

Developments of Oil Stocks and their Impact on Oil Prices in the Global Energy Markets

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Abstract—Oil stocks have been characterized by many changes during the last two decades. These changes are resulting from changes in prices on the one hand and economic fluctuations on the other hand. This study, therefore, seeks to identify the most important types of oil stocks, as well as developments in the size of these stocks, and then its impact on global oil prices. Besides, the role of these stocks in stabilizing the global oil market will be touched upon..

Keywords: Development of oil stocks, Impact on oil process, Global Energy Markets

Introduction

The realization of an increase or decrease in oil stocks leads to changes in the levels of oil prices in the world oil market. The movement of global oil stocks of various kinds, especially in the countries of the Organization for Economic Cooperation and Development (henceforth, OECD) and industrial countries, in particular, is regarded as one of the most important indicators affecting the oil market and prices. These countries have relatively large storage capacities to be used in the event of unexpected imbalances in global supply and demand for oil (Al-Yasiri, Ali, Ali, & Bekheet, 2020). Therefore, monitoring changes in these stocks in light of changes in prices and indicating the impact of that relationship on the market of oil in particular and the market of global energy in general, is an important aspect in knowing the nature of that relationship and its role in achieving balance in the oil market.

A Historical Background for the Development of Oil Stocks

The Washington conference of 21st, September 1974 resulted in an agreement to form a special international energy consortium called the International Energy Agency (IEA), which is controlled by the United States, which was then signed by 12 capitalist countries and later joined by seven other countries (Bernanke, 2016). The 15th of November 1974 was considered the deadline for the emergence of the Agency with its twentieth capitalist countries. The agency, since its inception, has aimed to implement the large oil-storage program. which may reach a level sufficient for the domestic consumption of IEA countries for one year in case oil imports are stopped for any reason, but because of the difficulties faced by the aspirations of IEA countries in general and the United States in particular, the agency has specified an urgent goal, that is, the need for their countries to store oil for a period of consumption of up to 60 days as a minimum, rising to 90 daily in 1980 and then to 180 days in 1985, and these countries afford the large capital expenditures for the implementation of the program (Nicoletti & You, 2020).

The principal cause that has motivated consumer countries to the founding of this oil reserve was due to the oil supply produced in the Middle East region, specifically the Gulf region, which was vulnerable to large fluctuations. What prompted oil consumer countries, especially the United States of America and through the US Congress in 1975 to issue a law obliging the federal government to the establishment of industrial reservoirs to store quantities of crude oil sufficient to secure demand in case of supply of any kind of undergoes sharp fluctuations. In addition, energy companies must store their own quantities that are equivalent to the total amount of federal stocks. Oil stocks are linked to the concept of energy

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security, which was defined by the International Energy Agency (IEA) as the unavoidable availability of energy sources at affordable prices. Energy security has many aspects: long-term energy security deals mainly with timely investments to provide energy in line with economic developments and environmental needs. On the other hand, energy security in the short term focuses on the ability of the energy system to respond quickly to sudden changes in the supply and demand balance (S. IEA, 2017). The strategic reservoir began to take an active role in the oil market after 1979, as the storage policies created a surplus in the market, which resulted in oil prices to go down. The industrial countries which used to be oil-consumer have turned to be oil-exporting ones as a result to oil storage and moved from the stage of securing supplies in case of the fluctuation or interruption of the flow of crude oil from the oil producing regions for 90 days to become an important factor affecting the oil market, to become finally, an important factor in the oil brokerage (Leiby, Oladosu, Uria Martinez, & Johnson, 2019). Oil storage policies are part of the energy consuming countries of the International Energy Agency (IEA). Based on the policies of this agency, the policies of the oil reserves were established through short-term investments through the trends of the reservoir and its transition from the safety of supplies to the oil market, directly to OPEC's share in the international oil market, and the second is long-term through encouraging investments and support for production projects Energy alternatives.

The reservoir is an important element in expanding the immediate market share of crude oil from 5% in the 1970s to 35%. The role of the oil stocks is illustrated by its ability to adjust the market situation to meet supply and demand fluctuations. If the stock is high, the market can absorb a significant decline in oil supplies. If it is low, it can absorb part of the demand for its reconstruction. Therefore, one of the important reasons for creating a surplus in the market is the lack of demand for crude oil as a result of economic and non-economic factors. Global oil companies and oil-consuming countries manage, direct, and determine the pathways through which the reservoir affects the oil market through the impact on supply (Das, Kumar, Tiwari, Shahbaz, & Hasim, 2018). Therefore, the oil reserves are represented by the large quantities of oil and refined products that are held in multiple places sufficient to meet the needs of the country consuming the crude oil for a period of time from 30 to 90 days in case of supply undergoes severe fluctuations or interruption due to multiple factors, whether political or economic or terrorist and other factors.

The Division of Oil Stocks

Oil reserves consist of two main parts: the first part is oil stocks according to their patterns, while the second one is based on the objectives of keeping the oil reserves (Solano-Rodríguez et al., 2019). Oil inventories according to their patterns. These stocks are divided into three basic types:

1. Stock of the primary sector this stock is represented in the oil industry facilities of production, refining and transport. It is usually carried in tanker trucks and trucks for the transport of oil products, as well as in storage facilities for petroleum products for distribution to major consumers and storage facilities for strategic government storage.
2. Stock of the second sector. This inventory includes the quantities of oil held by retailers and small distributors, both in secondary distribution centers or in filling stations for distribution to small consumers.
3. Stock of the third sector. This type of inventory is defined as the oil in the end consumer, which consists of different vehicles and means of household storage. Although the stocks of the second and third sectors have an indirect impact on the oil markets and are larger than the initial stock, the exact uncertainty of their level is treated on the basis of an unknown factor in oil stocks

Such kinds of oil stocks are divided according to their retention objectives into disposable stocks and inalienable stocks.

1) Disposable oil reserves

This type of oil storage refers to that oil which provides companies with the ability to meet the fluctuations in supply and demand, which in turn gives flexibility to meet the seasonal fluctuations and daily demand, as well as counter the programs of tankers in dealing with the impact of adverse weather conditions on port operations and counter the irregular changes in oil supplies (Uzo-Peters, Laniran, & Adenikinju, 2018). It also crude oil kept by companies and governments for various purposes, but it is not vital to the global supply system, such as immunity from price fluctuations or speculation in the global oil market, as this stock is imposed by economic conditions. It, in turn, is sub-divided into two types:

- Commercial stock that can be used: It involves the commercial stocks of the oil companies which exceeds the minimum operating level required by the fifty-five days in addition to that retained by those companies near the main consumption centers.
- Stocks of producing countries: This type includes crude oil reserves held by oil producing countries. Most of these countries have relatively large storage capacities at export ports to maintain export levels at their prevailing rates during periodic maintenance of oil fields as well as independent oil stocks. These countries have areas close to the consumption centers such as Singapore Port and Caribbean Port.

2) the inalienable oil reserves

The inalienable stock is divided into the following sections:

1. Strategic government stock: This stock is based on legislation and Government laws to ensure the security of supply, as the level of this stock is determined depending on the oil imports or consumption of each country, and the strategic government stocks are represented by the strategic US stocks.
2. Minimal Operating Stock: This type of inventory is called non-available stock, which includes the necessary oil to run the supply system, such as oil filling in pipelines, as well as oil stuck at the bottom of tanks that are difficult to pump and supply to consumers.
3. Transit stock: This type is one of the most important types of stocks in the global supply system through its major role in providing oil supplies to consumer countries, especially since there is a time lag between production of oil and its actual consumption. This stock transports crude oil only between the different areas on board of the tankers for a period of up to about 45 days.

World Energy Demand Forecast

All energy-related organizations and companies expect a significant increase in global energy demand over the coming decades as a result of higher economic and population growth rates, higher living standards and increased per capita consumption in the world. Most of this increase will be met by fossil fuels (oil, gas and coal), which is expected to contribute between 75%-80% of the expected increase in global energy consumption, estimated by OPEC at (299.0) million barrels per day (2020), bringing demand to about (336.0) and (370.7) million barrels per day (2030) and (2040) respectively, compared with (273.9) million barrels per day in 2014, an expected annual growth rate of 1.2%. However, the expected rate of growth is slower than that in the past three decades, which reached about 2% annually. As far as other sources of energy are concerned, OPEC sees the continued dominance of oil over energy sources during the first part of the forecast until 2020. The share of oil in total primary energy is expected to decrease to 28.5% in 2030 and to 25.9% (2040). The main reason for the decline in the demand for crude oil from the total primary energy during the period of expectations is due to the natural depletion of oil, as well as the adoption of strict policies on climate change (Ahmadi, Manera, & Sadeghzadeh, 2016). In addition, the demand for coal will decline for the same period until the share of coal in total primary energy to (24.7%) in the year (2030) and to (22.1%) in the year (2040) in comparison with crude oil, either demand for natural gas will be roughly the same with coal during the forecast period despite its rapid growth compared to other energy issues. For other energy sources, it is expected to maintain stable levels, especially hydropower, biomass, which is growing at a faster rate to about (10.7%) percent of total primary energy supply in 2040, as distributed in the following table.

Table 1. global demand for primary energy (2014-2040)

source	Global supply of energy (million barrels per day)				Growth rate -2014 %2040	% of total energy			
	2014	2020	2030	2040		2014	2020	2030	2040
oil	85.1	90.7	95.6	96.2	0.5	31.1	30.3	28.5	25.9
coal	77.7	81.9	82.9	81.8	0.2	28.4	27.4	24.7	22.1
gas	59.6	66.7	82.0	96.6	1.8	21.8	22.3	24.4	25.9
Nuclear power	13.2	15.6	19.8	25.5	2.6	4.8	5.2	5.9	6.9
Hydropower	6.6	7.6	8.9	10.2	1.7	2.4	2.5	2.6	2.8
Biofuel	28.2	30.8	35.0	39.8	1.3	10.3	10.3	10.4	10.7
Renewable energy	3.4	5.8	11.8	21.3	7.3	1.3	1.9	3.5	5.7

Total power	273.9	299.0	336.0	370.7	1.2	100	100	100	100
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Source: OPEC (2016), World Oil Outlook ,2016.

Global Demand on Oil

The estimates of the International Energy Agency (IEA) indicates that there has been a steady increase in oil demand over the period 2003-2017 in most countries. The global demand increased from 80.2 million barrels in 2003 to 87.1 million barrels in 2007, Due to the global crisis and the low levels of economic growth, as demand fell to 85.6 million barrels, and demand increased by gradual levels to reach 90.6 million barrels in 2012, reaching 92.0 million barrels in 2013 to reach 93.2 million barrels in 2014, while the years 2016 and 2017 have witnessed an increase in the demand levels to 96.5 and 97.5 million barrels per day, respectively. Although growth in global demand continued unabated during the period, the slowdown began to be clear in 2013, to reach 93.2 million barrels per day in 2014, while in 2016 and 2017 increased demand levels of oil to 96.5 and 97.5 million barrels per day, respectively. Although the global demand continued during that period, yet the slowdown has been very clear in its averages following the year 2013 mainly due to the high level of sovereign debt in the euro area, the high level of unemployment in developed countries and the risk of inflation in emerging economies. The relationship between global economic growth and global demand for oil is determined by the impact of the continued economic growth question on growth rates in demand. The result is that the total global demand for oil will be in the event of expansion due to population growth, economic growth and technological development.

Table 2. Growth of global oil demand (2003-2017)

organization	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Development and Cooperation	49.3	50.1	50.4	50.2	50.1	48.4	46.3	47.0	46.4	45.9	46.1	45.8	46.2	46.8	46.6
Countries outside the organization	30.9	33.1	34.1	35.4	37.1	38.1	39.3	41.7	43.1	44.6	45.9	47.4	48.6	49.7	50.9
Total	80.2	83.2	84.6	85.6	87.1	86.5	85.6	88.7	89.5	90.6	92.0	93.2	94.8	96.5	97.5

Source: Iea (2017), International Energy Agency, Oil Market Report.

Global Supply of Oil

In view of the International Energy Agency (IEA) estimates of global oil supplies, these supplies have increased global production as a result of increased production to non-OPEC countries (G. E. IEA, 2017). Production has increased in recent years. Table (3) Evolution of global supply of oil: International Energy Agency (million barrels per day) during the period (2003 - 2017)

Table 3. Growth of global oil supply (2003-2017)

Region	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Development and Cooperation	21.4	21.1	20.2	19.8	19.5	18.8	18.8	18.9	19.0	19.9	21.0	22.9	23.9	23.4	24.0
Countries outside the organization	25.6	26.6	27.2	27.8	28.2	28.4	29.0	29.9	29.9	29.5	28.4	28.8	29.1	29.6	29.7
Countries outside OPEC	2.4	2.4	2.6	2.8	3.0	3.4	3.6	3.9	4.0	4.0	4.2	4.4	4.5	4.6	4.3
OPEC	30.8	33.3	34.8	35.1	34.9	36.1	34.2	34.7	35.8	37.5	37.7	37.7	39.0	39.3	38.7
Total	80.3	83.5	84.8	85.5	85.6	86.7	85.6	87.4	88.6	90.9	91.3	93.8	96.6	96.9	96.6

Source: Iea (2017), International Energy Agency, Oil Market Report.

As table 3 above shows, the global production rose from 80.3 to 87.4 million barrels in the period 2003-2010, reaching 91.3 million barrels per day in 2013 to reach 93.8 million barrels per day in 2014, while the years 2016 and 2017 increase in the levels of these supplies of oil to 96.9 and 96.6 million barrels per day, respectively, OPEC confirms that most of the oil supply from Large OPEC countries which their sources are Canadian oil sands, as well as growth in biofuel production from the United States, Europe and Brazil. FAO expects the US and Canadian supply of non-conventional oil to rise as oil production grows in the United States. The following table shows world oil supplies, according to the International Energy Agency (IEA), which includes the Organization for Development and Cooperation (OECD) and both OPEC and Non-OPEC countries.

Balancing global oil demand and supply

During the period 2003-2008, the oil market witnessed a steady increase in prices as the annual average of this period increased, in line with the recovery witnessed by commodity prices in the global market. The surge in oil prices ended in a spectacular collapse at the end of 2008, resulting in changes in both global supply and global demand for oil, which increased as closely as in table (4) below. This was accompanied by changes in world crude oil prices. The price rose to more than half in 2013. In contrast, in 2014, the world supply of oil was 93.8 million barrels per day, while the world demand was 92.2 million barrels per day, that is, a surplus supply on demand for 2014, was 0.6 thousand barrels per day. However, the average price of crude oil for the same year fell to \$ 96.71 per barrel (according to OPEC reports). The main reason for the 2014 average decline of \$ 105.45 was the impact of US production of unconventional oil which led to the decline in global demand for production of oil produced in the Middle East, where the United States relied on domestic production of oil more and less import from abroad, which led to a decline in global demand for oil as the United States was the largest consumer of oil in the world, in addition to the increase of oil supply from Iraq and other oil producing countries and to achieve an increase in the strategic oil reserves, and political factors. In 2015, the average surplus increased by 1.8 million barrels per day, bringing the price down to \$ 50.94 a barrel. Although there was a decrease in the daily average of surplus to 0.4 thousand barrels in 2016, on the one hand, and an increase in the continued demand on the other, the price of oil fell to \$ 42.92 per barrel. Therefore, the increase in demand for oil with the stability or low supply, has not been accompanied by increase in prices as illustrated in Table 4 below:

Table 4. Global oil supply and demand (2003-2017)

Year	Global demand	Global supply	Deficit/ surplus	Price
2003	80.2	80.3	0.1	28.2
2004	83.2	83.5	0.3	36.5
2005	84.6	84.8	0.2	50.6
2006	85.6	85.5	0.1-	61.0
2007	87.1	85.6	1.5-	69.1
2008	86.5	86.7	0.2	94.4
2009	85.6	85.6	0	610
2010	88.7	87.4	1.3-	77.4
2011	89.5	88.6	0.9-	107.5
2012	90.6	90.9	0.3	109.5
2013	92.0	91.3	0.7-	105.45
2014	93.2	93.8	0.6	96.71
2015	94.8	96.6	1.8	50.94
2016	96.5	96.9	0.4	42.92
2017	97.5	96.6	0.9-	55.53

The table of the researcher's work is based on the data of tables (2) and (3). In terms of the price column, it was based on: Organization of Arab Petroleum Exporting Countries (OAPEC), Annual Report of the Secretary General (various issues (2003-2017)). Thus, the oil market during the aforementioned mentioned period, has fluctuated in levels of supply and demand and world prices on an ongoing basis, which raised fears of possible repercussions on the global economy on the one hand, and the producers and consumers on the other. This has caused a number of important questions about the reasons for the fluctuations in prices and their possible patterns that can be observed at the present time and in the future. This fluctuation in prices has resulted in views on the mechanism of oil market operation and the main factors driving the high and low prices of oil. Hence, two groups of observers emerged: observers that the recent behavior of prices return to

the structural shifts in the oil market, as the surge in oil prices can be explained by the fundamentals of the hard market, the stagnation in the oil industry is mainly due to the long periods that witnessed a lack in the size of the investment, and to structural changes in the behavior of a number of key players, for example, producers outside OPEC, and consumers from outside the country of the economic cooperation and development. While the second group of observers found that the changes in fundamentals were not sufficiently large to trigger sharp cycles of oil prices over the past two years. Those who adopt this opinion believe that the oil market was distorted by the large irregular and volatile investments in the derivatives market (Demirbas, Omar Al-Sasi, & Nizami, 2017).

Total developments of the world oil stock during the period 2003 - 2017

These stocks include all the commercial and strategic oil stocks and those in the Caribbean Sea as well as stocks on sea ships, as the world oil stocks of various kinds rose and decreased depending on the nature of factors and changes in the oil market, which in turn can create imbalance in prices, which requires an effective role by oil-producing and consuming countries alike to work to rebalance prices since current developments in the global oil market reflect the significant impact of oil stocks of major consuming countries on the movement of oil prices, which fluctuate due to several factors, notably the high levels of US oil stocks as well as oil stocks in the OECD.

World stocks of crude oil reached 6012 million barrels at the end of 2003 whereas it witnessed an increase in its total stocks in 2005 to reach 6397 million barrels. In 2008, however, it was 6803 million barrels. World stocks of oil increased at the end of 2009 to nearly reach 6975 million barrels. This includes oil carried and transferred in trucks and some other independent stocks near consumption centers such as port of Caribbean countries, Singapore, Rotterdam as well as oil stocks which exist in a number of sea tankers as floating reservoirs. In spite of the developments in crude oil prices during the previous years, which passed the OPEC basket of \$ 140 a barrel at the beginning of 2008, and then dropped to about \$ 35 at the end of the year, however, the global oil stocks rose to about 7047 million barrels in 2010 , up by about 100 million barrels, equivalent to 1.4% compared with the levels prevailing at the end of 2009. It should be noted that the significant reduction by OPEC members in the ceiling of production in early 2009, which continued until the end of 2010 has contributed to reducing the surplus in supply in the market to reduce the increase in the stocks (El-Katiri, 2017). In 2011, the world oil inventories fell by 173 million barrels, or 2.4% compared with levels recorded in 2010, falling to 6994 million barrels. while oil inventories rose during 2012 and 2013, About 7092 and 7822 million barrels, respectively, up by 796 million barrels, or 11.3%, to the levels recorded at the end of 2012 (Al-Maamary, Kazem, & Chaichan, 2017). This was due to the increase in global oil supplies which was more than the increase in global demand for oil (Stocker, Baffes, Some, Vorisek, & Wheeler, 2018). The year 2014 was characterized by relative stability, reflecting the modest growth in the performance of the global economy, which resulted in an increase in the total global oil reserves, which reached about 8054 million barrels, an increase of about 429 million barrels, equivalent to 5.6% compared to 2013. At the end of the year, the total global commercial and strategic oil reserves reached 8842 million barrels, up by 750 million barrels compared to the same period of 2014, i.e. by 9.3% (Fishelson, 2019). In this period, the oil market has passed through a number of circumstances, including security disturbances, especially in the oil-producing and speculative countries in order to achieve high levels of profits in addition to maximizing the strategic role of countries in increasing their ability to cope with sudden fluctuations in the oil market, which was reflected in the levels of oil stocks. As these conditions that have emerged in the oil market prompted many producing and consuming countries to increase their oil stocks and build new stocks through which they aim to secure their oil supplies after this trend was limited to the major members of consumer countries of the Organization of Economic Cooperation and Development (OECD).

The Mutual Influence Between Oil Prices and Global Oil Stocks

There is mutual influence and a close relationship between the change in the world oil reserves and the change in world oil prices. Any fluctuation between them (change in stocks or prices) leads to instability and the balance of the oil market, especially the fluctuation in the levels of global oil stocks that have an indirect impact on the supply of the producing countries during the crises of surplus or deficit in the oil supply. Therefore, the stability and balance of this market will be a joint responsibility between the oil-exporting countries and importing countries and that dialogue and transparency between all parties to the energy industry in general and the oil industry in particular from the annexation Key data to ensure balance and stability in the oil market. Table 5 below shows the interplay between oil prices and global oil stocks as well as oil stocks in the OECD countries.

Table 5. A geographical comparison of Global oil stock and prices (2003-2017)

Year	USA	Europe	Asia	Total OECD stocks	Total global stocks	Average oil price
2003	1805.4	1316.2	830.5	3952.1	6012	28.10
2004	1872.5	1319.3	825.9	4017.6	6329	36.05
2005	1941.7	1370.9	787.4	4100.1	6397	50.64
2006	1963.3	1404.3	825.2	4192.7	6407	61.08
2007	1908.2	1390.8	810.6	4109.6	6591	69.08
2008	1981.9	1432.3	812.7	4226.9	6803	94.5
2009	2013.2	1425.4	792.1	4230.7	6975	61.6
2010	2057.4	1385.9	800.3	4243.7	7089	77.45
2011	2005.1	1331.2	805.8	4142.0	6994	107.4
2012	2061.4	1337.9	811.5	4210.8	7092	109.45
2013	2011.6	1339.3	799.1	4150.0	7822	105.45
2014	2139.3	1356.4	822.0	4317.8	8054	96.71
2015	2287.5	1463.0	851.1	4601.6	8842	50.94
2016	2295.9	1479	839.7	4614.6		42.92
2017	2300.7	1490.9	844.8	4636.4		55.53

Source: Iea (2017), International Energy Agency, Oil Market Report.

It is clear from the table that the share of foreign stocks of the countries of the Cooperation and Development Organization is different from the share of global stocks, which accounts for the large share of these stocks, as the share of these countries' share of total global stocks is 65%. Changes in the level of global stocks or changes in stock levels for OECD countries have the same effect on the global level of oil prices. It is well-known that the relationship between the levels of global oil stocks and oil prices is inverse, i.e., the higher the levels of oil stocks led to lower oil prices and vice versa, but the annual data of oil stocks on the level of global stocks or stocks in OECD countries shows that the relationship between these stocks and the oil prices during the period (2003 - 2017), as a direct relationship between them, except for the years (2009, 2014 and 2015), which have been inverse relationship, and despite the continuous fluctuation. During the period mentioned above, global stocks have seen continuous additions, (2003-2008), global oil reserves increased from 6012 million barrels in 2003 to 6803 million barrels in 2008. This was accompanied by a rise in prices from (28.10) dollars to (94.5) dollars, the relationship continued to have a positive effect on global oil price levels; the higher the global oil prices, the greater the global oil reserves. After oil prices dropped by \$ 32.9 per barrel in 2009 to \$ 61.6 per barrel compared to the previous year, oil stocks rose by 172 million barrels to 6975 million barrels, This is due to the unstable situation the oil market had witnessed, which fluctuated due to many factors that have had a great impact on this relationship. These factors are represented by the global financial crisis, which turned over time into an economic crisis that affected the global economies, especially the producing countries of oil, which had at the most important indicators on demand were the drop in the oil market. Although oil prices rose slightly in 2010, they reached about \$ 77.45 per barrel, or \$ 15.85 per barrel, but oil stocks rose to about 7089 million barrels. When oil prices rose in 2011 to \$ 107.4 a barrel, global oil inventories fell to 6994 million barrels compared with 2010 due to low levels of global economic growth. In other words, the relationship between oil prices and oil stocks has been reversed.

During the period 2012-2013, the relationship between oil prices and global oil inventories has become a positive one. The year 2012 witnessed a state of stability and relative balance in the global oil market despite the continued slowdown in global economic growth rates resulting from the Eurozone financial crisis and the slowdown in other major economies. Most of the indicators have seen a rise in the demand for oil from 90.6 million barrels to 92.0 million barrels respectively, as well as prices rose to about 109 dollars a barrel in 2012. In 2013, a modest decline in prices took place to reach the annual rate of raw materials basket of OPEC to about \$ 105 per barrel, in light of the abundance of supplies that were from non-OPEC countries, especially from North America, in addition to being affected by geopolitical factors and instability in some regions of the Arab countries. Such instability resulted in the rise of the world oil reserves during this period from 7092 million in 2012 to 7822 million barrels in 2013, an increase of about 730 million barrels, as the relationship became positive with the decline in prices in 2014, the world stock increased by 232 million barrels to 8054 million barrels, and

after the decline in oil prices again in 2015 from the previous year by about 45.77 dollars per barrel to about 50.49 dollars a barrel. This was accompanied by a rise in world stocks by 788 million barrels to 8842 million barrels 2015. This inverse relationship has persisted up to the present.

Therefore, the relationship between oil stocks and oil prices in the global market is affected by a variety of economic and non-economic factors which in turn have a significant impact in determining the nature of the relationship between them, not only the impact of oil stocks at the price level. Oil is not only an economic commodity but a strategic one governed by circumstances beyond the circumstances of traditional supply and demand of geopolitical and security conditions and environmental impacts, which, in turn, are important factors affecting the state of the oil market and the decisions of producers and consumers alike. In spite of the significant impact of oil stocks and the factors mentioned above in the rise or fall of the price, in addition there may be a mutual effect between stocks and market factors, thus making it sometimes difficult to determine the cause and effect. It may be that global oil stocks are the cause of price changes or the price of crude oil is the result of the balance between supply and demand or the price of oil is the effect of this balance that change any of the above will necessarily change the other one successive changes one by one. On the other hand, oil prices suffer from brokers in the world oil market. Some buy and sell oil in the spot market, whether crude or refined. Others are doing business in financial markets and oil-related future markets. So the overall effect of these factors leads to price swings between rise and fall (Ewing, Gormus, & Soytaş, 2018).

Conclusions

The movement of oil stocks, especially in the OECD countries, is one of the indicators affecting the oil market and its prices. It is expected that the total global demand will be lower compared with other energy sources due to the increase in population and economic growth in technology development. The commercial stocks of the industrialized countries account for the bulk of the total world stocks. The inverse relation between the global oil stocks and the oil prices took a change during the study period. It was characterized by a fluctuation between an inverse relationship and another positive relationship. The Global oil inventories have witnessed remarkable growth despite the significant changes in oil prices. The oil producing countries, especially the OPEC countries, should take into account fluctuations in the levels of global oil stocks, which have an impact on the world oil prices. The oil-producing countries should adjust their production quotas to directly contribute to reducing the decline in oil prices when the level of oil stocks in industrialized countries increases. Both oil producing and consuming countries should strive to achieve a fair price until the balance in the world oil market is achieved. The oil-producing countries should seek to build large oil reserves that will make them a reserve in the event of unexpected imbalances in supply and demand.

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