ANALYSIS OF THE RELATIONSHIP BETWEEN CRUDE OIL PRICES AND ECONOMIC PERFORMANCE INDICATORS IN IRAQ FOR THE PERIOD (2004-2021)

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Abstract:
Global economies are significantly affected by the volatility of crude oil prices. The economies of oil-producing countries may thrive when crude oil prices are high or stable within a range that achieves their desired goals, driving development and accelerating economic growth. This is achieved through targeted expansionary policies that promote local and foreign investments in infrastructure development. Conversely, the opposite occurs when prices decline. The study found that sharp fluctuations in oil prices lead to varying economic and social impacts, affecting economic growth, unemployment rates, and inflation. It also recommended the possibility of achieving sustainable economic growth by the government exerting more efforts in diversifying income sources, reducing heavy dependence on oil, and enhancing adaptability to price fluctuations.
***Keywords**: (crude oil price volatility, GDP, unemployment rates, and inflation in Iraq).*

INTRODUCTION

Crude oil holds significant strategic importance due to its impact on the global economies. It is considered one of the main sources of income for many oil-producing countries, particularly rentier states whose economies heavily rely on oil exports. Consequently, fluctuations in oil prices can greatly affect the strength of global economies, leading to economic crises manifested through the responsiveness of real economic variables, such as economic growth, as well as creating challenges like unemployment and inflation.

Research Significance:

The significance of this research lies in its discussion of an important subject that derives its importance from the commodity of crude oil. It is one of the main sources of income for many producing countries, including Iraq. Additionally, the importance of the research lies in analysing the nature of the relationship between crude oil prices and economic performance indicators within the context of Iraq's rentier economy.

Research Problem:

The dependence on oil has made the Iraqi economy rentier, subject to the fluctuations of crude oil prices in the global market. The research problem can be formulated in the following question: Is there a relationship between crude oil prices and economic performance indicators, and what is the nature of this relationship?

Research Objective:

The research aims to analyse the relationship between fluctuations in crude oil prices and economic performance indicators, represented by GDP, unemployment rates, and inflation.

Research Hypothesis:

The research is based on the hypothesis that there is a relationship between crude oil prices and economic performance indicators in Iraq, and that fluctuations in crude oil prices will have a (positive or negative) impact on these indicators.

Research Methodology:

The study adopts an analytical and descriptive approach to analyse the relationship between crude oil prices and economic performance indicators, aiming to achieve more realistic and logical results.

Research Structure:

To meet the research requirements and achieve its objectives in light of its hypothesis, it is divided into three main sections as follows:

1. The nature of the Iraqi economy.
2. Economic growth indicators.
3. Analysis of the relationship between crude oil prices and economic performance indicators.

First Section: Nature of the Iraqi Economy

The Iraqi economy is a rentier economy, relying entirely on oil revenues to meet its public expenditure needs, given the low contribution of other economic sectors due to mismanagement and lack of planning (Al-Heeti, 2010, p. 10). The absolute dependence on rent has led the state to view oil revenues as a continuous and regular external gift, with a lack of productive linkages between the oil sector, which accounts for more than 95% of the general budget revenues, and the low productivity of other sectors (Shendi, 2011, p. 26).

Observers of the Iraqi affairs can perceive that the Iraqi economy has suffered significantly since 2003 and onwards due to the war led by the United States on Iraq, resulting in the destruction of public institutions and key infrastructure in the country. Additionally, state institutions have been subjected to looting and pillaging, along with political circumstances characterized by successive governments, worsening further after the changes that occurred globally starting with the Gulf War, followed by the global financial crisis in mid-2008. Furthermore, the activities of terrorist organizations in 2014, in which Iraq had a significant share, aimed at controlling and manipulating the political and economic resources in some Iraqi provinces. Salih (2022) discussed this in further detail. The crisis has been further exacerbated by the COVID-19 pandemic, resulting in global economic repercussions manifested through the slowdown in global economic activity, disruption of productive sectors, declining economic growth rates, especially in rentier countries heavily reliant on a single resource. These events have led to several structural imbalances, such as imbalances in the output structure, general budget structure, balance of payments structure, monetary imbalances, and inflationary pressures (Younis, 2012, p. 116).

The economic activity or gross domestic product (GDP) is divided into the following sectors (Zaini, 2009, p. 97):

1. Commodity sector: includes the extractive industries, agriculture, fishing, forestry, construction, and the water, electricity, and gas sector.
2. Service sector: includes trade, restaurants, hotels, transportation, communication, storage, finance, insurance, and banking sector.
3. Distribution sector: includes the housing sector and government services such as general administration, defense, medical, and healthcare services, among others.

Table (1): Sectors Constituting Gross Domestic Product at Current Prices (Million dollars)

sectors of economic activity in Iraq	2004	2010	2016	2021*
commodity sector	------	------	------	------
Agriculture, hunting and forestry	3,191	7,294	8,639	10,477
extractive industries	31,319	62,643	51,672	92,880
Transformative Industries	651	3,300	3,642	4,008
construction	232	5,063	9,431	4,887
Electricity, gas and water	62	1,668	4,427	5,619
the total commodity sector	35,456	**79,967**	**77,811**	117,872
Contribution of the commodity sector to the gross product%	86%	**55.5%**	**46%**	56.5%
1- Distributive sector	------	------	------	------
Trade, restaurants and hotels	2,108	12,586	18,746	18,916

Transportation and storage	2,612	16,357	13,763	20,557
Finance, insurance and banking	44	1,781	1,425	1,482
The total distribution sector	4,764	**30,725**	**33,934**	40,955
Contribution of the distribution sector to the gross product%	11.5%	**21.2%**	**20%**	20%
2- Service sector	------	------	------	------
housing	207	11,042	16,542	11,597
Government services	807	20,962	34,747	30,019
Other services	0	2,171	5,521	6,901
The total service sector	1,014	**34,175**	**56,811**	48,517
Contribution of the service sector to the gross product %	% 2.5	**23.3%**	**34%**	23.5%
total output at cost	41,234	**144,867**	**168,556**	207,343

Sources:

- Compiled by the researcher based on data provided in…

-Arab Monetary Fund, Arab Economic Report, Statistical Appendices, Various editions, Different years.

The above table (1) highlights the contribution of major sectors to economic activity in the gross domestic product (GDP). In the year 2004, the GDP at cost amounted to 41,234 million dollars, with the commodity sector accounting for approximately 86% of the total output. As for the distribution and service sectors, their contributions were approximately 2.5% and 11.5% of the total output, respectively. In the year 2010, the size of the GDP at cost increased to 144,867 million dollars due to successive increases in the three sectors, reaching 55.5%, 23.3%, and 21.2% of the total output, respectively. The upward trend in GDP continued in 2016, reaching 168,556 million dollars, mainly due to the increased contribution of the government services sector within the service sector, accounting for 34%, the highest percentage recorded in that year compared to previous years, while the contributions of other sectors remained stable. The Gross Domestic Product continued to increase in 2021, reaching 207,343 million dollars, the highest GDP recorded by Iraq in recent years, primarily due to the increased contributions of the three sectors. The commodity sector accounted for 56.5%, the highest percentage in comparison to previous years, driven by the increased contribution of the extractive sector within the commodity sector, resulting from the global economic recovery following the COVID-19 crisis and increased demand for oil. As for the distribution sector, its contribution reached 20%, and the service sector accounted for 23.5% of the GDP at cost.

Second Topic: Indicators of Economic Growth

Economic growth is considered one of the primary objectives pursued by governments and desired by societies, as it represents the material outcome of economic efforts. It is also one of the key indicators of economic performance, as it is linked to a set of essential factors within society that serve as the conducive environment for its development. Additionally, economic growth is one of the necessary conditions for improving the living standards of communities. Its concept prevailed when the world adopted the idea of connecting knowledge with technology, aiming to optimize the utilization of natural resources to meet human needs (Khushaib, 2022). This idea became the main and fundamental reason for economic growth. This reality was further reinforced in the field of energy and its sources, as it impacted and was influenced by economic growth. The concept of integrating technology based on knowledge only emerged after the utilization of energy sources, ranging from steam power to nuclear power (Kuznets, 1980, p. 157).

The concept of economic growth is defined as “the positive change in the level of goods and services over a specific period, measured by comparing the percentage growth of the gross

domestic product in the current year with the percentage of the previous year." (Livic, 2015, p. 55). Alternatively, it refers to continuous increases in real income over the long term, where such persistent increases in income are considered economic growth in all circumstances. (Al-Katib, 2013, p. 327).

Some of its key indicators include:

Firstly: Gross Domestic Product (GDP)

The Gross Domestic Product (GDP) refers to the "value of final goods and services (fully manufactured) produced within the geographic area of a country during a typically one-year period, excluding the service fee or value added by all units of production in various sectors of the economy such as industry, agriculture, etc." (Samuelson, 2006, p. 451). It also signifies the "total value of output of goods and services, excluding the value of intermediate goods, in commodity and service requirements.". GDP is considered an important economic indicator due to its use as the primary measure of economic growth and development. Additionally, it is taken into consideration when formulating economic policy decisions and determining key economic goals in a country. (Al-Shammari, 2018, p. 38).

Secondly: Per Capita GDP

The per capita share of real GDP is one of the significant economic indicators that reflect the overall level of living standards for individuals. It refers to the GDP divided by the total population and is a crucial measure in determining the level of economic growth within a country (Al-Shabibi, 2008, p. 25). However, despite being one of the indicators, it may not necessarily represent the true goals of development, which involve improving individual living standards. In some countries, this measure may increase without being accompanied by real improvement in the living standards of individuals. Nevertheless, development literature has focused on this indicator as one of the developmental measures that reflect the economic and social characteristics of a country (Attiya, 2003, p. 11).

Third Section: Analysing the Relationship between Oil Prices and Economic Performance:

Firstly, analysing the relationship between crude oil prices and economic growth is of paramount importance. Crude oil prices are one of the key factors that have a significant impact on the economic growth of countries, particularly those heavily reliant on oil resources. This is because crude oil is considered the vital and fundamental fuel for economic activities encompassing various sectors such as commodities, distribution, and services. Consequently, any fluctuations in crude oil prices can potentially affect the economic activities comprising the Gross Domestic Product.

Table (2) Crude oil prices and economic growth

The year	The average price of crude oil within the OPEC basket of crudes (dollars) (1)	Annual growth rate of crude oil prices % (2)	Gross domestic product at current prices (Million dinars) (3)	Gross domestic product growth rate at current prices % (4)	Average per capita gross domestic product at current prices (Million dinars) (5)
2004	36.1	_____	53,235,359	_____	2.00
2005	50.6	40.1	73,533,599	38.1	3.60
2006	61.1	20.7	95,587,955	29.9	3.30
2007	69.1	13.0	111,455,813	16.6	3.80
2008	94.5	36.7	157,026,062	40.8	5.10
2009	61.1	(35.3)	130,643,200	(2.6)	4.10
2010	77.45	26.7	162,064,566	24.0	5.00

2011	107.46	38.7	217,327,107	34.0	6.50
2012	109.45	1.8	254,225,491	16.9	7.40
2013	105.87	(3.2)	273,857,529	7.7	7.80
2014	96.29	(9.0)	266,332,655	(2.7)	7.60
2015	49.49	(48.6)	194,680,972	(26.9)	5.50
2016	40.76	(17.6)	186,542,703	(4.1)	5.40
2017	52.43	28.6	207,621,134	11.2	6.00
2018	69.78	33.0	249,574,276	20.2	7.10
2019	64.04	(8.2)	254,443,953	1.9	7.10
2020	41.47	(35.2)	215,661,517	(15.2)	5.40
2021	69.89	68.5	301,152,819	39.6	7.30

Sources:
was prepared by the researcher based on the data contained in...
-The Central Bank of Iraq, the statistical website, available at the following link: https://cbiraq.org
-OPEC, Home, Data/Graphs, OPEC Basket price, Available at the link:
https://www.opec.org/opec_web/en/data_graphs/40.htm
Note: The numbers in brackets are negative (-).

The Gross Domestic Product (GDP) in Iraq has experienced fluctuations during the period (2021-2004) as observed from Table (2). In the year 2004, the GDP of Iraq amounted to 53,235,359 million dinars, while the average price of crude oil was 36.1 dollars per barrel. Regarding the per capita share of the GDP, it reached 2.00 million dinars. In the year 2005, the GDP increased by a growth rate of 38.1% to reach 73,533,599 million dinars due to the rise in crude oil prices by 40.1% to 50.6 dollars per barrel. The per capita share of the GDP reached 2.60 million dinars as a result of the increase in the overall GDP.

The increase in Iraq's GDP continued in the years 2008, 2007, and 2006, reaching 95,587,955 million dinars, 11,455,813 million dinars, and 157,026,062 million dinars respectively, due to the rise in crude oil prices and an increase in export volume. As for the per capita share of the GDP, it rose to 5.10 million dinars in the year 2008.

In the year 2009, the Gross Domestic Product (GDP) in Iraq witnessed a negative growth rate of -2.6% compared to the previous year, reaching 130,643,200 million dinars. This decline was a result of the repercussions of the global financial crisis and its impact on crude oil prices, leading to a decrease in crude oil prices to 61.1 dollars per barrel after recording 94.5 dollars per barrel in the previous year. The average per capita share of the GDP also decreased to 4.10 million dinars.

During the period from 2010 to 2013, the GDP experienced rapid growth, reaching 162,064,566 million dinars in 2010 and 273,857,529 million dinars in 2013. Additionally, the average per capita share of the GDP increased from 5.00 million dinars to 7.80 million dinars. This increase in GDP was attributed to the rise in crude oil prices, with the price per barrel surpassing 100 dollars. This was due to the increased global demand for oil following the recovery of the global economy from the financial crisis, along with an increase in oil exports from 1,890 thousand barrels per day in 2010 to 2,390.4 thousand barrels per day in 2013. Furthermore, the contribution of other sectors to the GDP also saw an increase.

However, in the year 2014, the GDP at current prices in Iraq witnessed a negative growth rate of -2.7%, declining to approximately 266,332,655 million dinars. This decline was a result of a slight decrease in crude oil prices, with a 9.0% decrease to 96.29 dollars per barrel. The decline in GDP continued in the years 2016 and 2015, with negative growth rates of -26.9% and -4.1% respectively, reaching 196,680,972 million dinars and 186,542,703 million dinars. The average per capita share of the GDP also decreased to 5.40 million dinars. The decline in GDP at current prices was mainly

attributed to the sharp decrease in crude oil prices, with the price per barrel dropping to 40.76 dollars in 2016, the lowest price recorded by OPEC since 2004. Additionally, the exceptional circumstances faced by Iraq during the war with terrorist groups (ISIS) further contributed to the decline, along with a decrease in the contribution of other sectors, negatively impacting the GDP.

In the year 2017, the Gross Domestic Product (GDP) experienced a notable upturn, exhibiting a growth rate of 11.2% when compared to the preceding year. Consequently, the GDP reached a substantial sum of 207,621,134 million dinars, courtesy of a remarkable enhancement in crude oil prices, which soared by 28.6% in relation to the figures recorded in 2016. Furthermore, the per capita share of the GDP averaged at 6.00 million dinars. The upward trajectory of the GDP persisted gradually throughout 2018 and 2019, with growth rates of 20.2% and 1.9% respectively, culminating in 249,574,276 million dinars and 254,443,953 million dinars. Notably, these figures constitute the highest recorded increase in GDP since 2015. Correspondingly, the per capita share of the GDP reached an average of 7.10 million dinars for the aforementioned years. This commendable surge can be attributed to the progressive amelioration of crude oil prices, coupled with an 8.7% augmentation in the proportion of oil exports to the global total, signifying the highest percentage achieved during the study period in 2019.

Conversely, the year 2020 witnessed a downturn in the GDP, marked by a negative growth rate of 15.2% in comparison to 2019, resulting in a value of 215,661,517 million dinars. Furthermore, the average per capita share of the GDP plummeted to 5.40 million dinars. This decline ensued from the reverberations of the COVID-19 virus, as well as the emergence of an oil price war among oil-producing nations. Consequently, this confluence of events detrimentally impacted crude oil prices, leading to a negative percentage decrease of 35.2%, ultimately reaching a price of 41.47 dollars per barrel. Consequently, this decline had an adverse effect on the overall GDP of Iraq.

Moving forward to the year 2021, the GDP experienced a rapid ascent, characterized by a substantial growth rate of 39.6%, culminating in a staggering 301,152,819 million dinars. This significant boost can be attributed to the economic recovery witnessed on a global scale, including Iraq, subsequent to the crisis provoked by the COVID-19 pandemic. The resultant upswing in global oil demand and an impressive 68.5% surge in oil prices, reaching 68.5 dollars per barrel, contributed significantly to this growth. Correspondingly, the average per capita share of the GDP surged to 7.30 million dinars.

From these observations, one can deduce that the relationship between oil price fluctuations and economic growth lies in the fact that oil serves as a principal resource for the Iraqi economy. Accounting for over 95% of its total exports and constituting approximately 60% of the GDP, any oscillations in oil prices invariably exert a direct impact on the Iraqi economy. In the event of an upturn in oil prices, it is accompanied by a commensurate increase in revenues and subsequent expenditure on developmental initiatives, thereby fostering heightened rates of economic growth. Conversely, a downturn in oil prices generates an adverse effect.

To achieve a sustained trajectory of economic growth, the government must undertake enhanced efforts in diversifying the sources of income, thereby mitigating the substantial dependency on oil and fortifying the capacity to adapt to price fluctuations.

Secondly: Analysis of the relationship between crude oil prices and unemployment.

Unemployment is one of the most complex phenomena in all countries worldwide, regardless of their level of development, as it is both an economic and social phenomenon for any society. However, it becomes even more intricate in developing countries due to several reasons related to the nature of the prevailing political and economic system in the country. Its severity is manifested through the waste of human labor and the decline in productivity levels in various economic sectors. Additionally, it leads to lower living standards and increased social dependency rates. Unemployment is considered one of the most significant challenges facing the Iraqi economy, given its serious implications on the economic, social, and security levels.

The impact of oil price shocks in the global market has varying repercussions on the labor market concerning unemployment and wages. This has been elucidated in economic literature, highlighting that wages are the primary variable affected by economic shocks, depending on their elasticity.

The impact is significant in countries experiencing low wage flexibility or stagnation, as it results in a decrease in aggregate supply or output due to the negative shock. This leads to a decrease in labor demand and subsequently an increase in unemployment rates (El-Sayed, 2015, p. 48).

Concept of Unemployment:

The concept of unemployment has garnered significant attention from economic and social literature. It proves challenging to establish a single definition for it. It has been defined as "the state in which an individual is capable and willing to work, actively seeking employment at prevailing wages but unable to find suitable employment" (Zaki, 1998, p. 15). It has also been defined as the state in which an individual is capable and willing to work but lacks paid employment. As for the unemployment rate, it is the most commonly used indicator when interpreting labor market conditions. It is calculated by the ratio of unemployed individuals to the labor force.

Types of Unemployment:

Given the importance of the unemployment issue and its impact on the economy and society, understanding its types is crucial for individuals and institutions. The major types include:

a) Structural Unemployment: This type arises from economic changes that create a mismatch between available job opportunities and the qualifications and experiences of unemployed individuals seeking work. These changes can stem from shifts in product demand, the relocation of industries, or the replacement of labor by technology.
b) Frictional Unemployment: This temporary type of unemployment occurs when workers transition from one job to another in pursuit of better career opportunities. It is usually of short duration (Issa, 2018, p. 147)

c) Disguised Unemployment: This type emerges due to a discrepancy between workers' productivity and their role in the production process. It results in low levels of labor output and is commonly observed in the public sector, particularly in developing countries.
d) Cyclical Unemployment: This type is frequently observed in industrialized nations as a consequence of economic fluctuations. Although initially associated with capitalist economies, its impact has expanded to include developing countries due to interdependencies between advanced and resource-rich economies. A recession in industrialized nations naturally leads to a decrease in demand for primary resources in developing countries.

e) Seasonal Unemployment: This type is often observed in the agricultural sector and emerging rural industries. It occurs due to the seasonal nature of agricultural production and the seasonal variations in economic activities associated with changes in consumption patterns (Al-Wadi, 2007, p. 308).
f) Voluntary and Involuntary Unemployment: Keynes defined voluntary unemployment as "unemployment that arises when prices rise with a constant nominal wage rate (real wage decline)." (Al-Mousawi, 2014, p. 176).
g) Others define it as a situation in which workers deliberately withdraw from the labor market to prioritize leisure time. In contrast, involuntary unemployment refers to a type of unemployment in which individuals are forced out of work without their consent. This occurs when workers are dismissed despite their willingness to work at prevailing wages or when newcomers to the labor market fail to find employment despite actively seeking it at prevailing wage levels (Chudnovsky, 2012, p. 309).

Table (3) Crude oil prices and unemployment rates in Iraq

The year	The average price of crude oil within the OPEC basket of crudes (dollars) (1)	The annual growth rate of crude oil prices within the OPEC basket of crudes% (2)	Unemployment rates in Iraq % (3)	Unemployment growth rate % (4)
2004	36.1	_____	26.8	_____
2005	50.6	40.1	17.9	(33.2)
2006	61.1	20.7	17.5	(2.2)
2007	69.1	13.0	11..7	(33.1)
2008	94.5	36.7	15.3	30.7
2009	61.1	(35.3)	14.0	(8.5)
2010	77.45	26.7	12.0	(14.2)
2011	107.46	38.7	8.1	(32.0)
2012	109.45	1.8	7.9	(2.2)
2013	105.87	(3.2)	9.2	16.3
2014	96.29	(9.0)	10.5	14.2
2015	49.49	(48.6)	10.7	1.3
2016	40.76	(17.6)	10.8	0.93
2017	52.43	28.6	13.0	20.3
2018	69.78	33.0	12.8	(1.1)
2019	64.04	(8.2)	12.7	(0.8)
2020	41.47	(35.2)	13.7	7.6
2021	69.89	68.5	16.5	20.0

Prepared by the researcher based on the data provided in...

-Source:

- Ministry of Planning and Development Cooperation, Central Agency for Statistics and Information Technology, Directorate National accounts and the Department of Human Development.

- OPEC, Home, Data/Graphs, OPEC Basket price, Available at the link :https://www.opec.org/opec_web/en/data_graphs/40.htm

Note: The numbers in brackets are negative (-).

Upon returning to the analysis of the relationship between crude oil prices and unemployment rates in Iraq for the period (2004-2021), it is evident from Table (3) that the unemployment rate in Iraq reached 26.8% in 2004, which was the highest rate observed during the study period. This was a result of the unstable security and political situation, as well as the active terrorist operations, which led to the destruction of the state's infrastructure and the suspension of production in industrial institutions. Additionally, there were layoffs in government departments and the dissolution of security systems under the previous regime.

In 2005, the unemployment rate decreased by 33.2% compared to the previous year, reaching 17.5%, due to a 40.1% increase in oil prices. The decline in the unemployment rate continued for the following two years (2006, 2007) by 2.2% and 33.1% respectively, reaching 17.5% and 11.7%.

This was a result of the rising crude oil prices, which led to increased oil revenues. Consequently, the Iraqi government was able to create job opportunities within the security apparatus and implement favorable loan programs that were initiated in 2007. Furthermore, there was a gradual return of security stability in some provinces.

In the year 2008, the unemployment rate increased by 30.7% compared to the previous year, reaching 15.3%. Despite a 36.7% increase in oil prices, the reason behind the rise in unemployment rates during this year can be attributed to sectarian conflicts, which led to urban displacement and forced some employees to leave their jobs. Additionally, the mismanagement of public funds due to the rampant corruption, lack of foreign investment, and the entry of foreign labor further contributed to the unemployment issue. Moreover, thousands of graduates from Iraqi universities entered the job market during this period.

However, in the period from 2009 to 2012, the unemployment rates gradually decreased. It dropped from 14.0% in 2009 to 7.9% in 2012, marking the lowest level of unemployment during the study period. This decrease coincided with an increase in crude oil prices from $69.1 to $109.45 per barrel. The decline in unemployment rates during this period can be attributed to the rise in oil prices, which resulted in increased oil revenues. Consequently, the government was encouraged to increase the workforce by creating job vacancies within the public sector, in addition to the improvement of security conditions.

In the period from 2013 to 2017, the unemployment rates rose from 9.2% in 2013 to 13.0% in 2017, mainly due to the decline in crude oil prices during this period. Moreover, the government implemented austerity measures regarding the support of other economic activities and job opportunities. Despite the decrease in oil prices, the unemployment rates remained relatively low compared to previous years. This can be attributed to the government's focus on increasing military spending by opening up voluntary enlistment opportunities within the Iraqi Army and Popular Mobilization Forces to counter the threat of terrorist organizations like ISIS. This measure helped mitigate the impact of falling oil prices on unemployment rates and prevented it from reaching the expected level.

In the years 2018 and 2019, the unemployment rates in Iraq experienced a marginal decline of 1.1% and 0.8% respectively, resulting in figures of approximately 12.8% and 12.7%. This reduction can be attributed to the gradual improvement in crude oil prices and the emergence of popular protests against the governing authority. Consequently, the ensuing pressure led to the creation of a substantial number of employment opportunities. Nevertheless, despite this modest decrease, the unemployment rates remained relatively elevated due to several factors, including the persistent influx of foreign labor and the lack of government initiatives aimed at supporting the private sector and other economic activities.

During the years 2020 and 2021, the unemployment rates in Iraq exacerbated compared to preceding years, reaching levels of 13.7% and 16.7% respectively. This escalation can be ascribed to a confluence of factors, with a notable one being the COVID-19 pandemic, which disrupted workforce mobility within various economic sectors. Moreover, the downturn in crude oil prices further contributed to the surge in unemployment. Additionally, the capacity of both governmental and private educational institutions expanded, resulting in an upsurge in the number of graduates. However, inadequate investment efforts hindered the provision of employment opportunities to accommodate the unemployed individuals. Despite substantial financial resources allocated for domesticating investment prospects, their efficacy was undermined by the rampant prevalence of financial and administrative corruption within the state apparatus.

Thirdly: Analysis of the relationship between crude oil prices and inflation

Inflation is an economic phenomenon faced by most countries worldwide, regardless of their level of development. This phenomenon has negative effects on overall economic, social, and political activities, as well as on individuals' lives and livelihoods. It is considered one of the prominent challenges and objectives pursued by the monetary authority in Iraq to eliminate it as a rampant inflation phenomenon. It is necessary to control it by using its tools to limit its expansion within an economic environment dependent on crude oil exports to cover its expenses. Any shock

experienced by the oil market will be reflected through oil price fluctuations, which will directly impact the Iraqi economy and contribute to an increase in inflation, adversely affecting the local currency and thereby promoting the phenomenon of dollarization. (Al-Khazraji, 2010, p. 7).

1. The concept of inflation

Despite the widespread use of the term "inflation" in economic literature, economists do not agree on a clear definition for it. Some attribute it to the increase in the quantity of circulating money relative to the supply of goods, resulting in a general rise in prices. Others attribute it to an increase in national spending without a corresponding increase in production, while others link it to structural changes in the economy accompanied by a general increase in prices. (Al-Wadi, 2009, p. 81). Ackley defined inflation as "the sustained increase in the general level of prices." (1961, p. 22).

2. Types of inflation: There are several types of inflation, and the most important ones include:

a) Explicit (Visible) Inflation: This type is referred to as open inflation, where prices rise freely in order to achieve equilibrium between supply and demand without government intervention. In other words, it is the continuous increase in prices in response to excess demand without government interference.

b) Suppressed (Hidden) Inflation: This is another type of inflation also known as concealed inflation. In this type, prices are unable to rise above the ceilings set by the government. (Al-Khatib, 2013, p. 258).

c) Creeping Inflation: It occurs when prices moderately and gradually rise at a rate of less than 15%. This type is widely accepted among economists as it does not pose a significant threat to economic balance and activity. (Al-Nasur, 2013, p. 19).

D) Hyperinflation: It occurs when individuals lose confidence in the national currency. In this type, prices rise at high rates within a relatively short period. Hyperinflation is considered one of the most dangerous types of inflation due to the difficulty of controlling it by the monetary authority.

d) Stagflation: This type appears when there is a continuous increase in price levels accompanied by increasing unemployment, a decline in gross national product, and its growth rates over a certain period of time. In other words, it is a situation where high inflation and unemployment rates coincide.

e) Imported Inflation: This type manifests through continuous increases in prices of imported goods and services or when the costs of imported production increase. In other words, this type occurs when an economy relies on imported goods and services that are already experiencing inflation in the source country (Al-Afandi, 2013, p. 280).

Table (4): Crude oil prices and inflation rates in Iraq

The year	The average price of crude oil within the OPEC basket of crudes (dollars) (1)	The annual growth rate of crude oil prices within the OPEC basket of crudes% (2)	inflation rates % (3)
2004	36.1	_____	27
2005	50.6	40.1	37
2006	61.1	20.7	53.2
2007	69.1	13.0	30.8
2008	94.5	36.7	2.7
2009	61.1	(35.3)	(2.8)
2010	77.45	26.7	2.4

2011	107.46	38.7	5.6
2012	109.45	1.8	6.1
2013	105.87	(3.2)	1.9
2014	96.29	(9.0)	2.2
2015	49.49	(48.6)	1.4
2016	40.76	(17.6)	0.5
2017	52.43	28.6	0.2
2018	69.78	33.0	0.4
2019	64.04	(8.2)	(0.2)
2020	41.47	(35.2)	0.6
2021	69.89	68.5	6.0

Source:
-Prepared by the researcher based on the data provided in...
- Central Bank of Iraq, annual statistical report, different numbers, different years.
-OPEC, Home, Data/Graphs, OPEC Basket price,Available at the link :https://www.opec.org/opec_web/en/data_graphs/40.htm
-Note: The numbers in brackets are negative (-).

Upon revisiting the analysis of the relationship between crude oil prices and inflation in Iraq during the period of 2004-2021, as indicated in Table (4), notable observations can be made. In 2004, the inflation rate stood at 27%, while the price of crude oil reached $36.1 per barrel during the same year. Subsequently, the inflation rate escalated, peaking at 30.8% in 2007. The highest recorded inflation rate throughout the study period occurred in 2006, reaching a staggering 53.2%. The surge in inflation rates from 2004 to 2007 can be attributed to a confluence of factors, among which the notable ones include the substantial increase in oil prices to $69.1 per barrel in 2007. This upturn in oil prices resulted in augmented oil revenues and subsequently bolstered individual incomes and heightened openness to imports as a means to address the escalating demand (Al-Khazraji, 2010, p. 12). Furthermore, the constrained role played by the central bank in combating inflation, despite its attainment of independence as outlined in Law (56) of 2004, coupled with the scarcity of certain vital commodities, particularly domestic petroleum products, and the emergence of the black market, have all contributed to the inflationary pressures.
In the years 2008 and 2009, inflation rates in Iraq decreased to approximately 2.7% and 2.8% respectively, following the high rate of 30.8% recorded in 2007. This decline can be attributed to the decrease in crude oil prices from $94.5 to $61.1 per barrel, influenced by the global financial crisis (Central Bank of Iraq, 2008, p. 40). Additionally, the success of the monetary policy pursued by the central bank in achieving stability in general price levels, alongside significant improvements in the security situation, contributed to this reduction.
During the period from 2010 to 2012, inflation rates gradually increased in Iraq, reaching 6.1% in 2012 after being -2.8% in 2009. The rise in inflation rates during this period can be attributed to the increase in crude oil prices to $109.45 per barrel, which led to an increase in operational expenditure compared to investment expenditure. Consequently, this resulted in wage inflation, along with the global rise in food prices, which coincided with a decrease in global production, as reported by the Food and Agriculture Organization of the United Nations. These factors occurred amid a situation of increasing demand and a lack of flexibility in the production apparatus in Iraq.
In the year 2013, inflation rate in Iraq decreased to 1.9% from 6.1% in the previous year. This decline can be attributed to the availability and decrease in prices of petroleum derivatives. Furthermore, it is a result of the decline in the growth rates of most components of the Iraqi consumer basket. Additionally, the monetary authority successfully maintained exchange rate stability by intervening daily in the exchange market.

In 2014, the inflation rate witnessed a slight increase to 2.2%, which was considered temporary or seasonal inflation, according to the report by the Central Bank of Iraq. Subsequently, inflation rates gradually decreased until 2019, reaching a low rate of 0.2%, the lowest inflation rate during the study period. The decline in inflation rates from 2014 to 2019 can be attributed to the global decline in food prices, as well as the economic recession experienced by the Iraqi economy due to the decrease in crude oil prices in the global market.

In the year 2020, the inflation rate in Iraq increased to 0.6% from -0.2% in the previous year, despite the decline in crude oil prices to $41.47 per barrel. This increase in inflation rate is attributed to the global rise in prices due to supply shortages caused by the COVID-19 pandemic. However, this increase remains within acceptable levels due to the successful management of the exchange rate by the Central Bank of Iraq. This success has led to a decrease in the prices of consumer goods denominated in the local currency, effectively preventing significant price increases in the domestic market.

The inflation rate continued to rise until 2021, reaching 6.0% from 0.6% in the previous year. Despite improvements in crude oil prices, the increase in inflation rate can be attributed to several factors. One of the most significant factors is the reduction in the exchange rate of the Iraqi dinar against the US dollar to address the dual crisis of declining oil revenues and the health crisis faced by the country. Additionally, the Iraqi economy was affected by fluctuations in prices (both increases and decreases) with trading partners and external shocks resulting from volatility in crude oil prices. Moreover, the prices of essential commodities, particularly food and transportation costs, have risen in the global market.

The stability of other factors remained unchanged, meaning that when crude oil prices rise, there is an increase in oil revenues and consequently an increase in spending that stimulates aggregate demand. In the presence of an inflexible production apparatus, the price index in the country will rise, giving rise to inflation. However, this relationship also depends on the prevailing economic policy in the country, whether contractionary or expansionary.

CONCLUSION

The nature of the relationship between crude oil prices and economic performance indicators in Iraq lies in the fact that crude oil is a major resource for the Iraqi economy, contributing to more than 95% of total exports and accounting for approximately 60% of the GDP. Therefore, any fluctuation in oil prices will directly impact the country's economic performance indicators. In the case of rising oil prices, it leads to an increase in oil revenues and spending on development projects, thereby contributing to higher economic growth rates. Conversely, when prices decrease, the opposite effect occurs, highlighting the inverse relationship between crude oil prices and economic growth.

However, the nature of the relationship differs concerning unemployment rates. Sharp fluctuations in crude oil prices lead to both economic and social variations, primarily affecting the unemployment rate. Rising oil prices have positive effects on unemployment rates, as they are accompanied by increased government spending and investment opportunities, resulting in more job opportunities and a decrease in the unemployment rate. The opposite effect occurs in the case of a decrease in oil prices, emphasizing the inverse relationship between crude oil prices and the unemployment rate.

As for inflation rates, crude oil prices are positively correlated with inflation, assuming other factors remain constant. When crude oil prices rise, it generates increased oil revenues and subsequent spending that stimulates aggregate demand. In the presence of an inflexible production apparatus, this leads to an increase in the price index in the country and the emergence of inflation. However, this relationship also depends on the prevailing economic policy in the country, whether contractionary or expansionary. Therefore, it is essential to adopt an economic diversification policy and diversify sources of income, especially in productive sectors such as agriculture, manufacturing, tourism, and others. This will help overcome the rentier characteristic of the Iraqi economy.

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