



*International Journal of Eurasia Social Sciences*  
Vol: 11, Issue: 42, pp. (1083-1091).

---

Article Type: *Research Article*

---

Received: 24.07.2020

Accepted: 27.11.2020

Published: 15.12.2020

## THE EFFECTS OF CORONAVIRUS ON GLOBAL ENERGY PRICES

**Rahmi İNCEKARA**

*Asst. Prof, Istanbul Kent University, Turkey, rahmi.incekara@kent.edu.tr*

*ORCID: 0000-0001-8052-9315*

### ABSTRACT

It appears that the impact of the crisis caused by the coronavirus (Covid-19) epidemic in the world is experienced in many different areas, especially in health. The drastic falls in oil prices indicate that energy is also one of those areas. Oil prices were the first to suffer from this lack of demand, as measures taken to prevent the spread of the epidemic slowed the economy, severely reducing demand for energy. Then there were also falls in the prices of natural gas and other energy sources. In terms of the impact of the epidemic on the energy sector, it is seen that the economic crisis experienced in energy importer countries is directly reflected in energy exporting countries. Even though decreasing energy prices, especially oil, firstly was a very positive development for energy-importing countries, the problems of the exporting countries in the framework of the global economic cycle will affect them eventually. The success of energy exporting countries in their struggle with the crisis will determine the degree of dependence on the exports of these energy products. Especially for countries whose share of energy exports in revenue budgets are very high and foreign exchange reserves are low, the low level of oil and gas prices for a long time can have serious economic and political consequences. In this study, the effects of coronavirus on energy prices, the effects of countries on energy prices, the course of changes in energy prices and future scenarios are examined.

**Keywords:** Economics, energy prices, coronavirus, oil, natural Gas.

**INTRODUCTION**

The coronavirus (Covid-19), which appeared in December in Wuhan, China, and soon led to a global outbreak, has been observed to cause great destruction, especially on the world's economic centers. In the six months after the outbreak, China, European countries and the United States, the most important centers of the global economy, seem to have been dragged into a deep economic crisis due to difficulties in the management of the health dimension of the problem.

Compared to the World Economic Depression of 1929-1930 and even described by some as a deeper crisis than it, the coronavirus crisis is considered certain to drag the world economy into a great recession in 2020. Declines in production already in the first quarter of the year and the rapidly rising unemployment rates give signs that the rest of the year will be difficult.

Although there are expectations that the second quarter will be the worst period of the year in terms of economic indicators, and then the recovery will begin with the third quarter, whether this will happen will be determined by the course of the epidemic from now on.

The energy sector is one of the areas where the recession in the economy is most affected and will continue to affect. It is necessary to express that 2020 will be a very difficult year for energy exporters, those whose reserves are sufficient will feel less the effects of the crisis, but countries whose reserves are insufficient and dependent on energy exports are going to face serious instability. Oil appears to be the energy sector most affected by the crisis so far. The fact that the oil exporting countries were late in agreeing on production quotas led to historic falls in oil prices in April.

Oil prices were on a downward trend as OPEC members and other exporting countries, led by Russia, who had escalated the competition between them before the Coronavirus outbreak, chose to further increase their production despite the decrease in demand. The extreme acceleration of the decline in demand along with the outbreak forced oil exporters gathered under the OPEC+ platform to decide on a supply restriction of 9.7 million barrels per day on April 9, 2020, but this decision did not prevent a drop in prices, as the decrease in demand was far above this figure. Although not as much as oil prices, there has been a significant decline in natural gas prices since the beginning of the year.

**METHOD**

In this study, the impact of the economic crisis due to the Coronavirus outbreak on the world energy market, how countries are affected by price changes, the course of energy prices in the following processes and future scenarios in energy prices are examined.

## EFFECT OF CORONAVIRUS ON OIL PRICES

In order to understand how much a rapidly spreading virus in China can affect global energy markets, it would be appropriate to briefly address the transformation of China's place in the global trade network since the early 2000s. China, which became a member of the World Trade Organization in 2001, has carried its place in the global economy to a critical position by making a serious breakthrough with its expansion policy. So much so that in 2019, the country ranked first with a share of 19.2 percent of global gross product according to purchasing power parity (World Economic Outlook, 2020). China is the world's largest producer and exporter, the second largest importer and the second most capital-attracting country (Dilek, Özdemir & İstikbal, 2019). China, which is the world's largest energy importer, has become a customer that almost every country exporting oil and gas wants to have.

The disease, which emerged in December 2019 in Wuhan and caused the first case of mysterious deaths, was declared to be a new type of coronavirus (Covid-19) on January 7, 2020. After the spread of the virus, speculation about oil demand in China, the world's largest oil importer, began. This situation has ignited the fuse of the historic decline in oil prices. On January 7, 2020, the price of Brent oil, which was \$ 68.27 a barrel, entered into an unpredictable downward trend. On January 13, 2020, the World Health Organization (WHO) announced the first case of coronavirus outside China. A \$ 10 drop in oil prices at the end of January was undoubtedly affected by the declaration of the WHO that called the virus a "pandemic" and also the cancellation or reduction of flights to China by many international airlines affected this.

The rapid spread of coronavirus outside China and among other countries has prompted governments to take unprecedented measures. Within the scope of quarantine, which was declared in many countries, cafes, restaurants and many retail chain stores were closed, malls were prohibited to serve, a large proportion of employees in public institutions were told to work from home, following that opportunity to work from home for employees in private sector was demanded.

Many businesses that are not suitable for working from home, such as the manufacturing sector, have been forced to stop their activities. This has led to a palpable decline in global energy demand. Although a serious part of the working population continues to live by staying at home during the day in accordance with quarantine rules and cause an increase in house type energy consumption, it does not reach the size of industrial consumption and cannot prevent a decrease in total demand.

In addition to the measures taken, strict restrictions on domestic and international travel and the declaration of a curfew in several countries/cities, the decrease in demand for oil (products) is increasing.

A decline in oil demand has put downward pressure on prices, while a further increase in the existing supply surplus as a result of a dispute between Saudi Arabia and Russia has led to historic falls in prices. The clearest example of this was seen as a result of the dispute from the OPEC+ meeting on March 9, 2020, when the price

of Brent-type crude oil, the most traded in international markets, depreciated by more than 31% in one day to \$ 34. As of this date, Brent oil has entered into a certain downward trend, and even the 9.7 million barrel/ day production reduction agreement reached by OPEC+ countries<sup>4</sup> on April 9, 2020 has not stopped the decline. The most important reason why prices have not been able to rise again to the level of 50-60 dollars as expected by oil-producing countries is that global oil demand has declined significantly in the first quarter of the year, with the coronavirus pandemic.

Demand for oil decreased by 20 million barrels per day according to the International Energy Forum (IEF), according to OPEC it decreased by about 10 million barrels per day. It is expected that prices will fall further after the stocks of energy importer countries, which have increased national oil stocks by turning record-breaking falling oil prices into opportunities with declining demand, are fully filled (IEF, 2020). According to OPEC, in March 2020, OECD countries' oil stocks increased by about 58 million barrels compared to the previous month (Table 1), and among these countries, the United States ranks first with an increase of 30 million barrels (Monthly Oil Market Report, 2020).

**Table 1.** Oil Stocks of OECD Countries (2017-1. O 2020, Million Barrels)

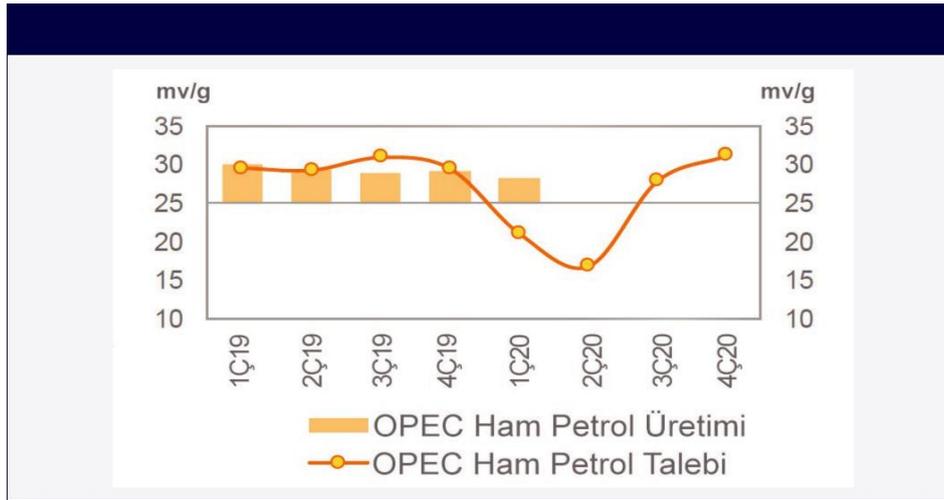
	2017	2018	2019	1Ç18	2Ç18	3Ç18	4Ç18	1Ç19	2Ç19	3Ç19	4Ç19	1Ç20
<b>OECD Karalarda ve Sulardaki Petrol Stokları</b>												
<b>Stok Durumları, mv</b>												
<b>OECD Kara Ticari Stoklar</b>	<b>2.860</b>	<b>2.873</b>	<b>2.906</b>	<b>2.816</b>	<b>2.812</b>	<b>2.865</b>	<b>2.873</b>	<b>2.877</b>	<b>2.936</b>	<b>2.946</b>	<b>2.906</b>	<b>3.002</b>
Americas	1.498	1.544	1.538	1.471	1.473	1.543	1.544	1.508	1.565	1.559	1.538	1.608
Europe	948	930	976	968	952	933	930	989	983	988	976	995
Asia Pacific	413	400	392	378	388	390	400	379	389	399	392	400
<b>OECD SPR</b>	<b>1.569</b>	<b>1.552</b>	<b>1.535</b>	<b>1.577</b>	<b>1.575</b>	<b>1.570</b>	<b>1.552</b>	<b>1.557</b>	<b>1.549</b>	<b>1.544</b>	<b>1.535</b>	<b>1.538</b>
Americas	665	651	637	667	662	662	651	651	647	647	637	637
Europe	481	481	482	487	491	486	481	488	485	482	482	485
Asia Pacific	423	420	416	422	422	422	420	417	417	416	416	416
<b>OECD toplam</b>	<b>4.428</b>	<b>4.425</b>	<b>4.441</b>	<b>4.393</b>	<b>4.387</b>	<b>4.435</b>	<b>4.425</b>	<b>4.434</b>	<b>4.485</b>	<b>4.490</b>	<b>4.441</b>	<b>4.541</b>
<b>Sulardaki Stoklar</b>	<b>1.025</b>	<b>1.058</b>	<b>1.011</b>	<b>1.036</b>	<b>1.014</b>	<b>1.041</b>	<b>1.058</b>	<b>1.013</b>	<b>995</b>	<b>1.012</b>	<b>1.011</b>	<b>1.179</b>
<b>OECD ülkeleri için yeteceği gün sayısı</b>												
<b>OECD kara ticari</b>	<b>60</b>	<b>60</b>	<b>68</b>	<b>60</b>	<b>58</b>	<b>59</b>	<b>60</b>	<b>61</b>	<b>61</b>	<b>61</b>	<b>64</b>	<b>86</b>
Americas	59	60	66	58	57	60	61	60	60	60	63	85
Europe	66	65	79	68	65	65	66	69	67	69	75	104
Asia Pacific	51	50	55	49	50	48	47	50	51	49	50	62
<b>OECD SPR</b>	<b>33</b>	<b>33</b>	<b>37</b>	<b>33</b>	<b>33</b>	<b>32</b>	<b>33</b>	<b>33</b>	<b>32</b>	<b>32</b>	<b>34</b>	<b>44</b>
Americas	26	26	29	26	26	26	26	26	25	25	26	34
Europe	34	34	39	34	33	34	34	34	33	34	37	51
Asia Pacific	52	53	59	55	54	52	49	55	54	52	53	64
<b>OECD toplam</b>	<b>92</b>	<b>93</b>	<b>105</b>	<b>93</b>	<b>91</b>	<b>92</b>	<b>93</b>	<b>94</b>	<b>93</b>	<b>93</b>	<b>98</b>	<b>130</b>

Source: (MOMR, May 2020)

Considering the Strategic Oil Reserve in the United States is nearing completion, on April 20, 2020, American type WTI crude oil fell to -37.63 dollars, an all-time low in futures markets, a sign that Brent oil may also see a negative pricing in near future. In other words, producers/companies have come to pay their customers to buy the oil they have to dispose of due to insufficient storage capacity. This is exactly what will happen with the

May 2020 delivery of WTI (Forbes, 2020). According to the OPEC+ Agreement dated April 9, 2020, the reduction of the supply surplus seen in the market has begun as of May 2020. However, the decline in demand is expected to continue in the second quarter of the year due to the poor management of the fight against coronavirus by many developed and developing countries.

In an environment where the supply continues declining, and the demand continues to weaken far from balancing, it is highly likely that oil prices will remain at \$ 30-35 for some time. (Chart 1)



**Chart 1:** Petroleum Supply-Demand Balance (2019-2020)

**Source:** MOMR May 2020, OPEC

#### EFFECT OF CORONAVIRUS ON NATURAL GAS PRICES

Similar to oil, there has been an oversupply in natural gas markets for some time. Currently, many countries use natural gas in many areas from warming to electricity production, especially in the last two years. The fact that, winter conditions have been above seasonal norms have been effective in the formation of a supply surplus. The demand for natural gas, which peaked during periods of harsh winter, has decreased noticeably with the warm winters. This started to put downward pressure on natural gas prices after the second half of 2018, before the Coronavirus outbreak (Shiryayevskaya & Malik, 2020). In the last decade, more and more natural gas producing countries to become exporters and countries that are already exporting through pipelines to reach new markets by removing geographical barriers, have invested in natural gas liquefaction facilities, which has led to an increase in gas supply.

The emergence of a large number of exporters and importers around the world is riveting the competition and changing market conditions in natural gas, as in many product markets. As the number of countries trading in liquefied natural gas (LNG) in the international arena increase, long-term contracts indexed to oil are replaced by short-term contracts and/ or a structure in which gas competes with gas and determines its own price. In this case, LNG has started to be bought and sold instantly through spot markets and has started to offer serious advantages for natural gas importer countries that do not want to adhere to long-term contracts (Özdil, 2019).

When it comes to LNG, four markets can be mentioned that have a decisive impact on prices: (Raimi, 2017)

- The Asian market, where Japan was at the center of demand for a long time, and then China was added to it (JKM),
- India market, which ranks first among emerging economies and in global energy demand (West India),
- The European market (NWE), where countries that have used pipe gas for many years have turned to LNG to improve their supply security),
- After being a net energy importer for almost half a century, the American market (GCM) became a net exporter of natural gas with the "shale revolution". In particular, the transformation that the United States has undergone is very important. The country began exporting LNG to many parts of the world with the "shale revolution" and started to compete with Qatar, the largest LNG exporter.

In the conditions created with the Coronavirus outbreak, a decrease in demand for natural gas is observed, similar to the demand for oil. Gas demand in many developed and developing countries has slowed along with declining production and electricity demand. This puts more downward pressure on prices in markets where there is already an oversupply. There are also countries that seize the opportunity and fill their stocks with cheap natural gas, whose declining prices have increased their purchases of LNG. Belgium, the UK, Spain, and Turkey are among the countries where LNG demand is increasing, respectively.

In contrast, although the supply of long-time LNG exporting countries such as Algeria and Trinidad Tobago has declined due to adverse conditions, an 87% increase in US supply and a decrease in demand in the Asian market cannot prevent a decline in prices (S&P, 2020). At this point, on April 24, 2020, LNG prices in the markets remained at an unprecedented low rate. LNG prices, which declined to \$ 3-4/MMBtu in the fourth quarter of 2019 due to excess supply, traded at \$ 1.94/mmbtu in Asian markets on April 24, 2020, \$ 1.70/mmbtu in European markets and \$ 1.80/mmbtu in American markets (Bloomberg, 2020).

#### **EFFECTS OF CORONAVIRUS ON COAL PRICES AND RENEWABLE ENERGY**

Coal, which is still used by many developed and developing countries, is another energy source affected by the Coronavirus outbreak. The economic stagnation in China and India, one of the world's largest coal importers, is itself causing a contraction of demand. In Indonesia and Australia, which are among the most coal exporting countries, the closure of mines to prevent the spread of the virus also negatively affects coal supplies. Despite this, there is also a surplus of supply in coal markets.

As a result of the contraction in demand due to coronavirus, the price of coal, which was \$ 69/ton on January 1, 2020 in spot markets, ultimately rose to \$ 70/ton on March 27 and has remained in a downward trend since then. As of May 1, the price of coal was recorded \$ 53.2 (Trading Economics, 2020).

High fluctuations in oil and natural gas prices and the fact that coal is the fossil fuel that causes the most carbon emissions present the coronavirus epidemic as an opportunity to accelerate investment in renewable

energy sources. But like many areas in the production sector, the production of renewable energy technologies is negatively affected by the coronavirus outbreak.

China is the world's largest manufacturer of solar panels and the country with the most investment in renewable energy. The economic downturn in China has also negatively affected solar panel and wind turbine production, causing many of the industry's leading companies to shrink. Disruptions in production, as well as in installation and logistics, affect the entire supply chain.

Many companies have announced that their projects in many regions, especially in Asia Pacific, have been delayed or cancelled due to economic difficulties. Given that the region has been at the center of growing global electricity demand for the past five years, it can be said that serious challenges await the renewable energy sector (CNBC, 2020).

Finally, it is expected that the relatively high production/installation costs of renewable energy technologies will continue to negatively affect renewable energy investments after the Coronavirus outbreak, in response to declining prices due to the excess supply and lack of demand observed in fossil fuels (Büyüksahin, 2020).

The coronavirus epidemic must be completely overcome for economies to be able to reactivate and return energy demand to the pre-pandemic situation. As it turns out, the fact that health services are quite different from each other in around two hundred countries where the pandemic occurred will also directly affect the rate at which the outbreak disappears. But with the epidemic, demand in some sectors is also expected to disappear completely.

Many companies from all around the world that switched to working from home on quarantine days, have adopted this situation as the "new normal" and have changed their working systems which may lead to a complete deletion of energy demand in some business lines. On April 14, 2020, the IMF announced that the Coronavirus outbreak had caused the Great Depression-like economic contraction around the world (IMF, 2020).

In addition, although it is a fact that energy demand will start to increase as economic activity begins to normalize, it is thought that the increase in demand of countries, which have increased their oil and gas stocks during this period, will be reflected in global markets later on. It is necessary to consider all these variables in estimations regarding energy demand.

## **CONCLUSION and DISCUSSION**

The epidemic caused by coronavirus has dealt a serious blow to the world economy. The course of the epidemic from now on will determine how far this impact extends. It can be seen that the epidemic, which first affected China, caused serious destruction in Europe and then in the United States in the second stage.

The devastation appears to be much greater in countries that are reluctant and unable to take the necessary steps to control the spread of coronavirus. In this respect, it is not surprising that the United States, the United Kingdom and Brazil took the top three places in the ranking of deaths due to coronavirus. High casualties in Italy, France and Spain were caused both by the delay in measures of these countries and by the lack of healthcare infrastructure.

Although countries that are more successful in controlling the epidemic are more advantageous in normalizing their economic activities, the course of the epidemic will again determine whether this normal will be the same as the pre-epidemic normal and how long it will take.

During the epidemic, the great difficulties experienced by many countries in providing very simple health products brought forward the concept of "self-sufficiency". Not only the production and supply of products such as masks, protective clothing or breathing apparatus, but also access to basic necessities has become one of the most important issues, as the outbreak has triggered panic shopping.

Energy question may not have been raised during the basic necessities crisis, the issue of self-sufficiency in terms of energy is one of the biggest lessons to be learned from the crisis. If there was a natural disaster or crisis that made it difficult to access the energy resources, which turn the wheels of the economy and are needed in all aspects of life, which countries would more easily survive this crisis? This question stands out as a question that foreign dependent countries must necessarily ask themselves, especially in terms of energy resources. If a crisis caused by a virus outbreak can make a very simple mask or respirator the most valuable product in the world, another crisis that may arise for another reason can make energy sources the most important element.

#### **ETHICAL TEXT**

"In this article, journal writing rules, publishing principles, research and publishing ethics rules, journal ethics rules are followed. Responsibility belongs to the author for any violations related to the article.

#### **REFERENCES**

- Bloomberght. (2020). "Costly Henry Hub", April 24.
- Büyükaşahin, B. (2020). "Petrol ve Doğal Gaz Piyasaları, Talep Analizi, Koronavirüs ve Ekonomik Sonuçları", Bilkent Energy Policy Research Center, April 23.
- CNBC. (2020). "The Coronavirus is Hitting Renewable Energy Supply Chains and Factories, and Could Slow the Global Energy Transition", April 6.
- Dilek, Ş., Özdemir. & B., Deniz A. (2019). Yüzyılında Türkiye-Çin Ekonomik İlişkileri, SETA Rapor.
- Forbes. (2020, Nisan 23). "Here's What Negative Oil Prices Really Mean", <https://www.forbes.com/sites/sarahhansen/2020/04/21/heres-what-negative-oil-prices-really-mean/#6c62b2095a85>

- IEF. (2020, Nisan 23). "The Coronavirus and its Impact on the Energy Sector", <https://www.ief.org>,
- IMF. (2020, Haziran 5). "World Economic Outlook, April 2020: The Great Lockdown", <https://www.imf.org/en/Publications/WEO/Issues/2020/04/14/weo-april-2020>.
- IMF. (2020). "The Great Lockdown: Worst Economic Downturn since the Great Depression", April 14. Monthly Oil Market Report – May 2020.
- Özdil, E. (2019). "Her Yerde Gaz Var", ENERJİ IQ, April 25.
- Raimi, D. (2017). "The Fracking Debate: The Risks, Benefits and Uncertainties of the Shale Revolution", Columbia University Press.
- S&P. (2020). "Global LNG Markets Brace for Unprecedented Shock in 2020 on COVID-19", Global Platts, April 22.
- Shiryaevskaya, A. & Malik, N., (2020). "Gone are the Days of Easy Money in Global Natural Gas Trades", Bloomberg, April 23.
- Trading Economics. (2020, Mayıs 2). "Commodities – Coal", <https://tradingeconomics.com/commodity/coal>.