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THE IMPACT OF OIL PRICE VOLATILITY ON THE CASH SUPPLY IN THE IRAQI ECONOMY FOR THE PERIOD (1990-2019)

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Abstract:

This research was presented to address a problem that always occurs on the Iraqi Economy, namely the fluctuations in oil prices and their impact on the supply of cash and as a result of the Iraqi Economy's association with crude oil to meet its basic needs, any fluctuations or shocks that occur in oil prices are directly reflected in the Iraqi Economy, which demonstrates the importance of research that reviews and addresses an important topic of economic topics in the world producing and consuming oil, especially the rent countries that depend mainly on oil revenues, and addressed the first research the theoretical framework of oil prices and monetary policy and the presentation of cash, and addressed the third research analytical aspect For the Iraqi Economy, some oil indicators, economic policy analysis and the 1015raq monetary presentation for the Period (1990-2019), the third research used standard analysis to analyze the relationship between oil price fluctuations and the manifestation of cash in Iraq using the expanded Dickie Fuller Methodology(ADF),self-correlation equation analysis, as well as analysis of the simple self-regression equation according to annual data (1990-2019) and more accurate estimation of results to achieve research objectives and see the degree of impact of oil price fluctuations The results found a price impact on the offer of cash in Iraq.

1. Introduction:

Crude oil is the primary source of energy and the main source of income for many world countries, especially Iraq[1]. It is the most important source of national income for Iraq[2]. Crude oil plays a significant role in the economies of the producing and consuming countries of crude oil. Any fluctuations in oil prices in the world market directly reflect on the Economy of those countries, especially Iraq[3]. It depends heavily on oil exports, where oil revenues make up the most significant percentage of Iraq's public revenues[4]. The research and review of fluctuations in oil prices and knowledge of the causes of oil prices Iraq is one of the countries affected by oil price fluctuations both on the rise and the decline[5]. The interest has emerged in examining these fluctuations and how they are used in a surge and avoiding their adverse effects in drop. The idea of oil rents in the Iraqi Economy began in the early 1970s when oil-producing countries developed an oil policy independent of monopolistic global companies[6, 7]. The nations began to manage their oil wealth and obtain revenues. At that time, oil prices have not stabilized as they have become prone to fluctuations from time to time for reasons that may be political or economic. Iraq is the country most affected by the changes in oil prices due to its rent economy and reliance on oil revenues to meet the basic needs. So this study dealt with fluctuations in oil prices and their impact on the supply of cash in Iraq.It reflects the importance of research that reviews and addresses an important topic in the economic issues of the world's oil-producing and consuming countries. Especially the rent-based countries that rely mainly on oil revenues, where the importance of research lies in highlighting the volatility of oil prices and the positive and negative effects they cause on the supply of cash. The study aims to measure and know the fluctuations in oil prices and determine the relationship between changes and money presentation in Iraq. It also aims to learn its positive and negative effects by studying the reality and historical development of oil prices and some monetary variables, using the best modern statistical and standard programs and tests included in the research. The problem of this research is the lack of clarity on the subject of oil price fluctuations and their recurrence from time to time and the uncertainty surrounding the knowledge of the positive effects and adverse effects on the Iraqi Economy. It depends heavily on oil revenues, the research highlights this problem, and can it be known the impact of oil price fluctuations on the supply of cash in Iraq? In light of the heavy reliance on oil revenues? Can its positive effects be exploited and adverse effects avoided?

The research is based on the premise that there is a direct impact between crude oil price fluctuations and cash supply, with a long and short-term relationship.

2. Literature Review:

2.1. Oil Price Fluctuations and Cash Supply:

The oil price is defined as the value of the commodity or service expressed by money[8]. The amount of money that the seller receives from the buyer against the entity he produces and offers for sale or the value of the thing expressed in monetary units, and this price may be equal to the item's actual value[9]. It may be larger or lower than it is. They have a changing and not fixed relationship due to the impact and overlap of several subjective and objective factors such as nature and form of markets, political, economic, social, and other factors[10]. The oil price crosses the monetary value of a barrel of crude oil on the U.S. 42-gallon barrel scale expressed by

the U.S. monetary unit (dollar)[11]. Table 1 shows crude oil prices on the global oil market for the Period (1990-2019):

Table 1. Iraqi crude oil price and global prices (1990-2019)

Year	Iraqi Oil Price	OPEC basket price	Brent crude price	Year	Iraqi Oil Price	OPEC basket price	Brent crude price
1990	19.91	22.26	23.61	2005	48.33	54.44	50.64
1991	16.33	18.62	20.06	2006	57.97	65.16	61.08
1992	16.72	18.44	19.33	2007	66.40	72.55	69.08
1993	14.08	16.33	17.00	2008	92.08	97.37	94.45
1994	14.56	15.53	15.80	2009	60.50	61.68	61.06
1995	16.26	16.86	17.01	2010	76.79	79.60	77.45
1996	18.49	20.29	20.70	2011	106.17	111.36	107.46
1997	18.00	18.68	19.06	2012	107.96	109.45	111.62
1998	10.77	12.28	12.71	2013	103.60	105.87	108.62
1999	16.28	17.47	17.91	2014	94.45	96.29	99.08
2000	24.92	27.60	28.44	2015	47.87	49.49	52.41
2001	21.92	23.12	24.46	2016	39.53	40.76	43.76
2002	23.32	24.36	25.03	2017	51.87	52.43	54.17
2003	26.60	28.10	28.81	2018	68.62	69.78	71.22
2004	34.60	36.05	38.23	2019	62.54	64.0	64.2

Source: OPEC, (1999, 2007, 2012, 2015, 2019 ,2020) , Annual statistical bulletin.

Factors Affecting The Price of Crude Oil:

1- The size **of the oil reserves:** The scarcity of crude oil can be determined in light of the proven reserves of crude oil[12]. When geologists increase their estimates of the size of the oil reserves, the scarcity of the oil resource will decrease, which leads producers to reconsider the cost of the user towards reducing it, and the price of crude oil will drop.

2. **Oil demand:** Oil is the rate at which consumers want to get from a particular product[13]. The economic theory is that oil demand consists of two main factors: taste and ability to buy. Taste means the desire to acquire a particular commodity. But the ability to purchase means that the individual has enough money and wealth to buy the entity at a price specified in the market. The demand is in reverse relation to the price. If the price increases, the request is reduced and vice versa.

3- Oil supply: The relative supply flexibility (production response to price changes) is declining, especially when it comes to the increasing collection with the higher price[14]. The oil production depends mainly on the ability to extract from wells and the optimal extraction rate of oil from the well. So the rise in the price of oil is not offset by an increase in the oil supply. Increasing pressures on prices and pushing them further to lower oil prices must increase the oil supply. It is a complicated issue, especially when production reaches its maximum. Increased oil production and then increased collection require the development of existing wells and the strengthening of the exploration rate of new wells, which requires a longtime[15].

4- Economic growth rate: The economic growth rate is one of the main determinants of global crude oil consumption[16]. Any increase in economic growth rates will lead

to a rise in crude oil consumption rates, which pushes the price upwards. Still, if the opposite happens and there is a decrease in economic growth rates, this will cause demand rates, and then consumption of oil downwards leads to lower oil prices.

5- U.S. dollar exchange rate: Crude oil is priced in dollars in global markets as any change in the exchange rate leads to a direct impact on the price of crude oil[17]. The decline in the dollar exchange rate leads to higher crude oil prices through direct and indirect.

6. Climate variability: Climate changes affect crude oil demand levels. It has been noted that demand levels in consuming countries fall in the summer due to rising temperatures, in contrast to higher demand for crude oil in winter.

Monetary Policy And Cash Offer:

1. The concept of monetary policy: it is a policy tool used by the State, among other policies, such as fiscal policy, trade policy, price, and wage policy, intending to influence the level of economic activity by controlling the critical variables of economic activity such as investment, production, income, and prices. Monetary policy has defined as those policies and instruments carried out by the central bank's monetary authorities in financial markets to achieve economic performance. It manages the monetary bloc by influencing the monetary supply by expanding or shrinking to attain economic objectives aimed at achieving economic growth.

2. Cash offer:

A. The concept of cash offer: Economists have had difficulty determining a specific agreement to define the offer of cash that includes the essential components. This agreement revolves around a fundamental point that is the crucial elements that make up the offer of money. The concept of offering cash to the number of payment methods available in society is the total amount of money of all kinds that exist during a specific period[18]. It is one of the most critical monetary variables that reflect the image of the economic situation at a time stage. Changes in the supply of cash are prompting significant economic variables such as prices, output, exchange rates, and interest rates. The central bank is the monetary authority that controls the supply of cash either through the issuance of legal money or through the money multiplier or banking and credit controls. The monetary policy relies on a variable financial offer to influence economic activity[19]. Thus achieving growth and economic stability by influencing macroeconomic variables and changes in the money supply affect interest rates in the Economy, reflecting other indicators, such as investment and savings, and other indicators such as growth and economic stability.

B. Types of cash offer:

A. **Narrow Cash Offer(M1):** It means the range of payment methods traded in Qatar over a certain period as the so-called monetary mass[20]. It regulates the number of payment methods used in trading and held by individuals or projects in a cash form and is prepared using immediate payment[7, 21]. This definition prevailed until the fifth decade of the previous century, as the offer of cash is a debit or commitment to the banking system to consider what the public bears in its work. The Central Bank and the credit issue it receive from commercial banks represent a debt to the organ and rights of the public.

B. **Wide Cash Offer (M2):** It is internal or domestic liquidity and consists of a narrow cash offer plus time deposits (futures) and private savings deposits with commercial banks[22]. This concept has been relied upon through the proposals of Friedman and Anna Schwartz, as the narrow idea does not accurately reflect the amounts of cash available within the Economy[23]. It is the broad concept that creates an appropriate framework for the total size of the money.

A. The **broader concept** of the monetary offer**(M3):** This concept includes a broad definition of the offer of cash based on local liquidity(M2)plus savings deposited outside commercial banks, i.e., savings institutions, borrowing associations, and savings funds[24].

D **Cash Offer on the Liquidity Scale (M4):** Consists of broader cash offer as well as cash assets with specialized banks, i.e., it is equal to:

M3=M4 + High liquid cash and financial assets

These high-liquid financial assets are worth paying in short periods ranging from 3 months to 6 months, treasury permissions issued by governments for short-term borrowing, often fast-trading, and can be converted into cash balances. Yet, they have not considered money but are called semi-cash.

The Relationship Between Oil Price Fluctuations and The Cash Supply:

Many economic works of literature have examined the link between oil price shocks and various macroeconomic indicators [25-27] examined the relationship between oil prices and economic growth. For example, Nazlioglu, et al. [28]Wen, et al. [16] and Chen, et al. [29] examined the relationship between the heart of oil prices and their impact on monetary policy as well as Mensah, et al. [30]Yang, et al. [31]Nusair and Olson [32]examined the relationship between oil prices and exchange rates.

Oil price fluctuations can also affect the money supply in the economies of oil-exporting countries, with oil-exporting countries usually enjoying high returns from oil exports[33]. The majority of these revenues were deposited in the accounts of government banks. For example, in Saudi Arabia, oil revenues accounted for an average of 80.03% of total government revenues during 2010-2017[34]. However, the recent drop in oil prices from mid-2014 has led to lower oil revenues. Yet, the actual economic impact of these deposits (an increase in central bank commitments) on the local economy depends on whether or not the central government spends these deposits and how the government spends them - on domestic goods and services or imports. Therefore, the financial incentive for this expenditure determines the impact on both nominal and real economic growth, which affects the money supply.

If the government does not spend the increased oil revenues resulting from higher oil prices, the government's balances with the central bank will grow[1]. The impact of higher oil export revenues on liquidity in the State's financial system will not affect the proceeds of the purchase of domestic debt instruments (open market operations). Therefore the money supply is expected to grow. However, establishing a high-strength cash base does not occur automatically but depends on what the Central Bank does.

Olomola & Adejumo (2006) examined the effects of oil price fluctuations on production, inflation, real exchange rate, and money supply in Nigeria under VAR and argued that oil price shocks largely determine the real exchange rate long-term

money supply. It could lead to "Dutch disease," i.e., the local currency will become high for other currencies, leading to higher export costs and lower import costs and, therefore, less competitive domestic industry.

3. Research methodology:

The research relied on the historical approach and descriptive approach to identifying oil prices, global oil price fluctuations and instability, and an inductive approach based on combining descriptive analysis with statistical analysis to view and analyze data and to see the results and effects of the analysis

In response to the requirements of the study, the research section was divided into three investigations. The first research dealt with oil prices and factors affecting oil prices, monetary policy, cash supply, and the relationship between oil price fluctuations. The second section also addressed the reality of the Iraqi Economy and some essential oil indicators and the analysis of monetary policy, and the presentation of cash in Iraq for the Period (1990-2019). The third discussed the theoretical and quantitative standard aspect of oil price fluctuations on the supply of money in Iraq (1990-2019).

4. Iraqi Economy for the Period (1990-2019)

4.1. The reality of the Iraqi Economy:

The Iraqi Economy was severely damaged by the destruction of infrastructure in the 1990 Gulf War and the resulting economic sanctions that led to the Iraqi economy's collapse. The sanctions imposed on the Iraqi Economy six days after its invasion of Kuwait banned all goods and products from exports and imports except for a bit of food and medicine. Even before this war and sanctions and economic collapse, the Iraqi Economy was not self-sufficient.It was dependent on imports to meet its needs of medicine and food. In 2003, due to the U.S.occupation of Iraq, oil production fell from 2.1 million to 1.3 million barrels per day, mass destruction in the public sector and a severe slowdown in economic activity, GDP fell by 22% (at constant prices), which was only slightly higher than $12 billion in 2003[35].

The problems worsened after the political change that took place in Iraq after 2003. The Iraqi Economy became in a difficult position after the destruction of infrastructure, buildings, bridges, and looting of vital facilities. Growth of about 34.7% compared to 60.7% growth rate in 2006, Iraq's GDP growth has contributed to the continued significant rise in world oil prices. The marked improvement in global oil markets and increased oil export revenues during this period have contributed to the fact that output growth rates in Iraq remain at high levels compared to the growth rates recorded during 2001-2003. However, the situation changed in 2014 after the fall in oil prices and the occupation of terrorist organizations about one third of Iraqi territory, which made the Iraqi Economy suffer from double shock and the deficit became real, and Iraq's losses as a result were estimated at 47 billion dollars, so Iraq needed an effective economic policy through which the situation could be overcome The recession it is going through, and this is during what happens in societies that emerge from conflict and usually suffer from inflationary pressures, deteriorating exchange rates and increased public debt, yet GDP grew by 13.79% in 2006 compared to a year ago 2015, so the rate became negative at 3.77% in 2017 due to

low global oil prices and the government's austerity policy to reduce the budget deficit, and we note that the growth rate reached 4.7% in 2017 015 and became negative at a rate of 3.8% in 2017 and beyond, while non-oil output was negative during this Period, this confirms the extent to which the country is exposed and its impact on external factors, as well as indicates the monotheism of the Iraqi Economy.

4.2. Indicators of the Iraqi Economy:

Iraq's oil reserves and production: Iraq's oil reserves are estimated at 115 billion barrels of proven reserves, ranking third only to Saudi Arabia and Iran, with relative importance approaching 13% of OPEC reserves[36]. About 10% of the world's accounts in 2009 distributed Iraq's oil reserves in most Iraq provinces. Basra province alone stores 65.784 billion barrels in its advanced fields and 4.450 billion barrels in its undeveloped areas, thus achieving the highest oil reserves in Iraq. Estimated at 59%, followed by Kirkuk province of the relative importance of 12%, and then Maysan province is of relative importance about 7.6%. At the same time, DhiQar province stores about 5 billion barrels of proven oil reserves and relative importance of 4.5%. While the rest of the provinces are regulated by the remaining quantities and of different significance, the southern provinces (Basra, DhiQar, and Maysan) hold about 71% of the proven oil reserves.

In contrast, the northern provinces (Kirkuk, Mosul, and Salah al-Din) have about 22% of the confirmed funds. In comparison, The other regions in central Iraq account for about 7% of Iraq's oil reserves. Table 2 shows the Iraqi crude oil production and its global importance for the Period (1990-2019):

Table (2). Iraqi crude oil reserves and production

Year	World reserves (1 million barrels)	Iraq's reserves (1 millionbarrels)	Importance to the world %	Year	World production (1 million barrels)	Iraq production (1 millionbarrels)	Significance to the world %
1990	985031	100000	10.2	1990	59106.7	2112.6	3.57
1991	988768	100000	10.1	1991	58696.7	282.5	0.5
1992	994793	100000	10.05	1992	59327.3	526.2	0.9
1993	996161	100000	10.04	1993	59106.9	659.5	1.12
1994	1001762	100000	9.98	1994	59889.1	748.7	1.25
1995	1033300	100000	9.9	1995	60443.5	736.9	1.23
1996	1039400	112000	10.77	1996	61572.1	740.4	1.2
1997	1045176	112500	10.76	1997	62924.1	1383.9	2.2
1998	1051820	112500	10.7	1998	65147.4	2181.1	3.35

1999	1067204	112500	10.5	1999	63395.9	2719.8	4.3
2000	1090620	112500	10.3	2000	65856.9	2810.0	4.3
2001	1121822	115000	10.25	2001	65386.9	2593.7	3.97
2002	1157610	115000	9.9	2002	63980.8	2126.5	3.3
2003	1184823	115000	9.71	2003	67221.1	1377.8	2.05
2004	1190338	115000	9.66	2004	70511.7	2107.1	2.99
2005	1198953	115000	9.6	2005	71640.5	1853.2	2.6
2006	1209545	115000	9.51	2006	71374.9	1957.2	2.73
2007	1213008	115000	9.5	2007	71287.2	2035.2	2.85
2008	1292280	115000	8.9	2008	71773.6	2280.5	3.2
2009	1332776	115000	8.63	2009	68984.7	2336.2	3.4
2010	1459765	143100	9.8	2010	69885.6	2358.1	3.4
2011	1467811	141350	9.63	2011	70426.7	2652.6	3.8
2012	1480251	140300	9.5	2012	72784.6	2942.4	4.0
2013	1490134	144211	9.7	2013	72909.2	2979.6	4.1
2014	1492254	143069	9.6	2014	73359.8	3110.5	4.2
2015	1490454	142503	9.5	2015	75080.1	3504.1	4.7
2016	1490661	148766	9.98	2016	75276.2	4647.8	6.2
2017	1492160	147223	9.87	2017	74566.8	4468.7	6.0
2018	1497986	145019	9.7	2018	75779.9	4410.0	5.82
2019	1550740	145019	9.35	2019	75265.6	4580.0	6.0

Source: OPEC, (2007,2009,2012,2015,2019,2020), Annual statistical Bulletin.

4.3. Monetary policy analysis and cash supply in Iraq:

1. Monetary policy in Iraq: Monetary policy is one of the macroeconomic policies that are enforced by the monetary authority, embodied by the Central Bank, through the banking system and by the influence and organization of the financial system,

whose institutions such as the stock exchange, investment banks, and insurance firms both play a significant role in monetary policy. The Central Bank of Iraq, led by the issuance of cash or national currency, control of the banking system, the management of the payment system. The Volume of Credit's impact to serve the country's credit requirements and the management of foreign currency reserves, which is the highest monetary authority in Iraq, is called the Bank of Banks. Thus manages the resources of commercial banks in Iraq No. (64) of 1976, the Central Bank took over the Board of Directors of the Central Bank of Iraq. It issued instructions and guidance for monetary policy in Iraq to reach the primary central objectives, including raising the purchasing power of the Iraqi dinar and raising its value against foreign currencies and reducing inflation rates, and the formation and management of foreign reserves.

2. Analysis and study of the cash supply in Iraq (1990-2019): The Period of the 1990s is one of the most painful periods for the Iraqi Economy. This is due to the economic embargo imposed on Iraq during the Kuwait war. The monetary policy financed the deficit by creating a sizeable monetary mass that exceeded GDP growth rates, making the gap between cash current and commodity current significant, causing the decline in the supply of cash in Iraq. It harmed the Iraqi Economy after 2003. after The Central Bank, on its complete independence from the government, has taken to chart its policy and manage its instruments to manage and control the cash supply to achieve price stability and ensure access to a sound monetary system. Despite all these measures, the ability of the Central Bank to control the supply of cash remained limited as the monetary bloc took the expulsion increase after 2004 due to the expansion of economic activity through increased oil revenues and increased employment in the government sector led to increased public tunnels. Table(3) shows the evolution of the supply of cash in a narrow and comprehensive sense. In Iraq for the Period (1990-2019):

Table 3. Presentation of cash in the narrow sense (1990-2019)

Year	Currency out Banks (1 million dinars)	Deposits Current (1 million dinars)	M_1(million dinars)	rate Change Annual%	Semi-money (1 million dinars)	M_2(million dinars)	rate Change Annual%
1990	13412.1	1947.2	15359.3	29.42	9509.8	24869.1	
1991	21873	2797	24670	60.61	10575.5	35245.5	41.6
1992	36021	7888	43909	78	20405	64314	82.5
1993	67134	19296	86430	98.85	46004	132434	105.91
1994	199436	39465	238901	176.42	75134	314035	137.12
1995	384398	120666	705064	195.11	181830	886894	182.41
1996	881616	78887	960503	36.22	194124	1154627	30.1
1997	929828	108269	1038097	8.2	302165	1340262	16.2
1998	1192530	159346	1251876	30.1	436019	1787895	33.3
1999	1275220	208616	1483836	9.75	563602	2047438	14.52
2000	1474321	253985	1728006	16.4	717545	2445551	19.3
2001	1782691.1	376397.9	2159089	24.94	690509.1	2849598.1	16.5
2002	2563693.5	449907.6	3013601	39.5	857467.7	3871068.8	35.84
2003	4629794	1143807	5773601	91.6	1179819	6953420	79.64
2004	7162945	2985681	10148626	75.7	1349522	11498148	65.4

2005	9112837	2286288	11399125	12.4	3260225	14659350	27.6
2006	10968099	4491961	15460060	35.5	5590189	21050240	43.6
2007	14231700	7489467	21721167	40.6	5198829	26919996	27.8
2008	18492502	9697432	28189934	29.7	6671993	24861927	29.6
2009	21775679	15524351	37300030	32.31	8055259	45355289	30.01
2010	24342192	27401297	51743489	38.6	8545679	60289168	32.94
2011	28287361	34186568	62473929	20.75	9593380	72067309	19.4
2012	30593647	33142224	63735871	2.02	11622257	75336182	4.6
2013	34995453	38835511	73830964	15.86	13695621	87526585	16.3
2014	36071593	36620855	72692448	1.5-	17874482	90566930	3.4
2015	34855256	34757894	96613150	4.3-	14914122	84527272	6.6-
2016	42075230	33448722	75523952	8.4	14942418	90466370	7.02
2017	40343309	36643275	76986584	1.95	15870463	92857047	2.5
2018	40498067	37330917	77828984	1.2	17561741	95390725	2.72
2019	47638603	39132397	86771000	11.48	16670131	103441131	8.43

Source: Central Bank of Iraq, Directorate General of Statistics and Research, Annual Bulletins.

5. Analysis of the relationship between oil price fluctuations and the cash supply:

5.1. Analysis of time series:

The time series is a set of values for a specific statistical indicator arranged by chronological order. A numerical value of the hand matches each time called the string level. In other words, a set of data represented overtime in an upward order. To avoid false regression, time chains must be static, and time chains are static if the following characteristics are available:

1. Stability of the arithmetic average over time $E(Y_t) = \mu$
2. Stability of contrast over time$Var(Y_t) = E(Y_t - \mu)^2 = \sigma^2$
3. The heterogeneity (standard integration) between two values of the same variable should depend on the time gap between two values and not on the actual value of the time at which heterogeneity is calculated.$\delta k = E(Y_t - \mu)(Y_{t+k} - \mu)$

These characteristics are necessary to determine the direction of causality between time chains and the instability between the chain's variables. The decline we obtain is falseand unreliable. one of the preliminary indicators that indicate the problem of self-association the significant selection factor(R2). Theincreased statistical morality of the features (F)and(t)estimated is due to the trend factor that makes all variables go in the same direction and often occurs in periods of stag nationan drecession.

Unit roots test:

It is a standard test for testing the stillness of the time series or not, and these tests include:

A. Dickie Fuller Simple Test(D.F.):

The unit root is tested through the following equations:

1) Formula 1: Without a fixed limit and without a time trend:

$\Delta Y_t = \delta Y_{t-1} + \mu_t \dots\dots\dots\dots (3)$

2) Includes a fixed limit and no time direction

$$\Delta Y_t = a + \delta Y_{t-1} + \mu_t \dots\dots\dots\dots (4)$$

3) Includes a fixed limit and time direction

$$\Delta Y_t = a + \beta t + \delta Y_{t-1} + \mu_t \dots\dots\dots\dots (5)$$

B. Dickie Fuller's extended test:

This test is different from the previous test as this test can overcome the problem of self-association between random variables ignored(A.D.), Dickey-Fuller has added time-slowing values to the dependent variable, the ADF test is by the following regression equation:

$$Y_t = \beta_1 + \beta_{2t} + \delta Y_{t-1} + \sum_{t-1}^{n} ai\, \Delta Y_{t-1} + \varepsilon_t \dots\dots\dots\dots (6)$$

The expanded Dickie-Fuller test as random variables become unrelated (self-related) and is characterized by desired properties. According to the ADF test, the stillness of the time series is tested through the statistical test (Ţ) (β). It is compared to the scheduling values. If it is statistically moral, we reject the hypothesis of nothingness ($0 \neq \beta$: $_{H)}$, i.e., the lack of unit root and static time series. But suppose the value (t) Statistically non-significant, we accept the hypothesis of nothingness and reject the alternative hypothesis (1 ≠β:H1). In that case, i.e., the time series is not static, and to avoid the problem of non-sleep, we resort to taking the first difference of the series, then Ntakes the first difference. So the series is integrated first class (1) Φ, but if it is not static, NAtakes the second difference, and there fore the series is the static second class(2) Φ·

Statistical results from the Dickie Feller Test(ADF)indicate that the time series of studied changes are unstable at the level but have stabilized at the first difference, as shown in the two tables.

Table 3. Dickie Feller Extended Test(ADF)

Without a cutter and direction.			Cutter and direction			Decisive			Variable
The result	Critical stat	t-stat	The result	Critical stat	t-stat	The result	Critical stat	t-stat	
except stable	-2.647120 -1.952910 -1.610011	-0.30208	Unstable	-4.49837 -3.65846 -3.26893	-1.81313	Unstable	-3.67932 -2.96776 -2.62298	-1.3186	Op.
Unstable	-2.647120 -1.952910 -	3.23303	Unstable	-4.30984 -3.57424 -3.22178	-1.6325	Unstable	-3.679322 -2.967767 -2.622989	1.3750	M2

	1.610011								

Source: Researcher preparation based on E Views 12 statistical program test results

Table(4). Dickie Feller Extended Test(ADF)

Without a cutter and direction.			Cutter and direction			Decisive			Variable
The result	Critical stat	t-stat	The result	Critical stat	t-stat	The result	Critical stat	t-stat	
Based At 1%	-2.650145 -1.953381 -1.609798	-4.685882	Based At 1%	-4.323979 -3.580622 -3.225334	-4.57153	Stable at 1%	-3.689194 -2.971853 -2.625121	-4.65032	Op.
	-2.650145 -1.953381 -1.609798	-2.748508		-4.323979 -3.580622 -3.225334	-4.062855		-3.689194 -2.971853 -2.625121	-3.632138	M2

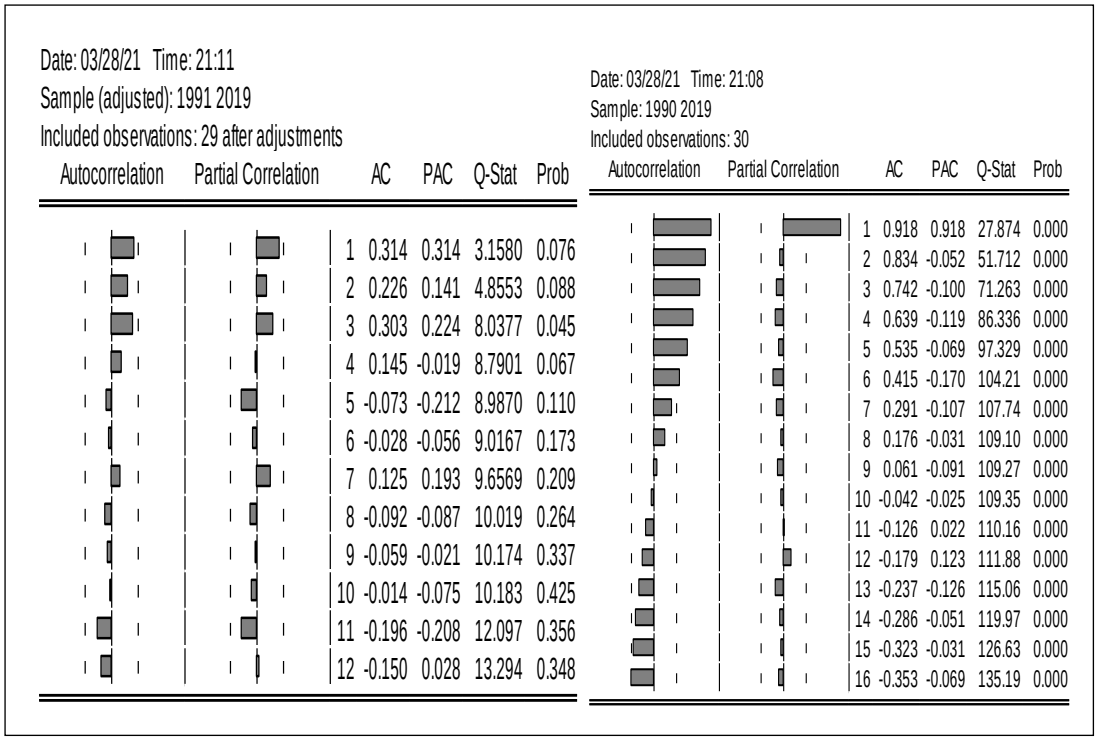
Source: Researcher preparation based on E Views 12 statistical program test results

2- Function Autocorrelation

We note the results of the test of the stability of the time series in the forms () that the time series of the variables studied are unstable in the level and that they stabilize after taking the first difference of time series, and based on the test of the self-link equation(A.C.)which is used to see the presence of root unit test)or not, as shown in the following forms:

A. Figure 1 shows the self-correlation equation, as the link parameter(A.C.)starts from a high value when time lag 1 (0.918) lag 1 (0.918) and decreases at Log 12 (-0.353),so this test shows that the time series(M2)is unstable at thelevel and that it stabilized after taking the first difference.

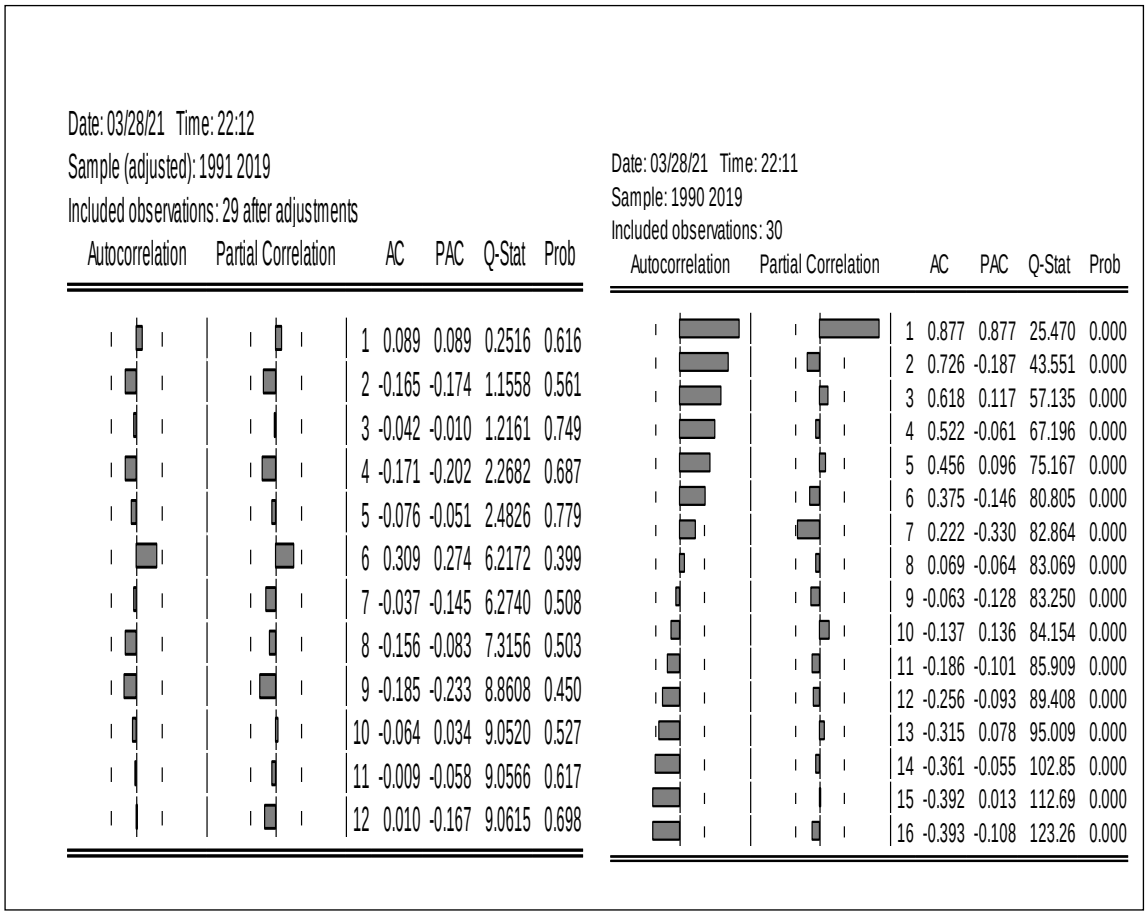
Figure 1. Variable Self-Link Test (M2)



Source: Researcher preparation based on E Views 12 statistical program results

B. Figure 2 shows the self-correlation equation, as the link parameter(A.C.)starts from a high value when the time lag 1 (0.877) lag one-time lag 1 (0.877) and decreases at Log 12 (0.393). So this test shows that the time series(O.P.)is unstable at the level and stabilized after taking the first difference.

Figure 2 Variable Self-Link Test (O.P.)



Source: E Views 12 statistical program results

Linear regression equation:

1- Estimate the unique model between oil prices(O.P.)and the offer of cash (M2):

The results of the estimated model indicate an expelled relationship between the independent variable(O.P.). The variable(M2),i.e., the change in oil price by one unit, leads to an increase in the supply of cash by (910136.1). It is in line with economic theory, especially in countries with a high dependence on oil as oil prices lead to increased liquidity, and vice versa in low oil prices.

To know the estimated parameters, we note that the value(t)calculated on the independent variable(O.P.)was (5.849193) and at a moral level below (1%). We, therefore, reject the hypothesis of nothingness and accept the alternative hypothesis. At the same time, (F)refers to the estimated total of the model at a value of (34.21305) and a moral level below (1%).

The value of(R2) interpreted the independent variable by 55%. The remaining percentage represents other variables that have not been included inthe random variable model, while the value of-W(0.296) indicates a subjective correlation between variables.

Table(5). Linear regression equation

Dependent Variable: M2
Method: Least Squares
Date: 03/23/21 Time: 20:27
Sample: 1990 2019
Included observations: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-7673536.	8614901.	-0.890728	0.3807
OP	910136.1	155600.3	5.849193	0.0000

R-squared	0.549934	Mean dependent var	34024044
Adjusted R-squared	0.533860	S.D. dependent var	38804604
S.E. of regression	26493632	Akaike info criterion	37.08705
Sum squared resid	1.97E+16	Schwarz criterion	37.18046
Log likelihood	-554.3057	Hannan-Quinn criter.	37.11693
F-statistic	34.21305	Durbin-Watson stat	0.296959
Prob(F-statistic)	0.000003		

Source: Researcher preparation based on E Views 12 results

6. Conclusions and Discussion:

Since the early 1970s, when oil became independent of major foreign companies, world oil prices have fluctuated due to various economic, political. The commercial factors, exposing oil-producing countries, especially Iraq, to severe financial problems resulting from their fundamental reliance on oil. Iraq is one of the world's largest oil reserves, accounting for more than 10% of total crude oil reserves, making it one of the most prominent and dominant countries in OPEC and the global oil industry. Rent is one of the issues confronting the Iraqi economy. Its reliance on the oil industry in the absence of other sectors such as manufacturing and agriculture leaves Iraq more

vulnerable to economic difficulties in low oil prices. The influence of oil prices on the supply of cash and the Iraqi economy relies entirely on oil sales. Any rise in oil prices raises public revenues, thus increasing the supply of money, due to the volatility and insecurity of oil prices and the absolute dependence on oil revenues in Iraq's general budget. The first advice is to diversify public revenues in the Iraqi economy and avoid reliance on the oil market, which may expose the Iraqi economy to severe problems due to price fluctuations. The Central Bank should ensure the country's monetary stability, exchange rate stability, and the elimination of graft in Iraq's currency auctions.

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