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Measuring the effect of the relationship between money supply and (public spending in Iraq for the period (2004_2022)

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Abstract : The importance of the research stems from determining the impact of government public spending on the money supply in Iraq, given the importance of changes in government public spending and its important role in influencing economic variables, especially the money supply, as following an expansionary financial policy in Iraq requires knowing how the government is going about financing The increase in public spending or the fiscal deficit, and from here the research began to determine the nature of the development in public government spending in Iraq for the period (2004 - 2022), the trends of this spending, and the extent of its impact on the money supply, as it is extremely important to reach the effectiveness of its impact on the components of the money supply. For this reason, the results in this area revealed the superiority of current public spending in its contribution at the expense of government investment spending in influencing the broad money supply, in addition to its being quantitatively limited to that influence and in a direct relationship with the money supply, whether broad or narrow, due to the correlation of the investment spending variable in Iraq. With the problems of its construction and its connection to the great negligence and reluctance of financial policy in this aspect, in addition to the findings of the research in the quantitative aspect that there is a statistically significant relationship to the effect of current public spending without the positive effect of investment spending on the money supply, whether narrow or broad, in Iraq during the period (2004). -2022), and the research started from the hypothesis that public spending policy has positive effects on the money supply in the countries sampled for the research during the period (2004-2022), and the inductive approach was used, and the impact of the relationship between the money supply and public spending in Iraq was measured and analyzed using a method of Econometric analysis. The results showed the presence of cointegration between the variables of the study (the presence of two vectors of cointegration between the money supply in the broad sense and public spending for the period 2004-2020) in Iraq, as the cointegration test was used according to the method of Johannes Jusselus, which consists of two tests, which are the test trace and the value test. Great eigenvalue test Maximum. Changes in the factors affecting the money supply play a role, whether positive or negative, which is reflected in the country's financial and monetary capacity. Therefore, priority must be given to monetary policy through the central bank to control the size of the money supply, in addition to the necessity of coordination between the factors contributing to changing the broad money supply. (M2), especially expansionary and contractionary ones.

Introduction:

The effects of public spending are numerous in various political, social, and economic aspects in all countries, both developed and developing ones alike. Public spending has the ability to contribute to bringing about the required changes in the economy if it is used in a way that benefits society and the economy. Therefore, fiscal policy takes the lead through the public spending tool. Controversy in many countries in light of the economic challenges facing these countries. Public spending is often viewed as one of the most important tools for achieving a certain level of economic stability and growth, whether in the long or short term. An increase in public spending would contribute to changing the supply of Cash as an important factor in the country's national economy because of its effective impact on increasing economic recovery due to its positive effects on many different economic indicators, as following an expansionary financial policy led to an increase in the money supply, while following a contractionary

financial policy led to a negative impact towards a decrease in the money supply, and this The relationship is the focus of attention of many researchers at the theoretical and applied levels and an area for trying to reconcile the methodological vision with the reality of the fiscal and monetary policies, given the importance that these two policies occupy in developed and developing economies alike, as well as the overlap and connection between these two policies, represented by the important role they play. Both the financial and monetary authorities, and there is no doubt that public spending has a direct impact on the level of total demand in order to maintain the general price level. In Iraq, the Iraqi government seeks to stimulate the economy by following spending programs prepared to increase production and income, which would work to increase effective demand through... The multiplier effect of public spending, and perhaps one of the most important factors influencing the money supply, especially public spending and its relationship to government bonds and interest rates, are changes in the state's financial policy, which includes changes in public spending in Iraq, as following an expansionary financial policy in Iraq requires knowing how the government is proceeding. In financing the increase in spending or the fiscal deficit, whether by selling bonds, issuing cash, or selling government securities to the central bank, and therefore the monetary base will increase and thus the money supply will increase, and from here the research began to determine the nature of the development in public spending in Iraq for the period (2004 - 2022) and the trends of this spending and the extent of its impact on the money supply Research Methodology

research importance :

The importance of research in determining the impact of public spending on the money supply in Iraq stems from the importance of changes in public spending and their important role in influencing economic variables, which are important sources of changes in the money supply and the factors affecting it. Therefore, the topic is extremely important by determining the effectiveness of the impact These expenditures are among the components of the money supply in Iraq, and for this reason the research included a standard study to show the extent of the impact of changes in public spending on the money supply in Iraq during the period(2004-2022)

Research problem :

The problem of the research lies in explaining the size of the effects that changes in public spending leave on the money supply.

Through this, the researcher attempts to ask the following questions:

-1 How does public spending affect the money supply?

2- To what extent does public spending contribute to the growth of the money supply, whether it is wide (M2) or narrow (M1)?

Research objective:

Based on the above clarification and description of the problem for which appropriate treatments are to be developed, the research It seeks to achieve the following goals:

1- Shedding light on the most important concepts related to public spending and money supply and the schools of thought that were exposed to them.

2- Explaining the impact of changes in public spending and its development trends on the money supply in Iraq for the period (2004-2022)

3- Examining the effectiveness of changes in public spending of various types and the degree of their impact on the money supply, both through estimating and testing some statistical relationships quantitatively.

Research hypothesis:

Depending on the research problem, it is possible to formulate the following hypothesis:

The public spending policy has positive effects on the money supply in Iraq during the period (2004-2022)

Research Methodology:

The descriptive approach was used to review the theoretical rooting, and the analytical approach was used to analyze Statistical data, and the researcher also used the standard method to measure and analyze the nature of the relationship between... The variables studied in Iraq.

search limits:

1_Spatial borders: Iraq

2 - Temporal limits: for the period (2004-2022) as it is a period that has particularity in highlighting new studies and research, as well as its distinction,

especially Iraq's adoption of new monetary and financial policies after the year 2004.

Research structure :

In order to verify the validity or incorrectness of the research hypotheses and to reach its main objective accordingly According to the adopted methodology, the research included three chapters, in addition to the introduction and conclusion .The first chapter was devoted to studying the theoretical framework of public spending and money supply and the nature of the relationship economic between the. The second chapter analyzes the reality of public spending and money supply in Iraq, while the third chapter is devoted to Measuring and analyzing the impact of the relationship between the money supply and the general agreement in Iraq for the period (2004-2022).

Chapter one : Money supply and public spending (theoretical concepts).

The theoretical framework of public spending and money supply and the nature of the economic relationship between them:

The government seeks, through public spending, to achieve various goals. Including economic, political and economic, especially towards developing and rehabilitating public services in order to achieve well-being for society. Accordingly, its effects have been multiple, whether directly or indirectly, on macroeconomic variables, in addition to its role in influencing monetary policy, especially the money supply. For this reason, schools have addressed The different economic variables of exposure to the variables of public spending and money supply and the effectiveness of government spending in influencing the money supply.

The first section: Presentation of criticism and theoretical concepts

The first requirement. Money supply concept and characteristics:

Concept: A cash offer means anything that is generally accepted as a means of repaying a debt. The French economist Games Emile defined it as every commodity that allows, by law or custom, for every debtor or buyer to pay for a commodity or pay off a debt without rejecting it or discussing its value by the creditor or seller (Al-Dulaimi: 1990,24). Money is also defined as the coin or paper currency that is used in purchasing cases. And sell it (Al-Sayyid Ali, Al-Issa:2004 ,29) .Money is also considered a measure of value or a tool for exchange. Societies now retain certain sizes of it. This is called the money supply (Al-Wazani , Al-Rifai: 2006,284)and is also known as the total stock. Money, coins, banknotes, and bank deposits in circulation held by the public at any given time (j. Singh : 2019, 599).

Second: Characteristics of money:

Therefore, it can be said that money came as a result of the difficulties that faced the barter system, and it has characteristics that are different from those that characterize goods in the barter system, and among these characteristics are:

1.Durability: It means keeping it for a period of time without being damaged or losing its purchasing power (Al-Ghalibi, Saad Al-Araji: 2016,23).

2 Ease of carrying Divisibility: That is, the thing that is carried as money must be appropriate in weight and size so that it is easy to carry when performing various functions (Al-Dulaimi: 1990,41). It is also of high value compared to its small size and easy to carry (Al-Shammari:1987,37). It is preferable that it be light in weight so that individuals can carry any quantity of it to buy goods of large values, meaning that it is characterized by ease of carrying.

3. General acceptance status: Money must have a general acceptance status so that the individual and the entire society are willing to accept money that is used as a medium or means of exchange operations or debt repayment, etc. (R.kent: 1961,3).

4.Homogeneity of units: meaning that the used money is divisible into appropriate units that facilitate small transactions.

5. Difficult damage: meaning that the thing used as money is relatively durable, meaning it is not easily damaged. This is because money circulates in many hands, so it must endure circulation (Muhammad Yuns, et al :2000 ,213).

Firstly. The second requirement: Public spending (concept and elements).

1. The concept of public expense:

When carrying out its expenditures, the state uses cash amounts to achieve public spending purposes. Thus, public expense is a monetary amount implemented by a public person with the aim of achieving a public (collective) benefit (Al-Janabi:2012 ,17). In other words, public expenditure is defined as (an amount of money spent by the state for the purpose of achieving public benefit. Public expenditure includes three elements that represent its distinguishing characteristics from others, which are as follows (Thneibat:2011,56).

1**. Firstly. General expense is a monetary amount**

The state or other public persons spend in order to satisfy public conditions. It spends first in order to obtain the goods and services necessary to run public facilities. In doing so, it spends to purchase the necessary productive funds to carry out the investment projects it undertakes, and it spends lastly to grant Aid, social benefits, etc. All of these expenses and others must take the monetary form in order to be called public expenses (Younis:2004 , 20).

2. **secondly . Public expenses are 2.issued by the state or one of its organizations**

Public expenditures have the general character of those undertaken by public legal persons, which are the state, local bodies, and public institutions. In addition, they include the expenses of public projects, and therefore the amounts spent by private legal entities are not considered public expenses, even if It aimed to achieve public benefit. If a person donates sums to build a hospital, for example, this is not considered a public expenditure, but rather falls within the framework of private expenditure (Thneibat:2003 ,63) .

3. **Third. The goal of public expenditure is to achieve public benefit:**

Public expenditures mainly aim to satisfy public conditions and achieve public benefit. This means that public expenditures are not considered those that do not satisfy a general condition, and do not achieve public benefit for individuals. Therefore, it can be justified that since individuals are equal in bearing public burdens (taxes), they are equal in Utilization of expenses Public expenditures are for the state in all aspects, meaning that public expenditures are for paying public affairs and not for a private interest(Al-Janabi: 2012,9). **The third requirement: The nature of the relationship between public spending and the money supply according to the logic of economic theory:**

The relationship between public spending and money supply depends on several things, the most important of which are the following:

A- The extent of development and diversification of the country's economy.

B-Sources of public revenues.

An economy that depends on internal revenue sources such as tax revenues, customs tariffs, and state property revenues (of various types), public spending will not have a clear or negligible impact on the money supply because the revenues collected will be respent on government spending, and the impact will be limited, that is, only In the time gap between collecting revenues and spending them, while in renter economies that depend on external sources of revenues, public spending plays an essential role. It affects the money supply, and any expansion in spending will lead to an increase in the money supply, which may cause inflationary effects, and since public spending is outside the control of the central bank and may affect the achievement of its goals, this makes the central bank take sterilizing measures to absorb the negative impact of spending and absorb liquidity. The surplus in the economy to reduce inflation, meaning that there is a direct relationship between public spending and the money supply(Khudair,Taan: 2018,190) In this regard, public spending plays an important role in employing resources with great efficiency, and its great importance becomes clear in developing countries, because the private sector does not have the ability to enter into Large investments in the field of services such as electricity, water, etc., as a large segment of society depends on its well-being, in addition to its role in building infrastructure projects and public services for the country. The economies of developing countries depend on oil revenues, so its importance is increasing. Public spending is because the government spends oil revenues in various aspects of

spending, and the reason for this is Because oil prices are not stable due to their fluctuation from time to time, as well as the lack of an advanced tax system in most developing countries, including Iraq, therefore these revenues are subject to significant fluctuation, which sometimes makes the government forced to spend more than its revenues(Al-Juhani: 2006,82-83).thus affecting the size of Public spending on the money supply, with regard to the issuance of currency, as it affects the size of the money supply through currency issuance operations to finance the size of public expenditures (Al-Ali: 2002,59). Public revenues are the main source of financing government expenditures within the framework of the state's general budget To a key factor, not only the local revenue that is exporter and non-tax revenues, but depend on the level of external revenues, which are also dependent on the extent of export and the increase in the volume of currencies The foreign domestic and the direction of the basic land for legal release by the Central Bank is the only monk for the issuance and delivery to the government to finance expansion in its public expenditure (Al-Sayyid Ali: 1984,145). Some factors also contribute to alleviating the impact of the level of public expenditure on the presentation, public spending is not fully directed to purchase locally produced goods and services, which is allocated to import foreign goods, whether capital or consumer, as well as International Capital Flow response to changes in international interest rates on part, in addition to exchange rate changes (Paul, Williamd: 2001, 674). and the level of public expenditure is taking the form of access to State employees in salaries and wages. The entry recipients are spending part of this entry and savings of the remaining part of financial and banking institutions in an ongoing deposit, constant or deposit deposits and an attack that increases cash precautions for commercial banks, which enhances the ability of commercial banks to grant loans, The expansion of ongoing deposits will result in an increase of the total deposits, which are with legal cash and a greater mash, which leads to an increase in cash presentation in its narrow and scale(Al-Sari, Al-Talabi:3013,14-13). When the sources of public spending, the government is unable to issue new money to finance the state budget and move production activities.

Chapter Two: Analysis of developments in money supply and public spending in Iraq for the period (2004-2022).

The second topic first: Analysis of the reality of cash and public spending in Iraq for duration (2004-2022) First Request:

About the Iraqi economy has suffered several decades of imbalance and lagging and the lack of social, economic and political failure Iraqi wars , especially the Iranian-Iranian war and the first Gulf War, resulted in massive destruction and destruction in general infrastructure and production structures, especially reflected the decline in the growing and sectoral economic development rates as well as the loss of the principle of economic efficiency in The scope of allocation of economic resources and the reason for this is inclusential and centralized economic policies used in the economic and social development process under the economic sanctions caused by international sanctions to add to mass destruction after the occupation of Iraq to disappear for most of the industrial interesting facilities Agricultural and service (Al-Halafi: 2008,42). Political reality in Iraq has fallen by prominent signs by declining the capacity of the Iraqi economy to all its indications. Cascading wars, occupation, internal conflicts, and looting and looting the Iraqi economy, which led to most of its energies and materials And humanity (Economic and Social Commission for Western Asia: 2005 ,5). As well as the size of the large debt, which forced Iraq to face difficult economic missions with exceptional sizes, it was difficult to imagine how to redefine the economic future under the security and political reality they had passed by limited control economic resources, so it It can be said that the Iraqi economy is like a war or post-war economy where he suffered a semi-infrastructure Collapsed and destroyed due to the wrong policies that were practiced in managing the economy and the sanctions, wars, occupation and plunder that followed. Iraq possesses all the elements of progress that qualify it to be one of the economically prosperous countries. It is rich in natural and human resources and wealth, in addition to its distinguished geographical location and the relative abundance of water. Which gives it great importance not only at the level of Arab countries, but also at the level of the world(Khadr: 2008,20).

The second requirement: Analysis of the reality of the money supply in Iraq for the period 2004-2022

The period (2004 - 2022) witnessed fundamental changes in the monetary field. The Central Bank of Iraq was granted independence in accordance with Law No. 56 of 2004. The Central Bank also succeeded in

taking a set of measures to control the money supply, including replacing the old currency with a new national currency with good specifications that prevent it from being counterfeited. This helped to strengthen individuals' confidence in it, as well as rebuilding the Central Bank of Iraq's foreign currency reserves, which represent a cover for the local currency and a source of stability for the Central Bank of Iraq. This led to the transition to a freer economy and less interference from the government side (Al-Shabibi: 2007,17). Through Table (1), when analyzing developments in the money supply for the period from 2004-2022, we notice that the narrow money supply M1 began to rise, reaching (10,148.6) billion dinars in 2004 until it reached (11,399.1) billion dinars in 2005, corresponding to the broad money supply, M2. It rose from (12254.0) to (14683.6) billion dinars, after which it continued to gradually increase until 2013 with an annual growth rate of (16%) to show Money M1 and the money supply M2 also increased for the same year, with a growth rate of (16.2%) due to the movement of money between individuals and commercial banks. However, in 2014, the annual growth rate of money supply M1 decreased as it reached (1.5%). Oil prices also declined and the security
situation deteriorated during The aforementioned year.

Table (1) Developments in the money supply M1 and M2 in Iraq for the period (2004-2022) billion dinar

The year	Narrow money supply (M1)	Growth rate M1%	Broad money supply (M2)	Growth rate M2%
2004	10148.6	---	12254.0	---
2005	11399.1	12.3	14683.6	19.8
2006	15460.1	35.6	21080.2	43.5
2007	21721.2	40.5	87679.5	28
2008	28189.9	29.8	34919.7	-60.1
2009	37300.0	32.3	45437.9	30
2010	51743.5	38.1	60386.1	33
2011	62473.9	21.2	72177.9	19.2
2012	63735.9	8.2	75466.4	4.5
2013	73830.9	16	87679.5	16.2
2014	72692.4	-1.5	90727.8	3.5
2015	65435.4	-9.9	82595.5	-10
2016	70709.3	8.1	88067.2	8.2
2017	71161.6	1.9	89441.3	1.6
2018	77828.9	9.4	95390.7	6.7
2019	86771.0	11.0	103441.0	8.4
2020	95884.0	10.5	112571.2	8.8
2021	119944.0	25.0	139886.0	24.2
2022	146488.0	22.1	168291.4	20.3
Average	63940.0	20.1	73114.57	17.2

Source: Prepared by the researcher based on: the Central Bank of Iraq, Departmen of Statistics and Research, annual economic reports for the period (2004-2022)

Growth rats were calculated by the researcher according to the following formula:r = $\frac{y2-y1}{y1} * 100$

In 2014 and 2015, the M1 money supply decreased to (-1.5%) and (-9.98%), respectively. The M2 money supply also decreased in 2015 by (-10%). The reason for the decrease in the M2 money supply is the result of a number of bank branches leaving banking service due to... The terrorist gangs (ISIS) seized and plundered it. In 2016, the M1 money supply increased by (8.1%), and the M2 money supply increased by (8.2%) due to the increase in the narrow money supply and other deposits. The money supply M1 and M2 continued to grow during the period (2017-2020), as the money supply in the narrow sense M1 witnessed an increase by (1.9%, 9.4%, 11.5%, 10.5%), respectively, and this is due to the growth in current deposits, while the money supply in the broad sense M2 recorded It also grew by (1.6%, 6.7%, 8.4%, 8.8%) respectively. The reason for the increase in the money supply M2 was the growth of the two components of the narrow money supply and other deposits. The increase continued at a growth rate of (25.0%) for the money supply M1 and was offset by an increase in M2 by (24.2%) in 2021 from (119944.0) billion dinars until it reached (146488.0) dinars. This is mainly due to the growth of the currency outside banks and current deposits. However, in 2022, the money supply in the narrow sense M1 recorded an increase of (22.1%). This was offset by a decrease in the money supply M2 by (20.3%) from (139886.0) billion dinars to (168291.4) billion dinars. The changes in the narrow and broad money supply can be explained during the research period.

The third requirement: Analysis of the reality of public spending in Iraq for the period (2004-2022)

After lifting the economic sanctions imposed on Iraq, which the Iraqi economy has suffered from for more than a decade, it is necessary to increase public expenditures in an attempt to compensate for the damage caused to the infrastructure, which necessitated moving towards stimulating economic growth and restoring what was destroyed by the wars. As public expenditures in Iraq are closely linked to revenues from oil exports, the increase in these revenues reflected positively on the increase in the volume of public expenditures, through the return of these exports to the oil market significantly after 2003, as Iraq witnessed many economic and political transformations during that stage. The financial policy, like the rest of the economic policies, has undergone a set of updates in its legal aspect in a way that is compatible with the current economic situation, which was represented by the issuance of the Financial Management and Public Debt Law No. 95 of 2004, which included the sale of government securities in accordance with market mechanisms and the central bank acting as the financial agent for The government is responsible for managing short-term treasury transfers, instead of borrowing by agreement, which takes the form of obligation and with a known interest in advance. The application of this strategy is likely to lead to improving growth opportunities and economic stability by controlling inflation rates, for the purpose of containing cash liquidity, controlling its levels, and utilizing its flows. In favor of filling the deficit in the general budget, the spending policy after 2003 was characterized by expansionism. This is due to the large increase in oil revenues following the end of economic sanctions that coincided with the rise in oil prices, at a time when there is an eye toward expansion in public spending as it is the mainstay of targeted economic reform policies. To restructure the Iraqi economy. From Table (2), it is clear that total public expenditures increased significantly, as total public expenditures reached (31,521) billion dinars in 2004, and continued to rise to reach (59,403) billion dinars in 2008, with a growth rate of (52.19%). This came as a result of raising Economic sanctions, the opening of the Iraqi economy to the countries of the world, and the increase in exports of crude oil, in addition to the rise in oil prices in the oil market, as the volume of current expenditures reached (39,087) billion dinars, with a contribution rate of (65.79%), while the volume of investment expenditures reached. 20,316) billion dinars, with a contribution rate of (34.20%) in 2008.

Table (2) Development of public expenditures in Iraq for the period (2004-2022) billion dinars

The year	Current expenses (1)	Investment expenses (2)	General (3) expenditure	Overhead growth rate (4) %	Ration of contribution of current expenditures to general expenditures (5) %	The ratio of contribution of investment expenditures to public expenditure (6) %
2004	27597	3924	31521	--	87.55	12.44
2005	22472	3904	26376	-16.32	85.19	14.80
2006	32598	6209	38807	47.12	84.00	15.99
2007	29820	9211	39031	0.57	76.40	23.59
2008	39087	20316	59403	52.19	65.79	34.20
2009	45941	9649	55590	-6.41	82.64	17.35
2010	54581	15553	70134	26.16	77.82	22.17
2011	60926	17832	78758	12.29	77.35	22.64
2012	75789	29351	105140	33.49	72.08	27.91
2013	78747	40381	119128	13.30	66.10	33.89
2014	76742	35450	112192	-5.82	68.40	31.59
2015	51833	18565	70398	-37.25	73.62	26.37
2016	51173	15894	67067	-4.73	76.30	23.69
2017	59026	16465	75491	12.56	87.18	21.81
2018	67053	13820	80873	9.69	82.91	17.08
2019	87301	24423	111724	38.14	78.13	21.86
2020	72874	3209	76083	-31.90	95.78	29.68
2021	89526	13322	102848	35.17	87.04	12.95
2022	104941	12018	116959	13.72	89.72	10.27

ource: Prepared by the researcher based on: the Central Bank of Iraq, Departmen of Statistics and Research, annual economic reports for the period (2004-2022).

Growth rats were calculated by the researcher according to the following formula:$r = \frac{y2-y1}{y1} * 100$.

In 2009, public expenditures decreased to (55,590) billion dinars, with a negative growth rate of (6.41%). This is due to the decline in public revenues due to the decline in oil prices in global oil markets following the repercussions of the global financial crisis in 2008, which led to An increase in current expenditures to (45941) billion dollars, with a contribution rate of (82.64%), while offset by a decrease in investment expenditures as they amounted to (9649) billion dinars, with a contribution rate of (17.35%). It is also noted that the total public expenditures for the period (2010) (2013) took an upward curve, reaching (70134-78758-105140-119128) billion dinars, respectively, with growth rates reaching (26.16%, 12.29%, 33.49%, 13.30%) respectively, in addition to that, public spending, both its current parts, increased. And investment for the period (2010-2013), as current expenditures amounted to (78,747)

billion dinars in 2013, with a contribution rate of (66.10%) of the gross domestic product, while investment expenditures amounted to (40,381) billion dinars, with a contribution rate of (33.89%) in 2013. This is due to the improvement in the state's public revenues, while total public expenditures returned to decline during the period (2014-2017) to reach (112192-70398-67067-57491) billion dinars, respectively, with growth rates of (5.82%, 37.25%, 4.73%). %, 12.56%), while the contribution percentages for current expenditures reached (68.40%, 73.62%, 76.30%, 87.18%), respectively, of the gross domestic product, while the contribution percentages for investment amounted to (31.59%, 26.37%, 23.69%, 21.81%). %) respectively of the domestic product, as a result of the decline in crude oil prices in global oil markets, which led to a significant decline in the volume of revenues from crude oil and thus a decrease in the volume of public revenues, which are the main financier of public expenditures. After that, total public expenditures rose again during the years (2018 and 2019), reaching (111,724,80873) billion dinars, respectively, with the contribution of current expenditures reaching (82.91%, 78.13%), while the contribution of investment expenditures reached (17.08%, 21.86%). respectively. After that, total public expenditures recorded a decrease in 2020 to reach (76083) billion dinars, and with a negative growth rate of (31.90%), current expenditures decreased to (72874) billion dinars, with a contribution rate of (95.78%), while investment expenditures reached (3209) One billion dinars, with a contribution rate of (29.68%), due to the repercussions of the (Covid 19) pandemic and the decline in crude oil prices due to that crisis, and it rose again during the years (2021-2022) to reach (116959,102850) billion dinars in 2021 respectively, as the volume of expenditures increased. Current expenses reached (89526) billion dinars, while investment expenditures increased to reach (13322) billion dinars in 2021, and in 2022 current expenditures recorded an increase to reach (104941) billion dinars, while investment expenditures recorded a slight decrease from the previous year to reach (12018) One billion dinars, with growth rates of (35.17%) and (13.72%), and the contribution of current expenditures reached (87.04%, 89.72%) for the years (2021-2022), while the contribution of investment expenditures reached (12.95%, 10.27%) for the years (2021- 2022), as a result of the rise in crude oil prices due to the repercussions of the Russian-Ukrainian war, which led to a rise in public revenues and then a rise in public expenditures for the country to cover administrative economic requirements, especially after global events and the rise in the general level of prices.

The third section: Measuring and analyzing the relationship between money supply and public spending in Iraq for the period (2004-2022)

This study aims to know the relationship between the broad money supply (BMS) and total public expenditures (TPE), as quarterly data were used that extended for the period 2004:1 – 2022:4, in Iraq. The data was obtained from the Central Bank of Iraq, the General Directorate of Statistics and Research, as well as from the Iraqi Ministry of Planning – the Central Bureau of Statistics.

The function can be described as follows:

Where:

the natural logarithm of the money supply in the broad sense.

The natural logarithm of total overhead

The following steps were used:

A. Testing the stability of the variables used in the study and determining their degree of integration using one of the unit root tests (ADF, P-P or KPSS).

B. Determine the optimal lag period using an unconstrained autoregressive (VAR) model using the Akaike (AIC) or Schwartz (SC) test or the Hannen-Cowan (HQ) criterion and choosing the lag period that has the lowest value for these criteria.

C. Johansen-Gosselus test to determine whether or not there is cointegration between the two variables.

D. Estimating the short- and long-run model parameters, using VAR in the event that there is a cointegration between the broad money supply and total public expenditures, and VECM in the event that there is a cointegration between those variables.

E. Granger causality test to determine the direction of causality between study variables in the short term.

F. Ensure that the model is free of serial correlation by testing (Berusvh Godfrey Serial Correlation LM Test) and homogeneity.

G. Description of data

It is clear from Table (3) some statistical characteristics of the study variables in Iraq, such as the arithmetic mean, median, and standard deviation during the study period 2004-2022, as the highest value of public spending in Iraq during the study period was 1 billion Iraqi dinars, 119,128, and 168,291 billion Iraqi dinars in relation to the broad money supply. While the average public spending was 75,659.11 billion Iraqi dinars, and the average broad money supply was 78,009.31 billion Iraqi dinars, the lowest value for public spending is 26,376 billion Iraqi dinars, and 12,254 billion Iraqi dinars for the money supply in the broad sense.

Table (3): Description of the study variables in Iraq

TPE BMS

	TPE	BMS
Mean	75659.11	78009.31
Median	75491	87679.5
Maximum	119128	168291.4
Minimum	26376	12254
Std. Dev.	29581.96	40529.93

Source: Research's work based on program results (Eviews: 12)

8.Unit Root Test:

The Extended Dickey-Fuller ADF, Phelps-Perron P-P, and KPSS tests were used to test whether the study variables (public spending and money supply in the broad sense) in Iraq are stable at the level or by the first or second difference. Through these tests, the degree of integration of these variables is also determined.

Table (4) shows the results of testing the stability of the study variables using the ADF, PP, and KPSS tests at level and first differences at level, trend, categorical, without categorical, and trend at a significance level (1%, 5%, and 10%).

Table (4): Results of testing the stability of variables in Iraq using the ADF, P-P and KPSS tests.

			Broad Money Supply (BMS)	Total Public Expenditure (TPE)
Augmented Dickey-Fuller (ADF) Test	Level	Intercept	-2.975** (0.043)	-2.558 (0.107)
		Trend and Intercept	-5.057*** (0.000)	-2.506 (0.324)
		None		-1.493 (0.966)
	1st difference	Intercept		-3.523** (0.010)
		Trend and Intercept		-3.695** (0.029)
		None		-3.123*** (0.002)
Phillips-Perron (PP) Test	Level	Intercept	-1.981 (0.294)	-1.265 (0.642)
		Trend and Intercept	-2.741 (0.224)	-1.899 (0.645)
		None	-1.384 (0.957)	-1.007 (0.916)
	1st difference	Intercept	-5.5*** (0.000)	-5.075*** (0.000)
		Trend and Intercept	-5.505*** (0.000)	-5.034*** (0.000)
		None	-5.113*** (0.000)	-4.993*** (0.000)
Kwiatkowski – Phillips – Schmidt-Shin (KPSS)	Level	Intercept	0.979	0.806
		Trend and Intercept	0.277	0.224
		None	-----	----

	1st difference	Intercept	0.089***	0.071***
		Trend and Intercept	0.041***	0.066***
		None	----	-----
Decision			I(1)	I(1)
respectively %1 and %5 ،%10 It indicates that there are significant level *** and ** and * : Note				

Source: Research's work based on program results (Views: 12)

Table (4) shows the results of the stability test using the ADF, PP, and KPSS test, where the results showed that the variables (public spending and money supply in the broad sense) in Iraq contain a unit root (unstable) at the level of significance at 1%, 5% and 10%. This means that it is not possible to reject the null hypothesis, which states that the time series is unstable (the presence of a unit root), since 0.05 ≤ p-value. However, these variables became stable after taking their first difference, whether in the presence of a categorical, or in the presence of a categorical and general trend, or without, and in all ADF tests. ,PP,KPSS, that is, these variables are integrated of the first order, I(1).

Determine the optimal lag period :

The VECM model is based on estimating the autoregressive vector of the study variables based on certain lag periods, as the dependent variable and independent variables become explained by lagging variables at certain time periods. Therefore, the optimal deceleration periods must be determined, which depend on the lowest value of the Akaki AIC criterion, the Schwarz SC criterion, or the Hannan-Quinn criterion, in order to estimate the VECM model. Table (5) shows the number of optimal time deceleration periods.

Table (5): Determining the number of time lag periods for the model

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-56.7162	NA	0.018801	1.701919	1.766676	1.727611
1	112.4039	323.5341	0.000157	-3.08417	-2.8899	-3.007097
2	134.3994	40.80322	9.32E-05	-3.60578	-3.282	-3.477323
3	136.453	3.690664	9.87E-05	-3.54936	-3.09607	-3.369525
4	136.8478	0.686575	0.00011	-3.44486	-2.86205	-3.213644
5	162.009	42.29995	5.96E-05	-4.05823	-3.34591	-3.775629
6	172.8396	17.58004*	4.90e-05*	-4.256219*	-3.414382*	-3.922234*
7	173.443	0.944453	5.44E-05	-4.15777	-3.18642	-3.7724

* indicates lag order selected by the criterion Source: Research's work based on program results (Views: 12)

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

It is clear from Table (5) that the appropriate slowdown period is optimal based on the criteria of SC, HQ, and AIC It is 6 years, as the value of these criteria was the lowest at that period.

1. Co-integration :

The results of the ADF, PP, and KPSS tests showed the stability of the study variables (money supply in the broad sense and public spending) in Iraq at the first difference, that is, they are integrated of the first degree, which means the possibility of there being joint integration between these variables. Cointegration shows the long-term equilibrium relationship between the money supply in the broad sense and public spending in Iraq for the period 2004-2020, where the cointegration test was used using the method of Johannes Joselus, which consists of two tests, namely the test

trace, and the eigenvalue test Maximum, although the Engel method The two-step Kranker method is suitable for finding cointegration in a model consisting of two variables, but using the Johansen-Josselus method is better even in the case of only two variables because it allows for the mutual influence between the two variables, which is supposed to not exist in the Engel-Kranker method. Table (6) shows the results of the integration test. Between model variables using Johansen-Geslos.

Table (6): Results of the cointegration test between the two variables using the Johansen and Juselius method

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.234062	25.65468	15.49471	0.0011
At most 1 *	0.081286	6.188971	3.841466	0.0129
Trace test indicates 2 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.234062	19.46571	14.2646	0.0069
At most 1 *	0.081286	6.188971	3.841466	0.0129

Source: Research's work based on program results (Views: 12)

It is noted from Table (6) that there are two vectors of cointegration between the money supply in the broad sense and public spending in Iraq for the period 2004-2020 according to the two tests (the effect test and the maximum value test), where the null hypothesis, which states that there is at least one vector, was rejected at a significance level of 1. %, which means that there is a long-term equilibrium relationship between the money supply in the broad sense and public spending in Iraq.

5. VECM. Error correction model:

After ensuring that the study variables (money supply in the broad sense and public spending) are stable at the first difference, it was then verified that there is cointegration between these variables. Therefore, an error correction model is used that includes the possibility of testing the long-term relationship in the long and short terms, and Table (7) shows the results of the error correction model for the study variables.

Table (7): Estimation of the error correction vector and coefficients in the long and short run

Variables	ΔLnBMS	ΔLnTPE
CointEq1	0.006679 (0.7655)	-0.088432 (0.0097)
C(2)	0.515837 (0.0005)	0.555331 (0.0001)
C(3)	0.100598 (0.5132)	0.210928 (0.1445)
C(4)	0.03865 (0.752)	0.074479 (0.5076)
C(5)	-0.663275 (0.0000)	-0.63993)0.0000(
C(6)	0.296377 (0.054)	0.341242 (0.0179)
C(7)	-0.045439 (0.7467)	0.082449 (0.5078)
C(8)	0.098658 (0.7031)	-0.013052 (0.852)
C(9)	0.05414 (0.8506)	-0.021847 (0.7752)

C(10)	0.045039 (0.8415)	-0.0095 (0.876)
C(11)	0.250506 (0.2704)	0.063153 (0.3018)
C(12)	-0.088549 (0.7536)	-0.046754 (0.5355)
C(13)	-0.09429 (0.7057)	-0.033466 (0.6332)
C(14)	0.020777 (0.2068)	0.010884 (0.1846)

Source: Research's work based on program results (Views: 12)

It is clear from Table (7) that the error correction factor (ECT) is insignificant and non-negative, and therefore, there is no long-term equilibrium relationship from total public expenditures to the broad money supply in Iraq. From this, it can be concluded that there is no long-term causal relationship from total public expenditures to the money supply. In the broad sense, the positive sign also indicates that the imbalances in the equilibrium value of the natural logarithm of the broad money supply increase every period of time, and these imbalances in the value of this variable cannot be corrected, and the money supply, in the broad sense, does not come close to the equilibrium position in the long run. While there is a causal relationship in the long run from the broad money supply to total public expenditures, the error correction parameter was significant and negative (-0.088), which means that the error correction limit corrects the imbalance in the system, as the speed of adjusting the imbalances is 8.8%. This means that the occurrence of any shock in the dependent variable during period t-1 will be adjusted by 8.8% during period t, meaning that the added value of public spending will need 11 years to return to its equilibrium level after the occurrence of any random shock in the model.

It is also clear from Table (7) that the coefficient of determination for the model is 59%, which indicates the good fit of the model and its explanatory ability.

The model and its explanatory power.

6. Short-term causality test:

Engle and Granger (1987) showed that using the traditional Granger causality test may be misleading if there is cointegration between the variables. Therefore, if the time series used are stable by the first difference and there is cointegration between them, the Granger causality test must be used, including a lag error correction vector for one period of time. Table (8) shows the results of the short-term causality test using the Granger test based on the error correction model.

Table (8): Granger causality test results for variables in Iraq in the short term

Variables	$\sum \Delta Ln$BMS	$\sum \Delta Ln$TPE	Null hypothesis
ΔLnBMS		3.436 (0.753)	TPE does not Granger Cause BMS
ΔLnTPE	1.616 (0.951)		BMS does not Granger Cause TPE
the Values between ( ) indicate P-Value			

Source: Research's work based on program results (Views: 12)

It is clear from Table (8) that there is no causal relationship between total public expenditures and the broad money supply in Iraq in the short term according to the Granger test.

The lack of a causal relationship from public spending to the broad money supply in both long terms.R^2

7. Model stability test:

Stability of the VECM vector model: It is clear from Figure (9) the stability of the VECM vector model, as all coefficients are smaller than one and all roots lie within the unit circle, which means that the model does not suffer from a problem with correlation of errors or lack of stability of variance.

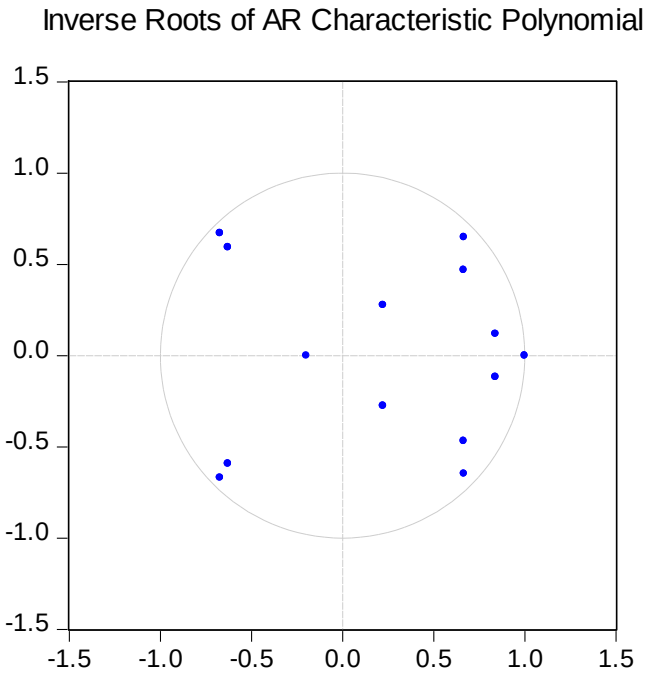

Figure (1): Stability of the VECM vector error correction model graphically

2.7. Autocorrelation of the residuals:

Autocorrelation indicates the presence of a connection between successive values of a random variable, and thus the value of the correlation coefficient between them is not equal to zero, and its presence violates one of the assumptions of the OLS least squares method, which means that the occurrence of an error in a certain period of time affects the error in successive periods, which leads to... To repeat the error more than once. To ensure that there is no autocorrelation of the residuals in the study model, the Breusch-Godfrey Serial Correlation LM test will be used. Test, as in table (9), where the table indicates that the model is free of the problem of autocorrelation between the study variables, as F-Statistic = 0.9113, and thus the null hypothesis that indicates that there is no autocorrelation between the study variables is not rejected

Table (9): Results of the Breusch-Godfrey Serial Correlation L.M. test. Test to test the existence of an autocorrelation between the study variables

		Breusch-Godfrey Serial Correlation LM Test:	
F-statistic	0.012514	Prob. F(1,66)	0.9113
Obs*R-squared	0.013838	Prob. Chi-Square(1)	0.9064

Source: Research's work based on program results (Views: 12)

7.3 Heteroskedasticity Test: ARCH:

It happens in many cases that the variance does not equal a fixed value, and thus values are obtained that are characterized by non-homogeneity of the variance. Consequently, the estimates obtained will lose the properties of adequacy and minimum variance, and the confidence intervals will become wider even though they maintain the linear property and lack of bias. Therefore, the Breusch-Pagan Codfrey Test will be used to ensure that there is no difference in variance between the variables of the study, and as shown in Table (10) there is no problem of difference in variance between the variables of the study, as it was (F-statistics = 0.8592), and thus the null hypothesis that indicates There is no problem of difference in variance between the variables used in the study.

Table (10): Test of homogeneity among the study variables

Heteroskedasticity Test: ARCH		

F-statistic	0.031683	Prob. F(1,70)	0.8592
Obs*R-squared	0.032573	Prob. Chi-Square(1)	0.8568

Source: Research's work based on program results (Views: 12)

First: Conclusions:

1.Public spending in Iraq is of particular importance linked to its economy as a rentier economy in which oil revenues contribute more than 90% to financing the general budget, as changes in the field of public spending have clearly contributed to the change in its annual growth in its current and investment forms, between declining at times and rising at other times. This was due to the changes accompanying it, which formed its total contributions to current spending due to fluctuations in oil prices, which were reflected in changes in the field of oil revenues, which contributed more than (90%) to financing public spending, in addition to the Iraqi economy's dependence on it to cover financing spending. General.

2.The apparent growth of public spending is a clear indication of the government's weak performance in exceeding the apparent numbers of total public spending on the one hand, and an indication that the increases in public spending during the research period were apparent increases and not real on the other hand, and that this reflects negatively on the real impact of this spending. In other variables, especially cash, represented by the money supply that is the subject of the research.

3.As for the money supply (M2), it indicates an increase in its components, whether from (M1), represented by the net currency in circulation and current deposits, which together constituted (M1), which has a high growth, ranging between (25%) in 2021 and (12.3%). (2005) as it is noted that the dominance of the net currency's contribution to circulation and the decline of that importance with regard to the percentage of the contribution of current deposits, which was reflected in the slowdown in the rise in annual growth in M2).

4.The Iraqi economy, as a rentier economy, depends mainly on oil revenues to finance public government spending. Thus, changes in public government spending lead to.. Cause changes in the money supply.

5.In order to understand the role of changes in public government spending in causing changes in the money supply, it was found that after calculating the annual changes for both of the aforementioned variables and the relationship between them, they were reflected in changes in the broad money supply consistent with changes in public government spending.

6.The Extended Dickey-Fuller ADF, Phelps-Perron P-P and KPSS tests were used to test whether the study variables (public spending and money supply in the broad sense) in Iraq are stable at the level or by the first or second difference for the period 20024-2022, as well as to determine the degree of integration of these variables and were used The three tests are to avoid different results between two tests. The results showed that the study variables in Iraq are stable in the first difference, as is the case with the majority of economic variables, and therefore the study variables are integrated in the first degree in the country of study, that is, I(1).

7.The results showed the presence of cointegration between the variables of the study (the presence of two vectors of cointegration between the money supply in the broad sense and public spending for the period 2004-2020) in the country of the study, where the cointegration test was used according to the method of Johannes Jusselus, which consists of two tests, namely the test trace, and the test trace. Maximum value eigenvalue test Maximum.

8. The VECM error correction model was used, which includes testing the existence of a long-term relationship in the long and short terms, the money supply in the broad sense and public spending for the period 2004-2020 in Iraq, where the results showed that there is no long-term equilibrium relationship from total public expenditures to the broad money supply. Therefore, there is no causal relationship in the long run from total public expenditures to the broad money supply in Iraq for the period 2004-2022, and the sign of the error correction coefficient (ECT) was positive, which means that the imbalances in the equilibrium value of the natural logarithm of the broad money supply in Iraq increase every period. It is not possible to correct these imbalances in the value of this variable, and the money supply in the broad sense does not come close to the long-term equilibrium position during the study period. Therefore, it can be concluded that there is a causal relationship in the long run from total public expenditures to the money supply in the broad sense, as the error correction parameter was significant. And negative (-0.29), while the results showed the existence of a causal relationship in the long run from the broad money supply to total public expenditures in Iraq, as the value added to public spending will need 11 years and 6 years in Iraq, respectively, in order for it to return to its equilibrium level after the occurrence of Any random shock in the model.

9. The results of the Granger causality test between the money supply in the broad sense and public spending for the period 2022-2024 showed that there is no causal relationship between the study variables in the short term in Iraq.

Second: Recommendations:

1.Given Iraq's adoption of an expansionary spending policy, it is necessary for the state's spending policy to be based on increasing public government investment spending, which requires restructuring public spending and directing it towards achieving balance to achieve economic development, given the importance of the investment aspect in expanding production capacities and then raising growth rates. Economic in Iraq.
2.The government must adopt a clear financial policy that will maintain spending policy directions and provide appropriate financial allocations to achieve the goals of development plans.
3The necessity of formulating a balanced financial policy that would coordinate with monetary policy to ensure the achievement of economic diversification and influence the possibility of balance in achieving monetary stability and controlling the money supply in a way that ensures the real stability of our national economy.
4.The necessity of moving towards a future vision to deal with potential challenges and their direct effects on the general budget of the Iraqi state.
5.Reconsider the structuring of current public government spending and reduce unnecessary expenditures, taking into account financial discipline.
6.The necessity of adopting monetary policy through the Central Bank, a policy aimed at increasing current deposits and influencing changes in the components of the money supply, especially reducing the size of the increase in the currency in circulation using its monetary procedures.
7.The necessity of searching for appropriate means to control money supply factors in a way that serves the process of stabilizing the money supply.
8.The necessity of investing and the importance of net foreign assets and net government debt for the positive effect through which stability in the money supply and its annual growth can be achieved, in addition to the necessity of benefiting from other countries.

Sources and references:

1 Awad Fadel Ismail Al-Dulaimi, Banks and Money, Dar Al-Hekma for Printing and Publishing – Mosul, 1990 .

2 Abdel Moneim Al-Sayed Ali, Nizar Saad Al-Din Al-Issa, Dar Hamed for Publishing and Distribution, Amman (Jordan) , 1st edition, 2004.

3. Khaled Wassif Al-Wazani, Hassan Ahmed Al-Rifai, Principles of Macroeconomics between Theory and Practice, Dar Wael Publishing(Jordan), 2006.

4. Abdul Hussein Jalil Al-Ghalibi, and Kazem Saad Al-Araji, previous source،2016.

5.Nazim Muhammad Nouri Al-Shammari, Money and Banking, previous source،1987.

6 Muhammad Yunus, et al., Principles of Macroeconomics, Department of Economics, Faculty of Commerce - University Alexandria, 2000.

7.Taher Al-Janabi, Finance and Financial Legislation, Al-Sanhouri Library, 1st edition, Beirut, 2012 .

8. Saeed Ali Muhammad Al-Obaidi, The Economics of Public Finance, Dar Degla, 1st edition, 2011.

9. Mansour Milad Younes, Principles of Public Finance National Library 2004.

10. Muhammad Jamal Thneibat, Public Finance and Financial Legislation, International Scientific House and House of Culture and For Publishing and Distribution, Amman,(Jordan), 1st Edition 2003.

11 .Monem Ahmed Khudair Ali Hussein Taan, Tikrit University – Faculty of Management and Economics, Tikrit Journal of Administrative and Economic Sciences, Vol. 4 Al-Anad 44, Part 1, 2018.

12. Eid Abdullah Al-Juhani, the impact of the deficit in the government agreement on the profitability and reserves of the system Banking in the Kingdom of Saudi Arabia, Journal of King Abdulaziz University in Administration and Economics and King Abdulaziz University, Jeddah, Saudi Arabia, Volume 20, No. 2, 2006.

13.Adel Falih Al-Ali, Public Finance and Financial Legislation, University Press and Publishing House, Mosul, 2002.

14. Abdel Moneim Al-Sayyid Ali, Introduction to Economics, Al-Mustansiriya University, Baghdad, 1984.

15. Samuelson Paul, Nordhaus William, Economics, translated by: Hisham Abdullah University House For Publishing and Distribution, Amman, 1st edition, 2001.

16. Sahira Hussein Zein Al-Talabi, resident of Juhayyat Faraj Al-Sari, an econometric study of the relationship between the money supply and government spending in the Iraqi economy for the period (1991-2011), University of Basra. See: https://faculty.uobasrah.edu.iq for more

17. Abdul Jabbar Abboud Al-Halafi, Iraqi Economy, Oil, Structural Imbalance - Unemployment), Dar Environment, University of Basra 2008.
18. Economic and Social Commission for Western Asia Survey of Economic and Social Developments in Al-Iskawa Region United Nations, New York, 2005.
19. Abdul Redha Nabil Khadr, The Iraqi Economy After the Fall, Warith Publishing and Distribution Foundation, 1st edition ,Baghdad, 2008.
20. Sinan Al-Shabibi Features of Monetary Policy in Iraq Paper presented to the First Annual Meeting of Central Banks and Arab Monetary Institutions, Abu Dhabi, Fund and Thirty Board of Governors Arab Monetary, 2007.
21 .j. Singh, money supply- meaning and measures of money supply, economics 4discussion, available on: http://www. Economicsdiscussion.net/money/money-supply-meaning-and- measures-of-money-supply‹2019.
22.R.kent, Money and Banking, R. Inehart and Winston, New York, 1961.