World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 33, April, 2024
ISSN: 2749-3628,

THE IMPACT OF FLUCTUATIONS IN THE INTERNATIONAL OIL MARKETS ON THE IRAQI ECONOMY

Maitham A. Rodhan1,2*
[1] Institute of Economics, Corvinus University of Budapest, Budapest, Hungary
[2] Department of Oil and Gas Economics, Basrah University for Oil and Gas, Basrah, Iraq
*Corresponding author. Email: Maithamahameed@gmail.com

Article history:

Received: 30th January 2024
Accepted: 28th March 2024

Abstract:

Oil revenues play a significant role in the Iraqi economy, whether it is through its contribution to the formation of the GDP or its contribution to total exports as well as financing public expenditures and providing foreign reserves. However, the dependence of the Iraqi economy almost entirely on oil revenues had negative effects on the Iraqi economy, as the Iraqi economy is directly proportional to oil prices in international markets, so the Iraqi economy thrives with rising prices and declines with their decline. This poses a great danger to the Iraqi economy and works to destabilize it.

Keywords: Iraqi oil revenues, oil price shocks, Iraqi government revenues, GDP.
JEL Classifications Codes: Q02, Q41, Q33, E01

1. INTRODUCTION

Iraq is the second largest crude oil producer in the Organisation of Petroleum Exporting Countries (OPEC) after Saudi Arabia. Iraq holds the fifth largest proven crude oil in the world after Venezuela, Saudi Arabia, Iran, and Canada with reserves of 145 billion barrels, representing 17% of proved reserves in the Middle East, 11.8% of OPEC reserves and 9.4 % of global reserves (US EIA .2021a). Regarding the unproven reserves, oil experts estimate them at more than 400 billion barrels. In 2019, Iraq was the fourth largest exporter and producer of crude oil after the United States, Russia, and Saudi Arabia with production of 4.57 Mb/d, with a relative importance of 15.6% of the total OPEC production and 6.1% of the total world production (OPEC,2020). Most of the major known fields are producing or in development. It is in Basra city in southern Iraq (Map 1). Despite the security turmoil that occurred in Iraq after 2003, the production and export of Iraqi oil, in general, were not affected. As the bulk of Iraq's oil reserves and its production are in Basra city, which was stable in security, the Basra oil exports in November 2021 accounted for more than 96% of Iraq's oil exports (SOMO, 2021).

In Iraq, oil has been of strategic importance to the Iraqi economy since the beginning of the 1970s. Presently, Iraq depends primarily on oil revenues, which represent approximately 98% of its total exports and more than 90% of the state's budget revenues. Therefore, slight oil price fluctuations would have a great effect on the Iraqi economy. For example, when oil prices lost 60% of their value between 2014 and 2016, the government was forced to reduce a percentage of wages in the public sector and reduce current spending as well as investment spending, which included stopping the establishment of new projects and stopping financing projects that were under construction. This paper discusses the impact of oil shocks, on the major macroeconomic variables, Gross Domestic Product, government revenue, total exports, international reserves, and the emergence of symptoms of the Dutch disease on the Iraqi economy.

2. IRAQI OIL PRODUCTION

Iraq is one of the major producers of crude oil. The production of Iraqi crude oil increased from 1.54 Mb/d in 1970 to 2.41 Mb/d in 1976 and to 3.47 Mb/d in 1979. However, this increase in production rates did not last long, as production decreased significantly with the outbreak of the Iran-Iraq war, where it reached 0.89 Mb/d in 1981. This is due to the almost cessation of exports from the Arabian Gulf, on the one hand, and the devastating effects on the oil infrastructure, on the other. After the end of the Iran-Iraq war, the state's desire to increase its oil revenues due to its urgent need for these revenues for reconstruction and debt repayment, as well as the possibility of exporting larger quantities of crude oil through the Arabian Gulf, led to an increase in production until it reached 2.78 Mb/d in 1989, which is the highest average daily production during the 1980s.

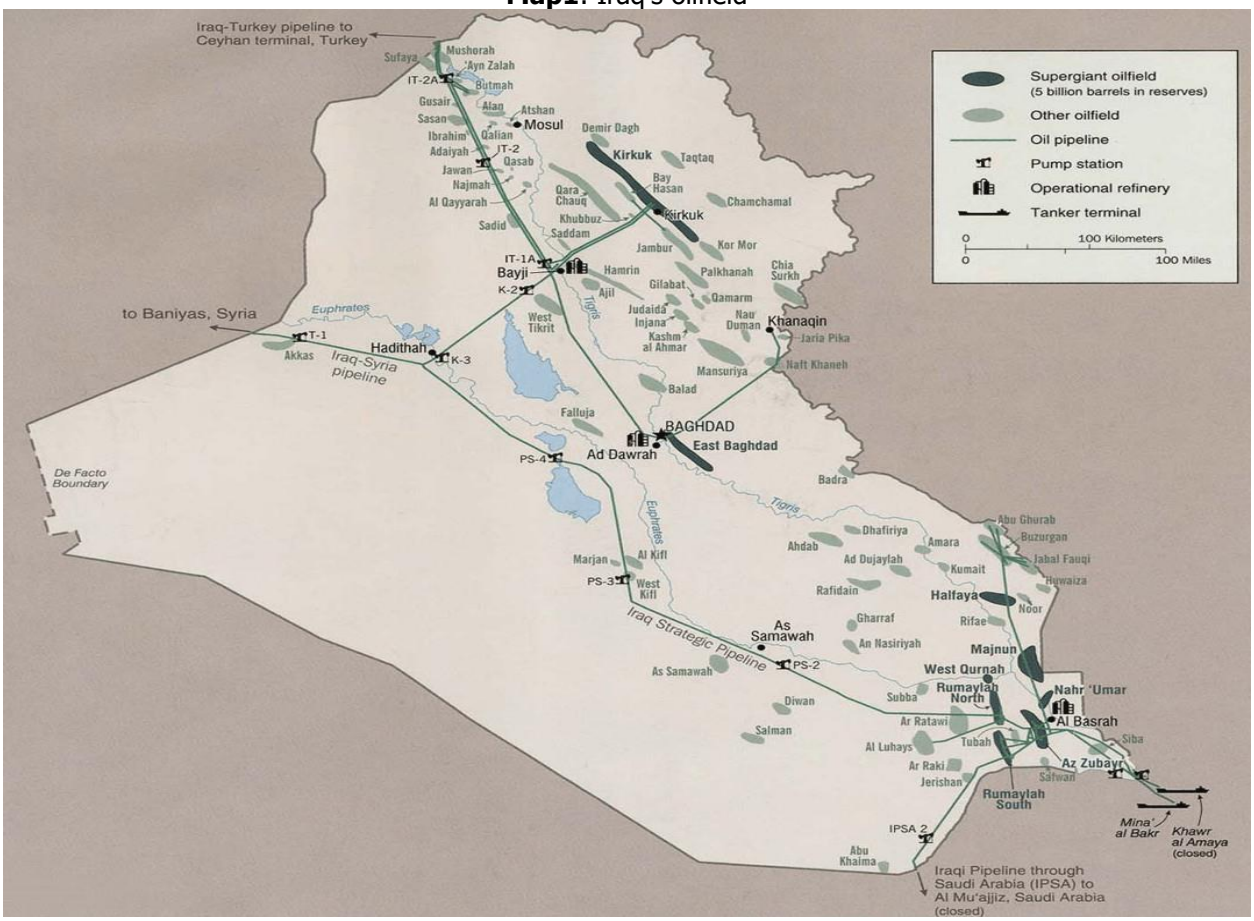
The Second Gulf War in 1991 caused a sharp decline in Iraqi oil production, reaching 0.28 Mb/d. And Iraqi production did not rise during the period (1991–1996)

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 33, April, 2024
ISSN: 2749-3628,

except for slight increases. These increases were due to exports to Jordan, which was allowed to import Iraqi crude oil in limited quantities, as well as meet local demand.

With the implementation of the oil-for-food agreement at the end of 1996, Iraq gradually regained its position in the global oil market until its production reached 1.38 Mb/d in 1997 and then rose to 2.81 Mb/d in 2000, which is the highest production level for Iraq since 1980. But production started to decline in 2003, reaching 1.37 Mb/d due to the American occupation of Iraq and the accompanying destruction, looting, and sabotage of the oil infrastructure. However, despite this, the occupation authorities have worked to support crude oil production and export operations to secure the oil revenues that the Iraqi government needed to secure the requirements of the Iraqi economy on the one hand. Also, to maintain Iraqi oil exports to avoid negative repercussions on global oil markets, on the other hand. Therefore, Iraqi crude oil rose in 2004 to 1.94 Mb/d and reached 2.36 Mb/d in 2010. With the signing of new oil contracts with major international oil companies in 2008 and 2009 to develop oil fields and increase production, Iraqi crude oil increased to 3.5 Mb/d in 2015 and 4.57 Mb/d in 2019. From the above, we conclude that Iraqi oil production has seen a remarkable fluctuation during the period (1970-2020) (Figure 1, Table 1) due to the security and political conditions that Iraq went through during this period. However, it still constitutes a high percentage of the total production of OPEC and the total global production.

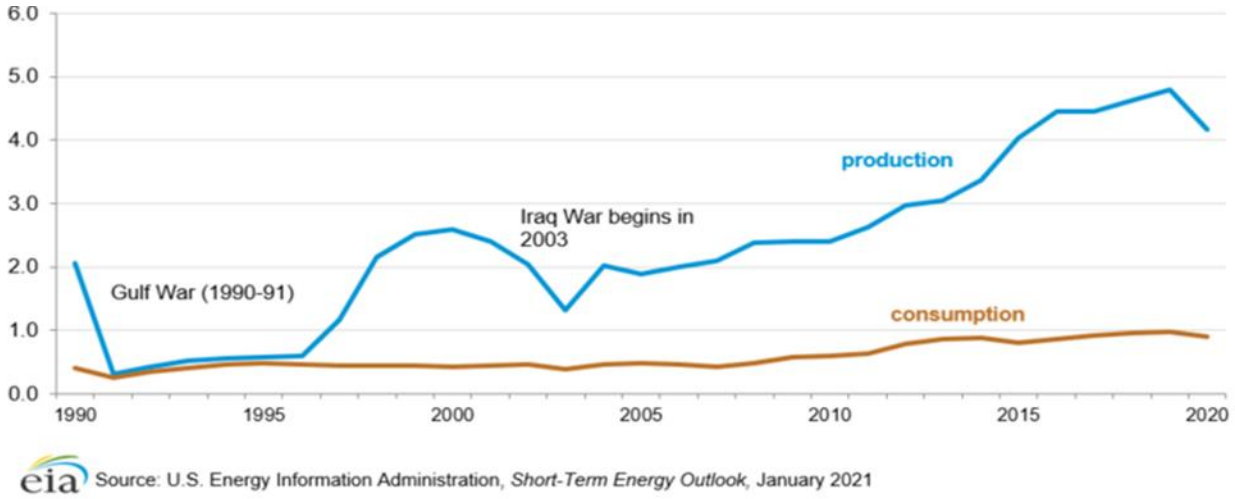
Map1: Iraq's oilfield



Source: IMF, 2022

Figure 1: Iraqi oil production (1990-2020) (Mb/d)

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 33, April, 2024
ISSN: 2749-3628,



Source: EIA, 2021b

Table 1: Iraqi oil production and its importance to OPEC and the world

Year	Iraq's oil production Mb/d	Iraqi oil production / OPEC production %	Iraqi oil production/world production %
1970	1.54	6.64	3.42
1976	2.41	7.96	4.20
1979	3.47	11.39	5.54
1981	0.89	4.04	1.59
1989	2.78	13.60	4.81
1991	0.28	1.26	0.48
1997	1.38	5.43	2.19
2000	2.81	10.12	4.27
2003	1.37	5.13	2.05
2004	1.99	6.73	2.69
2008	2.28	7.10	3.18
2010	2.35	8.80	3.38
2015	3.5	11.3%	4.7%
2020	3,99	15.6%	5.8%

Source: Authors' computation, based on OPEC, 2021

3. IRAQI OIL EXPORTS AND OIL REVENUES

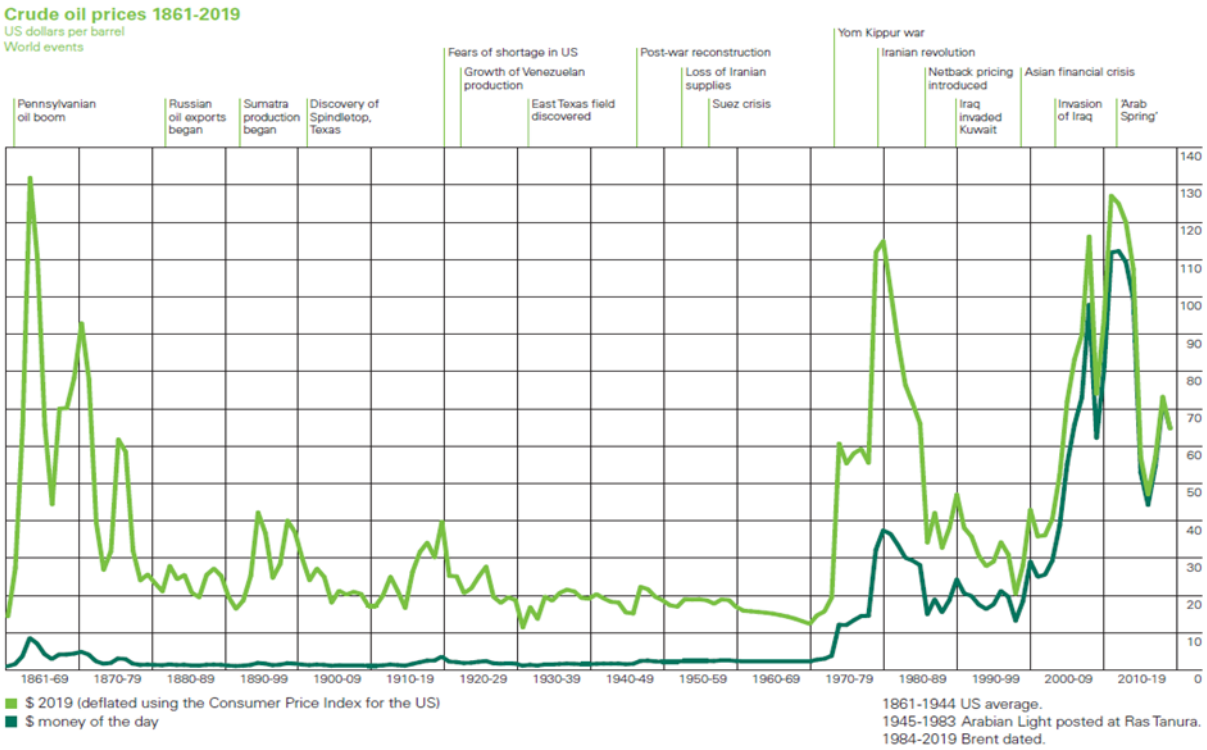
The period (1970–2020) witnessed a large fluctuation in the value of Iraqi oil revenues due to large fluctuations in oil production and exports, on the one hand, and fluctuations in prices, on the other. During the period (1970-1980), the price of a barrel of crude oil nearly tripled between 1973 and 1974 and doubled again more than twice between 1978 and 1980, as the price of a barrel of crude oil rose from $2.1 in 1970 to $28.8 in 1980, (Figure **2)**. The quantity of oil exports also increased from 1.49 Mb/d in 1970 to 3.25 Mb/d in 1979, meaning that the quantity of oil exports doubled more than twice during this period .This increase in the amount of oil exports, on the one hand, and the rise in prices, on the other, led to a significant rise in the value of oil revenues, which rose from $ 79 billion in 1970 to $26.09 billion in 1980, meaning that the value of oil revenues had doubled more than 33 times in 1980 compared to 1970, and the total

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 33, April, 2024
ISSN: 2749-3628,

Iraqi oil revenues during the period (1970-1980) amounted to $96.65 billion.

The increase in oil revenues in this large way at a time when internal economic conditions were not ready to invest in projects as a result of the lack of absorptive investment capacity of the Iraqi economy led to the accumulation of huge and large reserves of foreign exchange, estimated at $40 billion at the end of 1980 (Al-Ali, 2011).

Figure 2: Crude oil prices (1861-2019) ($/ barrel)



Source: BP, 2020

During the period (1981-1990) oil revenues declined significantly because of the decrease in Iraqi oil exports due to the Iran-Iraq conflict, on the one hand, and the decrease in prices, on the other.

The export of Iraqi crude oil deteriorated significantly until it reached 0.70 Mb/d in 1983. Crude oil prices also began to decline due to the policies adopted by the International Energy Agency, which was established in 1974, and whose objective was to control crude oil prices and prevent OPEC from controlling the international oil market. The International Energy Agency obligated its members to create a sufficient strategic stockpile to consume 90 days and encourage investments in alternative energy sources, as well as encourage searches and exploration for oil and gas in areas outside OPEC, especially the North Sea and the coasts of the United States, and these strategies led to a decline in global consumption of crude oil during the 1980s by about 7% annually (El-Baradei, 1992). At the same time, OPEC countries were adopting excess production capacities to keep pace with the increase in demand that prevailed during the 1970s, and this surplus capacity was estimated at 34% of the actual production of OPEC. Therefore, crude oil prices fell until they reached their lowest levels in July 1986, when the price of a barrel of crude oil reached $7. (Atika, 1987). Therefore, oil revenues amounted to $6.90 billion in 1986, then continued increases in the quantities exported from Iraqi crude oil until it reached 2.26 Mb/d in1989, and the value of the revenues for this year reached $11.87 billion, which is the highest annual rate of revenues during the period 1981-1990, while the total revenues during this period amounted to $93.85 billion.

Regarding the period 1991-1996, Iraq was not allowed to export crude oil due to the economic sanctions imposed on it by the United Nations. Implementing the oil-for-food agreement, the embargo was partially lifted on Iraqi oil exports, and Iraq's oil exports rose to 2.13 Mb/d in 1999, which was the highest daily rate of export during the period 1991-2002, and crude oil prices gradually rose until they reached $24.6 per barrel in 2000. Therefore, oil revenues in 2000 were $19.77 billion, which is the highest

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 33, April, 2024
ISSN: 2749-3628,

annual rate of oil revenues during the period 1991-2002, whose total revenues amounted to $72.36 billion.

For the period 2003-2010, oil revenues rose dramatically and rapidly due to the rise in crude oil prices in international markets (Rodhan and Jaaz, 2022), which amounted to $87.9 per barrel in 2008, and therefore oil revenues for this year amounted to $61.11 billion and oil revenues during this period $272.49 billion. Due to the rise in oil prices to more than $100 in 2014 (Rodhan, 2023), oil revenues during the period 2011-2015 amounted to $400 billion and during the period 2016-2020, they amounted to more than $311 billion, while the period 2003-2020 amounted to more than $984 billion (Table 2).

Table 2: Daily average of Iraqi crude oil exports, oil prices, and value of oil exports (1970-2020)

Year/s	Exported quantities Mb/d	Crude oil prices ($ barrel)	The value of oil exports (B$ / year)
1970	1.49	2.1	0.79
1979	3.25	20.1	21.38
1980	2.48	28.8	26.09
1970-1980			96.65
1983	0.70	30.1	7.18
1986	1.39	13.7	6.90
1989	2.26	16.7	11.87
1981-1990			93.85
1999	2.13	15.9	12.10
2000	2.04	24.6	19.77
1991-2002			72.36
2004	1.45	31.3	17.75
2006	1.47	55.6	30.46
2008	1.85	87.9	61.11
2009	1.90	59.1	41.66
2010	1.89	75.6	51.11
2003-2010			272.49
2015	3.00	47.9	49.2
2011-2015			400
2020	3,43	41.55	44,29
2016-2020			311.89
1970-2002			262.86
2003-2020			984.38
1970-2020			1247.25

Source: Authors' computation, based on OPEC, 2021; OPEC, 2005

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 33, April, 2024
ISSN: 2749-3628,

4. THE IMPACT OF OIL PRICE FLUCTUATIONS ON MACROECONOMIC VARIABLES IN IRAQ

4.1 IMPACT ON GDP

Oil revenues play a crucial role in the formation of Iraq's GDP, as they are the backbone of it. Therefore, fluctuations in the production and export of Iraqi crude oil, on the one hand, and prices in the international oil markets, on the other, have had a significant impact on Iraq's GDP. The relative importance of the contribution of oil revenues in the formation of the GDP in Iraq, as shown in Table 3, steadily increased during the 1970s of the last century due to the increase in oil revenues resulting from the nationalization of Iraqi oil, as well as the increase in prices, production and exports of oil.

The contribution of oil revenues to the formation of the GDP nearly doubled by two and a half times between 1970 and 1974, as it rose from 21.9% in 1970 to 50.3% in 1974 and then increased to 60.84% in 1980, while the contribution of oil revenues in the formation of GDP during 1970-1980 was 46.9%. As a result of the decrease in the volume of oil exports due to the onset of the Iran-Iraq war and the significant deterioration in the prices of crude oil in the international oil markets, the contribution of oil revenues in the formation of the GDP during the 1980s decreased significantly until it reached 17.3% in 1986, then increased with the increase in the volume of exports, and the recovery of oil price in international markets reached 71.0% in 1990, while the contribution of oil revenues in the formation of the GDP during the period (1981-1990) was 26.7%.

After the second Gulf War, and due to the economic sanctions that were taken against Iraq, the GDP decreased significantly until it reached, for the years 1994 and 1995 about 18% of the GDP for the year 1989.

Similarly, the contribution of oil revenues to the formation of the GDP decreased as a result of the decline in exports, which were restricted to the export of limited amounts of oil to Jordan, as well as the quantities smuggled into neighboring countries and the government's collection of revenues from domestic sales of oil derivatives. On average, the contribution of oil revenues to the GDP for the period 1990-1996 did not exceed 8.4%.

After the implementation of the oil-for-food agreement in 1997, the contribution of oil revenues to the formation of the GDP gradually increased until it reached its highest level in 2000, reaching 83.33%, which is the highest relative contribution of crude oil to the formation of the GDP during the study period. The contribution of oil revenues to the formation of GDP during the period 1997-2002 reached 60.9%.

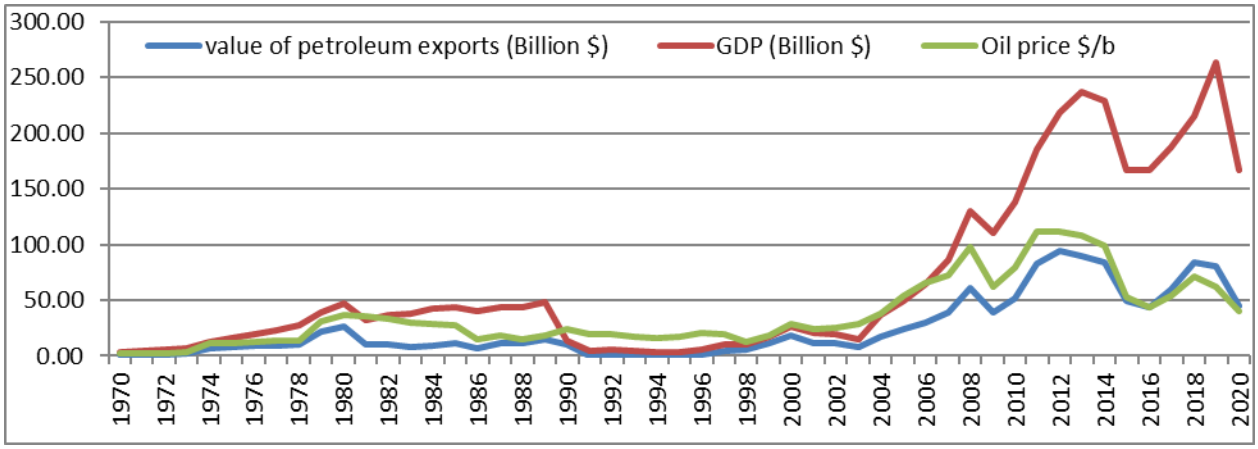
In 2003, GDP decreased by 33% from what it was in 2002 as a result of a third decrease in Iraqi oil production. This shows the extent to which the gross domestic product depends on oil revenues. In 2008, the contribution rate reached 46.9%, then decreased to 37.2% in 2010. This decrease in the contribution rate does not indicate an improvement in the output of other sectors, such as the industrial and agricultural sectors, which led to an increase in the percentage of their contribution to the formation of the GDP, accompanied by a decrease in the contribution of oil revenues. However, this is due to the decrease in oil prices in international markets, which fell from $87.9 in 2008 to $75.6 in 2009. While the contribution of oil revenues to the gross domestic product during 2003-2010 was 42.8%, in 2012, the contribution of oil revenues amounted to more than 43%, then gradually decreased to 26.2% and 26.5% in 2015 and 2020, respectively, due to the drop in the oil price. During the period 1970-2020, oil revenues amounted to $1247.25 billion and constituted 35.5% of the total Iraqi GDP. (Table 3)

In general, the Iraqi GDP was characterized by a high percentage of the contribution of oil revenues in its formation, and a decrease in the percentage of the contribution of other sectors, especially the manufacturing industry and agriculture, a problem that the Iraqi economy has been suffering from since the 1970s (Saadoun, 2012). This high percentage of the contribution of oil revenues to the structure of the Iraqi economy reflects the unilateral character of the Iraqi rentier economy and the extent of its excessive dependence on oil revenues, which made this economy linked to international markets and exposed to the risks of sharp fluctuations in prices and quantities of exported oil and indicates the failure of economic diversification policies (Rodhan and Al-Assadi, 2014).

Therefore, the Iraqi government must diversify the Iraqi economy and increase the contribution of other sectors to the formation of the GDP to avoid the fluctuations to which oil revenues are exposed and the negative effects it produces on economic life, preserving oil wealth and working to extend its life as much as possible. On the other hand, to protect the rights of future generations to this wealth and not to leave the Iraqi economy revolving in the vicious circle of fluctuations in the international oil markets. Figure **3** shows the relationship between Iraq's GDP, oil revenues, and oil prices.

Figure 3: The relationship between Iraq's GDP, oil revenues and oil prices (1970-2020)

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 33, April, 2024
ISSN: 2749-3628,



Source: Authors' computation, based on OPEC, 2021

Table 3: The Contribution of Oil Revenues to the Iraqi GDP (1970-2020)

Year/s	GDP Billion$	Value of petroleum exports in Billion $	Share of oil revenues to GDP
1970	3.59	0.788	21.9%
1974	12.99	6.54	50.3%
1980	47.56	26.1	54.9%
1970-1980	206.20	96.66	46.9%
1986	39.99	6.91	17.3%
1990	13.98	9.93	71.0%
1981-1990	383.09	102.2	26.7%
1991-1996	27.25	2.29	8.4%
2000	26.01	18.32	70.4%
1997-2002	104.33	63.53	60.9%
2008	130.21	61.12	46.9%
2010	138.52	51.59	37.2%
2003-2010	632.49	270.56	42.8%
2012	218.03	94.09	43.2%
2011-2014	868.64	350.81	40.4%
2015	166.82	49.21	29.5%
2016	166.60	43.68	26.2%
2020	167.04	44.29	26.5%
2015-2020	1166.54	316.87	27.2%
2003-2020	2667.667	984.38	35.2%
1970-2020	3388.54	1247.25	35.5%

Source: Authors' computation, based on OPEC, 2021

4.2 IMPACT ON GOVERNMENT REVENUES

Oil revenues in Iraq are the most important, if not the only, source in the formation of government revenues in Iraq, especially after 2003, as the contribution of oil revenues to total government revenues increased dramatically and unprecedentedly as a result of the increase in oil exports on the one hand and the significant increase in crude oil prices in international markets on the other hand until this percentage reached 99% in 2004 and then decreased slightly in 2006, reaching 96% and formed 97% for the years 2008 and 2010, respectively (Figure 4).

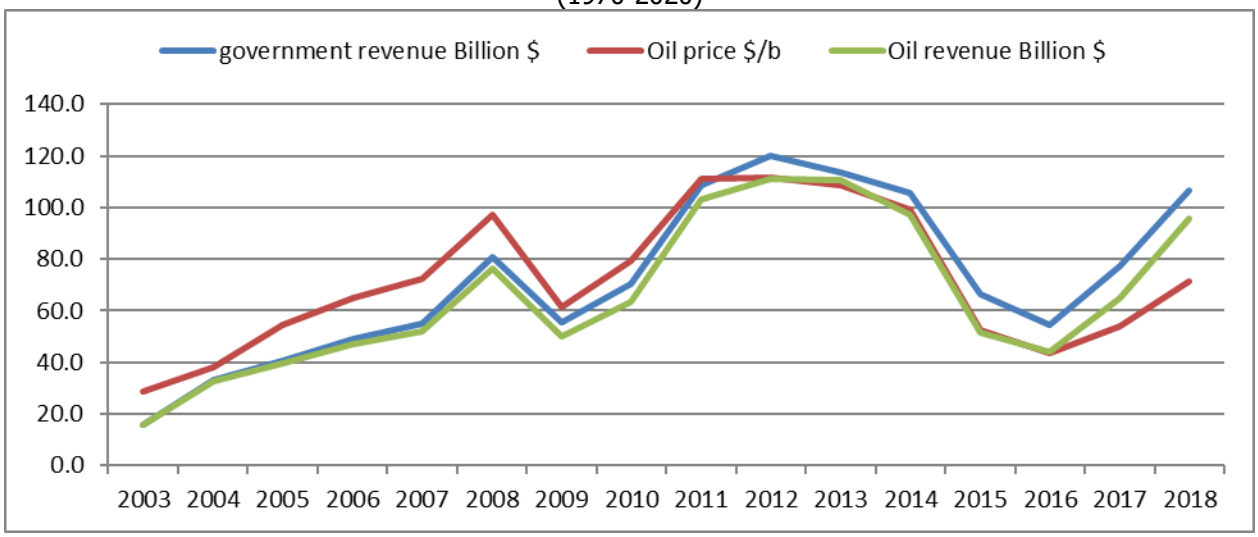
The great development in oil revenues reflected positively on government revenues, as the rise in oil revenues from

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 33, April, 2024
ISSN: 2749-3628,

$15.7 billion in 2003 to $111.3 and $95.6 billion for the years 2012 and 2018, respectively, led to an increase in government revenues from $16 billion in 2003 to 113.8 and 106.6 billion dollars for the years 2012 and 2018, respectively .The contribution of oil revenues to the formation of government revenues, despite their fluctuation during this period, was characterised as, in general, more than 94% of the total government revenues.

These high rates are a clear indication that government revenues are contingent on an external factor represented in global oil markets, which are markets that Iraq cannot control, leaving negative effects on overall economic movement in Iraq. Therefore, slight fluctuations in oil prices would have a great effect on the Iraqi economy (Khadduri, 2014). For example, when oil prices lost 60% of their value between 2014 and 2016, the government was forced to reduce a percentage of wages in the public sector and reduce current spending as well as investment spending, including stopping the establishment of new projects and stopping financing projects that were under construction (Essam, 2016). And when prices again lost about 40% of their value between 2018 and 2020, there was no solution for the government, except to devalue the local currency by more than 20%. The solutions that Iraqi governments take when oil prices drop are reactions that are not well studied scientifically. These solutions usually have significant negative economic and social impacts. What complicates the problem is that a large number of people depend on the government for their income. The number of government employees has reached 3 million, 3.25 million receive pension rights, and 1.8 million receive financial support from the government as social security. OPEC's second largest producer depends on oil revenue to meet 90% of government expenditure, and a big burden for the government is the wage bill for public servants, which is approximately $60 billion annually.(Fitch Rating, 2021)

Figure 4: The relationship between Iraq's government revenues, oil revenues and oil prices. (1970-2020)



Source: Authors' computation, based on OPEC, 2021

4.3 IMPACT ON TOTAL EXPORT

Oil exports make a significant contribution to total Iraqi exports and the percentage of their contribution varies from year to year, depending on prices on international oil markets. Oil exports constituted 71.1% of total exports, then increased to 98.9% and 99.1% for the years 1974 and 1979, respectively, while oil exports constituted 98.0% of total exports during the period 1970-1980 (Table 4). For 1981-1990, despite the drop in oil exports significantly as a result of the conditions of the Iraqi-Iranian war and the collapse of oil prices in international markets, oil exports accounted for 98% of the total exports, which is the same percentage for the period 1970-1980, and the reason for this is due to the decrease

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 33, April, 2024
ISSN: 2749-3628,

in total exports, of which oil exports constitute the bulk, in addition to a decrease in non-oil exports as well.

After the events of 1991 and their consequences, the values of oil exports decreased significantly, but they still constituted 93% of the total exports. The situation did not differ much during the period 1997-2020, as oil exports constituted 96% of total exports.

From the above, we conclude that oil exports remained dominant over total exports, under normal or unusual conditions, as the change in total exports corresponds to the change in oil prices in terms of rise or fall. This is a clear indication that the international trade structure is highly dependent on the export of one commodity, oil. Exports focus on this commodity and the decline in exports of other commodities. Therefore, economic policymakers must work to diversify the structure of exports instead of relying on oil exports only to avoid shocks that can result from oil price fluctuations.

4.4 IMPACT ON TRADE BALANCE

The structure of the trade balance in any country reflects the reality and nature of the economic conditions that prevail there, as there is a close relationship between the structure of the national economy and the structure of the trade balance. Whenever the economic structure develops in its basic components, this is positively reflected in the structure of the trade balance. Therefore, the trade balance represents a mirror that reflects the level of development of the production structure of the national economy. Because the Iraqi economy is linked to oil revenues and their relative importance in the formation of GDP, this has been reflected in the international trade structure of Iraq.

As noted in Table 4, the trade balance in Iraq enjoyed a surplus during the 1970-1980 period weighing $57.90 billion, but it turned into a deficit excluding oil exports, which amounted to $38.74 billion. The period 1981-1990 saw a deficit of $22.93 billion with oil and the deficit rose to $116.79 billion, excluding oil. The reason for the deficit in the presence of oil and its exclusion during this period is due to the decline in oil revenues as a result of the decrease in oil prices, on the one hand, and the increase in military imports, on the other. The trade balance during the period 1991-1996 also recorded a deficit with the presence of oil, excluding oil due to the economic embargo imposed on Iraq and the suspension of Iraqi crude oil exports. During the period 1997-,2002 there was a surplus in the presence of the oil sector amounting to $12.18 billion. The reason for the existence of this surplus is due to the implementation of the oil-for-food agreement and the double of oil exports. However, this surplus turned into a deficit when oil was excluded, as the deficit reached $ 57.36 billion. The trade balance achieved a surplus during the period 2003-2010 that amounted to $ 92.0 billion, and turned into a deficit excluding oil, which amounted to $217.73 billion. The same thing was repeated for the period 2011-2020, as the surplus amounted to $160.47 billion with the presence of oil and turned into a deficit of $603.08 billion without oil. Figure 5 shows the relationship between oil revenues, the value of exports and imports, and the trade balance with and without oil.

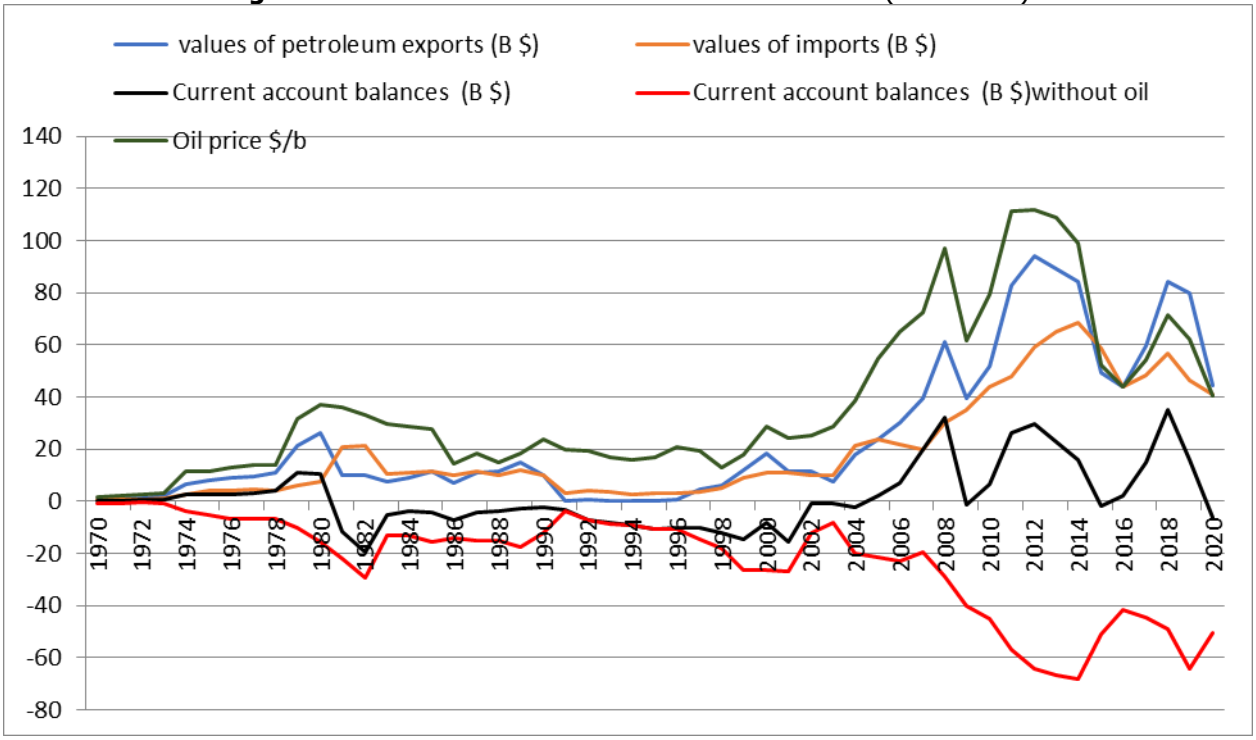
Table 4: The value of oil exports and total exports in Iraq (1970-2020)

Years	Value of petroleum exports in B$	Value of exports in B$	Oil exports/ total exports%	Trade balance with Oil revenues	Trade balance without oil revenues
1970	0.788	1.09	71.1		
1974	6.53	6.60	98.9		
1979	21.38	21.57	99.1		
1980-1970	96.66	98.53	98	57.90	-38.75
1990-1981	102.02	105.26	98	-22.9	-116.79
1996-1991	2.29	3.03	93	0.39	-0.60
2002-1997	63.53	72.51	96	12.18	-57.36
2010-2003	270.56	280.51	97	92.0	-217.73
2011-2020	667.68	702.78	95	160.47	-603.08

Source: Authors' computation, based on OPEC, 2021

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 33, April, 2024
ISSN: 2749-3628,

Figure 5: Trade balance with and without oil revenues (1970-2020)



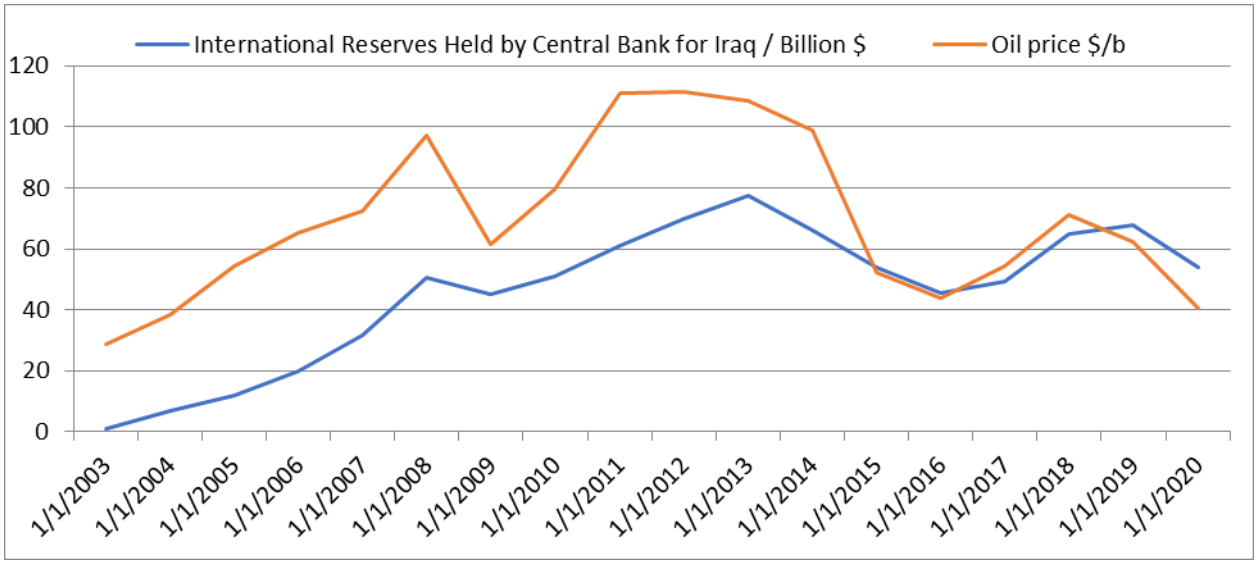
Source: Authors' computation, based on OPEC, 2021

4.5 IMPACT ON INTERNATIONAL RESERVES HELD BY CENTRAL BANK

The international reserves held by the Central Bank of Iraq are greatly affected by fluctuations in oil prices. With the increase in oil prices from $15.73 in 2003 to $97.26 in 2008, international reserves rose from $1.1 billion to $50.4 billion during the same period. With the decline in prices to$ 61.67 in 2009, the international reserve fell to $44.6 billion, and then with the increase in prices to $108.66 in 2013, the international reserve rose to $77.5 billion, but it soon declined to$ 45.5 billion in 2016 due to the decline in oil prices to $43.3, then it increased to $68 billion in 2019, and then decreased to $54.1 in 2020. Thus, the foreign reserve held by the Central Bank of Iraq reflects the movement of oil prices, as shown in Figure 6.

Figure 6: The relationship between international reserves held by the Central Bank for Iraq and oil price fluctuations (2003-2020)

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 33, April, 2024
ISSN: 2749-3628,



Source: Authors' computation, based on OPEC, 2021; FRED, 2022

5. THE RELATIONSHIP BETWEEN FLUCTUATIONS IN OIL PRICES AND DUTCH DISEASE

The Dutch disease phenomenon is summarized by the sudden rise in income resulting from the discovery of huge natural resources, the significant rise in the prices of natural resources, or the large cash flow that will lead to severe effects on the productive sectors, especially agricultural and industrial activities, which leads to their deterioration and a decline in their production. The important question now is; does Iraq suffer from the symptoms of the Dutch disease?

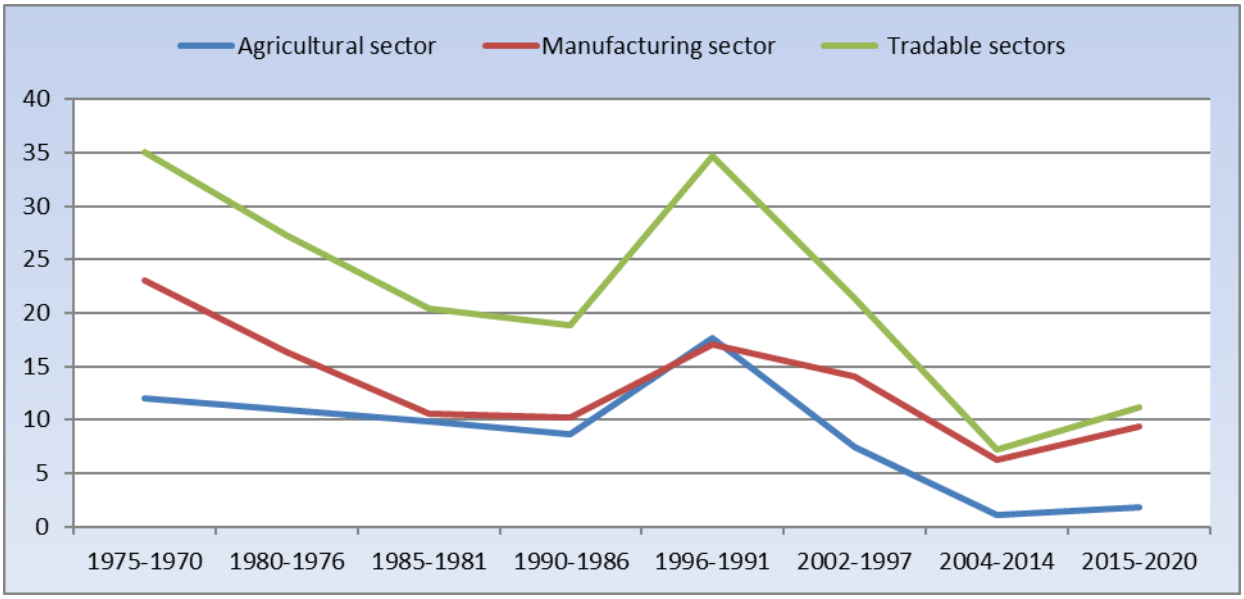
This question can be answered by the internal exchange rate index. This indicator shows the increase in the prices of non-tradable goods and services compared to the prices of tradable goods and services. It can be found by dividing the consumer price index for non-tradable goods and services (housing services, social and personal development services) by the consumer price index tradable goods and services (food, drinks, tobacco, clothing). If the value of the indicator is greater than the correct one, it indicates that the economy is infected with the Dutch disease and vice versa . According to this indicator, the Dutch disease has started to appear in the Iraqi economy since 1976 (Al-Shammari, 2010). As a result of the increase in oil prices.

The infection of the Iraqi economy with Dutch disease had an important negative influence on the absorptive capacity of investment, as the repercussions of Dutch disease led to an increase in production costs in the tradable sectors (the agricultural sector, the manufacturing sector), and then the prices of its products increased. As a result of its exposure to foreign competition, this led to the deterioration of its exports and its replacement locally by importing from abroad, which led to a reluctance to invest in these sectors and then to a decrease in the value of the investment in them and a decrease in the absorptive capacity of investment in the Iraqi economy in general.

Except for the period 1991-1997, during which Iraq was economically isolated and oil revenues were absent, the entire period from 1970 to 2020 was marked by the emergence of the Dutch disease and its severity varied according to oil prices on international markets. Figure **7** shows the effects of the Dutch disease on investment in the agricultural and manufacturing industries.

Figure 7: Share of tradeable sectors of total investments in Iraq (1970-2020)

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 33, April, 2024
ISSN: 2749-3628,



Source: Authors' computation, based on Central Statistics Authority, 2020

6. CONCLUSIONS

The period 1970-2010 was marked by great fluctuations in the value of Iraqi oil revenues due to large fluctuations in the amount of oil production and exports on the one hand and fluctuations in crude oil prices in the international oil markets on the other hand. Iraq is the second largest crude oil producer in OPEC. And globally, in 2019 Iraq was the fourth largest exporter and producer of oil with production reaching 4.57 Mb/d, with a relative importance of 15.6% of the total production of OPEC and 6.1% of the total global production. Iraq holds the fifth largest proven crude oil in the world with reserves of 145 billion barrels, representing 17% of proved reserves in the Middle East, 11.8% of OPEC reserves and 9.4 % of global reserves.

With the increase in global oil prices, the Iraqi economy became more dependent on oil revenues. For example, prices increased by 15 times between 1970-1980. Therefore, oil revenues multiplied 33 times during the same period. This led to an increasing dependence on oil revenues over time. Therefore, oil has been of strategic importance to the Iraqi economy since the beginning of the 1970s. Presently, Iraq depends primarily on oil revenues, which represent approximately 98% of its total exports and more than 90% of the state's general budget revenues. Therefore, slight oil price fluctuations would have a great effect on the Iraqi economy.

GDP, for example, rose from $3.59 billion in 1970 to $47.56 billion in 1980, then decreased to $ 13.98 billion in 1990, then rose to $26.1 billion in 2000, then rose to $236.4 billion in 2013, then decreased to $167 billion in 2020. These fluctuations in the gross domestic product are mainly due to fluctuations in the oil price. The same is the case with government revenues that have been subjected to continuous fluctuations. For example, government revenues decreased by more than half in 2016 than they were in 2012 as a result of the drop in oil prices from $111.3 to $44.3 per barrel for the two years above. The same thing happened with total exports and international reserves.

On the other hand, the Dutch disease in the Iraqi economy has been linked to the movement of oil revenues, the higher the value of oil revenues, the worse the Dutch disease worsens, and when the value of oil revenues decreases, the effects of Dutch disease disappear. Certainly, this will lead to a decrease in the value of investment for the national economy and as a result a decrease in GDP and a rise in unemployment rates.

Finally, practical solutions must be found to reduce the dependence of the Iraqi economy on oil revenues, which fluctuate with the fluctuation of oil prices. Without it, the Iraqi economy will suffer from instability and constant fluctuations.

REFERENCES

1. Al-Ali, A. (2011), *The Oil Economy and Oil Investment in Iraq*, Baghdad, Bayt al-Ḥikma.
2. Al-Baradi, M. (1992), *The Global Oil Market and the Economic Variables Affecting Arab Oil in the 1990s*, Cairo, Institute of Arab Research and Studies.

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 33, April, 2024
ISSN: 2749-3628,

3. Al-Shammari, M. (2010), *Diagnosing the Dutch disease and the elements of reforming the rentier economy in Iraq*. Al-Ghari Journal of Economic and Administrative Sciences, 3(15), 32-65.
4. Atika, A. (1987), *Oil and Arab Interests (1987-1972).* Kuwait, Organization of Arab Petroleum Exporting Countries (OAPEC), 14(34), 227-252.
5. Bp. (2020), Statistical Review of World Energy, 69th edition, p26.
6. Central Statistics Authority, (2020), Directorate of Indices, Baghdad, Indices ,2020, pp6-9.
7. CSO. (2020), Central Statistical Organization, Annual Statistical Abstract, Available from: http://cosit.gov.iq/ar/ , [Last accessed on 2023 April 22].
8. Essam, M. (2016), *The Economic Effects of Low Oil Prices on the Iraqi Economy*. Babylon University Journal, 8(24), 213-229.
9. Fitch Rating, (2021): Iraq Fiscal Reforms Key to Curbing Forex Reserve Decline, Available from: https://www.fitchratings.com/research/sovereigns/iraq-fiscal-reforms-key-to-curbing-forex-reserve-decline-09-11-2020, [Last accessed on 2023 Jan 23].
10. FRED, (2022), Gross International Reserves Held by Central Bank for Iraq, Available from: https://fred.stlouisfed.org/series/IRQFAFARUSD, [Last accessed on 2023 Feb 12].
11. IMF, (2022, IMF elibrary, Available from: https://www.elibrary.imf.org/view/journals/002/2015/236/article-A001-en.xml. [Last accessed on 2023March 07].
12. Khadduri, W. (2014),The Fall in Oil Prices: A Dispute Over Market Shares, Iraqi Economists Network, Available from: : http://iraqieconomists.net/. [Last accessed on 2023May 17].
13. Rodhan, M., Al-Assadi, Y. (2014), *Analysis of the impact of the Dutch disease on the absorptive capacity of the Iraqi economy for the period 1970-2010*. Journal of Economic Sciences, University of Basra, 10(37), 33-56.
14. Rodhan, M.A., Jaaz, A.H. (2022): Box-Jenkins Modelling and Forecasting of the WTI Crude Oil. In: Abd-Alhameed, R., Al-Hussaibi, W., Rana, Z., (ed.), Proceedings of 2nd International Multi-Disciplinary Conference Theme: Integrated Sciences and Technologies, IMDC-IST 2021, 7-9 September 2021,Sakarya, Turkey, Ghent, Belgium: European Alliance for Innovation (EAI), 1-13. http://dx.doi.org/10.4108/eai.7-9-2021.2314841.
15. Rodhan, M.A. (2023), The Effect of US Shale Oil Production on Local and International Oil Markets. International Journal of Energy Economics and Policy, 13(4), 433–443. https://doi.org/10.32479/ijeep.14455
16. OPEC. (2005), Annual Statistical Bulletin, Vienna, Austria.
17. OPEC. (2011), Annual Statistical Bulletin, Vienna, Austria.
18. OPEC. (2020), Annual Statistical Bulletin, Vienna, Austria.
19. -OPEC. (2021), Comprehensive and interactive time-series data. Available from: https://asb.opec.org/. [Last accessed on 2023March 18].
20. -Saadoun, S. **(**2012). *Trends of oil revenues in Iraq after 2003*. Journal of Economic and Administrative Sciences, University of Baghdad, 18(68), 266-282.
21. SOMO, (2021), Iraq's exports of crude oil during October, Available from: https://somooil.gov.iq/exports, [Last accessed on 2023May 10].
22. EIA. (2021a), Country Analysis Executive Summary: Iraq, Available from: https://www.eia.gov/international/analysis/country/IRQ,[Last accessed on 2023May 10].
23. EIA. (2021b), Short-Term Energy Outlook, Available from: https://www.eia.gov/international/analysis/country/IRQ,[Last accessed on 2023May 10].