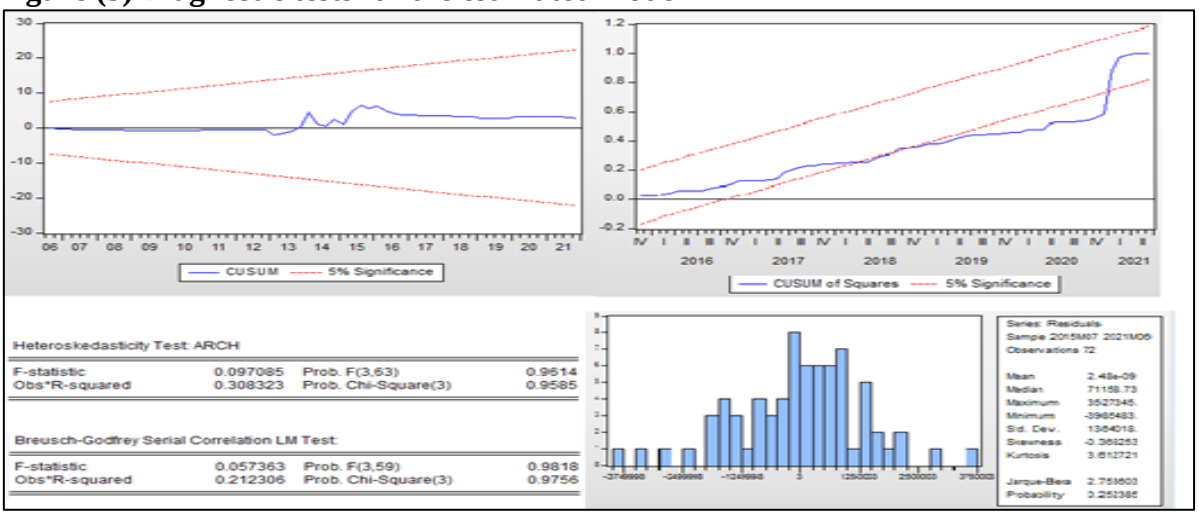
The cumulative total of the recursive residuals and the cumulative sum of the recursive residuals squared should be used to verify the structural static of the ARDL-

estimated model to ensure the validity and correctness of its outputs. Before Brown and others (Brown et al), the null hypothesis, which claims that the variables under investigation are stable, is accepted if the curve for each of the two tests is inside the framework of the critical limits at the level (5%).

Figure (3) for the two tests shows that the stability of the parameters in the ARDL model over the short and long terms is caused by the fact that the curve for the two tests sits within the critical limits and varies around zero at a meaningful level (5%).

In terms of the LM Test, the model is similarly defined by the absence of the autocorrelation problem because the Prob Chi-square(1) value is (0.97), which is greater than (5%), and thus accepts the null hypothesis that there is no autocorrelation issue between remainders. The model also has the absence of the problem of instability of heterogeneity, in terms of the Heteroskedasticity test ARCH(1), as it proved the homogeneity of the remainders because the value of Prob Chi-square (1) amounted to (0.95) which is greater than (5%). The model is defined by the absence of a problem with the normal distribution between the residuals in terms of Prob, which is (0.25), which is greater than (5%), and thus accepts the null hypothesis that states that there is no problem with the normal distribution between the residuals. The null hypothesis states that the residuals are homogeneous, and this is supported by the fact that Prob is greater than (5%).

Figure (3) Diagnostic tests for the estimated model



Source: Eviews10 statistical program outputs

1. Recommendations and conclusions

First: the conclusions

1. Acceptance of the research hypothesis that MA significantly influence AD because there is a short- and long-term relationship between them that shows AD is correlated with MA, increasing with their growth and decreasing with their decline. The quantitative approach was used to arrive at this result since the parameter of the variable had an equilibrium relationship over both the long and short terms.
2. Despite efforts to modernize and develop macroeconomic policies and move away from the central approach in the economy,

the government has not been able to reduce structural distortion and diversify the sources of national income in the economy, as measured by the percentage of non-OSs' contribution to GDP formation in a way that allows the desired goals to be met.

3. Public spending has had a direct role in the increase in the volume of MA and in a direct relationship, which contributed to the increase in the volume of AD in light of the weak flexibility of the production system, which was reflected in the increase in imports.
4. Changes in the general budget and the Central Bank budget are closely related, as is the influence on MA and AD in the economy through the foreign currency sale window.

Second: Recommendations

1. Develop economic sectors, particularly those that have extensive connections to other sectors, and increase their share of the GDP. In particular, the tourism industry should be developed as it offers lucrative returns and a variety of job opportunities that help raise people's standards of living while reducing unemployment and its exploitation. Compared to other sectors, it doesn't demand a lot of effort.
2. In order to lessen the structural distortion that the national economy experiences, the government must develop a clear strategy aimed at managing and allocating oil wealth in an optimal way in accordance with a well-researched economic vision, with a focus on the necessity of working to exchange oil revenues for the reconstruction and development of the real economy.
3. Work on expanding the private sector to draw in the growth of the nation's total demand, while also giving it the support it needs, such as financing or energy sources, and protecting local products through the use of customs duties.

References:

[1.] Dagher, Mahmoud Muhammad (2016), Challenges Facing Monetary Policy, and the Difficulties of Consistency with Fiscal Policy, Central Bank of Iraq, Research on Monetary Policy, Issue 1.

[2.] Saleh, Mazhar Muhammad (2012), the absorptive capacity of operating expenses and the flexibility of financial costs of fiscal policy. Research published on the official website of the Central Bank of Iraq.

[3.] Ministry of Planning (multiple years), Central Statistical Organization, National Accounts Directorate

[4.] Ministry of Planning (2009), Central Agency for Statistics and Information Technology Analysis of the Iraqi workforce 2003-2008.

[5.] Al-Akaili, Mortada Hadi Jundi Naji (2018), the impact of fluctuations in global crude oil prices on inflation and GDP in Iraq for the period (1988-2015) Master’s thesis submitted to the College of Administration and Economics / University of Baghdad (unpublished).

[6.] Obben, James (1998), the denamd for money in brunei, Asian Economic Journal, Issue 2 .