



THE IMPACT OF NOVEL CORONAVIRUS (COVID-19) ON THE GLOBAL OIL AND AVIATION MARKETS



 **Majdouline Mhalla**

School of Business and Administration, Dongbei University of Finance and Economics, Dalian China.

Email: majdouline.mhalla@outlook.fr Tel: +8615042491503



ABSTRACT

Article History

Received: 15 March 2020

Revised: 22 March 2020

Accepted: 27 March 2020

Published: 3 April 2020

Keywords

Coronavirus
COVID-19
Oil industry
Aviation industry
Global economy
Airlines.

The Novel Coronavirus (COVID-19) is an infectious disease that is believed to have originated in Wuhan city, Hubei Province in China around the end of December 2019 and, had spread to 74 countries and territories so far; this virus is growing every day and is becoming a real concern for citizens, governments and businesses around the world. This paper describes the spread of the disease in China and the world and discusses its impact on the world economy focusing on two major industries the oil and the aviation industry. (COVID-19) have shown until now a negative impact on the global economy but in this paper, our main focus will be on two markets where china plays a major leading role; Several analysts estimate the negative impact on Chinese and Global economy if the epidemic continues. By analyzing the available data, the coronavirus scale is larger compared to any epidemic in the past due to its high contagion risk and asymptomatic cases, but the virus effects doesn't stand only on the number of cases but also on the economic losses, we believe that the Coronavirus will severely affect the air travel and the aviation industry in the short run, and will have a significant impact on the world oil industry production.

Contribution/ Originality: This study is one of very few studies which have investigated the two industries that are severely hit by the coronavirus (COVID-19) pandemic, which are the aviation and oil industries with a focus on the global market instead of focusing exclusively on the Chinese market.

1. INTRODUCTION

The first cases of the Novel Coronavirus (COVID-19) were identified for the first time in China, Wuhan, in the province of Hubei (in the east of the country). It belongs to the family of coronaviruses, with diverse effects from a simple cold to fatal pneumonia. The (COVID-19) virus is like the severe acute respiratory syndrome from (SARS) family viruses, which caused an epidemic in China in 2002-2003. With Asian stock markets plummeting, the price of a barrel of oil falling sharply, and the Chinese government ready to spend 171 billion dollars to support its economy, the anxiety and fear is spreading in economic circles as the coronavirus epidemic whose epicenter is in Wuhan (central China) continues to spread, with more than 80,000 people infected, and 2000 deaths in China, according to the latest numbers from China government Data Center by 2nd of March 2020. China, one of the pillars of the world economy, which represents 16.9 % of the world GDP by 2019 according to [International Monetary Fund \[1\]](#) is heavily affected by the toll of the coronavirus epidemic, exceeded that of SARS in 2002 and 2003, factory closures and containment measures further paralyze the second largest economy in the world at risk of slowing global growth. Oxford Economics lowered its Chinese growth forecast to 4% in the first quarter of 2020 from 6%. It now expects a growth of 5.4% for the whole year of 2020, far from the 6.1% recorded in 2019.

In this article we will try to analyze the impact of this epidemic on the world economy on both the oil industry and the Aviation industry.

This research uses a qualitative approach using document analysis, Qiu, et al. [2]. The review drew on a wide range of secondary data sources, including journal articles, newspaper articles, international organizations reports, and electronic literature databases, such as Web of Science.

2. THE SPREAD OF NOVEL CORONAVIRUS (COVID-19)

Based on a report published in the peer viewed journal the Lancet [3] by the consortium of Chinese medical experts who were charged with investigating the inception of what is now commonly known as the Wuhan Coronavirus by the Chinese Center for Disease Control (CDC) the first case of Novel Coronavirus (COVID-19) was a case of a person who had first experienced symptoms on the 1st of December 2019.

Between the 8th and the 18th of December 2019, seven cases later diagnosed with the novel Coronavirus were documented, two of them were linked with the Huanan Seafood Wholesale Market of Wuhan.

On the 30th of December, Li Wenliang, an ophthalmologist at Wuhan Central Hospital, alerted eight of his colleagues by message that he had discovered a mysterious illness, the resurgence of SARS, which killed 349 people in China from 2002 to 2003. The following day, the World Health Organization was informed of several cases of pneumonia in Wuhan.

On the 7th of January 2020, China discovers a new form of coronavirus, the 2019-nCoV.

Chinese authorities link the symptoms of the mysterious cases of pneumonia, which were increasing in the Wuhan area, and the discovery of the seventh type of coronavirus.

By the 20th of January the virus starts spreading in other countries, The United States confirmed their first case and Several countries in Asia, Thailand, South Korea, and Japan were reporting cases of coronavirus in their territories, five in total against 300 in China. Based on the work of Chinese researchers, the WHO decided that the coronavirus is transmissible from human to human.

By the 23rd of January 2020 Wuhan, the epicenter of the epidemic and its twelve million inhabitants were placed under quarantine. And amid the increase of new cases in China and the threshold of 10,000 infected exceeded with (213 deaths) the World health organization finally declared a global health emergency on January the 30th.

On the 31st of January Italy recorded its first cases after two Chinese tourists tested positive for the virus.

On the 2nd of February the first death was reported outside China in the Philippines, followed by another death in Japan in the 13th of February, the first death in Europe in France on the 15th of February and the first one in Taiwan on the 16th of February, also on the 12th of February, the Japanese health ministry announced that on the board of the Diamond Princess cruise 175 people were infected.

As of February 18, the daily infections in China drop below 2000 for the first time since January 2020. On 22nd of February Italy reported its First deaths and by February 29, Iran, Israel, Kuwait, Bahrein, Iraq, Afghanistan, Oman, Romania, Georgia, Lebanon, Algeria, UAE, Norway, Pakistan, North Macedonia, Greece, The Netherlands, Denmark, Northern Ireland, Wales, and Lithuania and Qatar all reported their first cases, with South Korea announcing the highest number of daily confirmed cases and Italy placing eleven municipalities in the North of the county under quarantine.

By the 2nd of March, all continents were infected by the Novel Coronavirus COVID-19 Figure 1 with more than 10 000 people infected outside China.

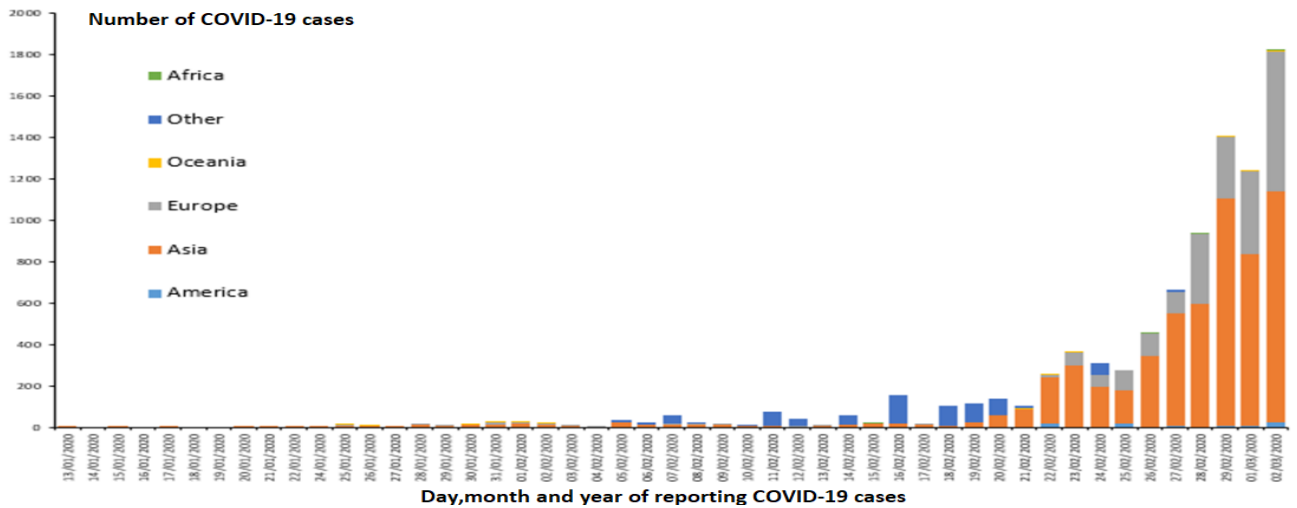


Figure-1. Distribution of COVID-19 cases by continent (except China), as of 2 March 2020.

Source: European Centre for Disease Prevention and Control [4].

3. THE ECONOMIC IMPACT OF COVID-19

3.1. Impact on the World Oil Industry

As the world's leading importer and second consumer, China needs more and more oil to fuel its economic growth. The growth in Chinese demand alone has been driving the crude market for years. The appearance of the new coronavirus in China has raised questions about its potential impact on the oil and aviation fuel markets. Since the beginning of the epidemic, crude oil prices have dropped in one week from 62 dollars a barrel to 57 dollars, before rising to 59 dollars on Friday, January 31st in the morning Figure 2. Correlation is not causation, but the slowdown in Chinese demand is real.

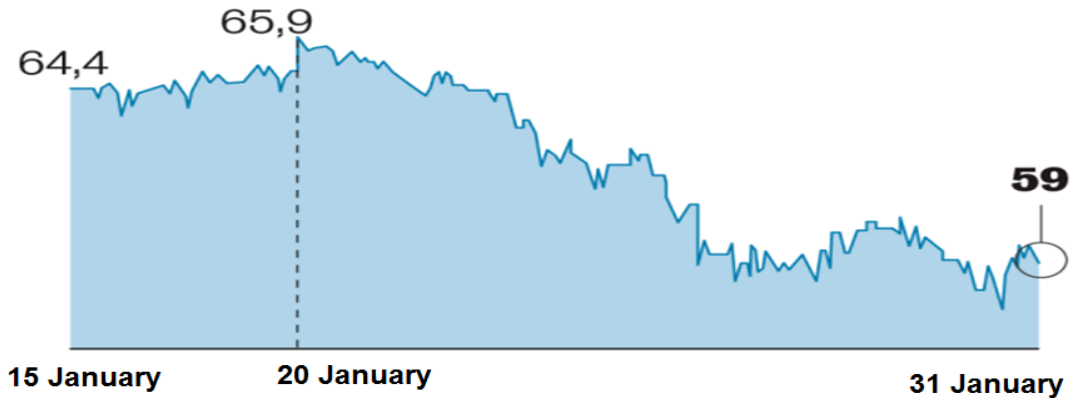


Figure-2. Brent Barrel Price, in US Dollar.

Based on the monthly report of The Organization of the Petroleum Exporting Countries (OPEC) the impact of the coronavirus epidemic on the Chinese economy has added to the uncertainties regarding overall economic growth in 2020 and by extension on global growth in oil demand in 2020. The report now forecasts demand growth of 0.99 million barrels per day this year, a forecast significantly revised down to 0.23 million barrels per day compared to previous estimates last month. OPEC notes also that China, transportation fuels, particularly aviation, should be affected in the first half of 2020. The impact was exacerbated by the coincidence of the epidemic with the Chinese New Year period, during which Chinese people usually travel to find their families or travel abroad. Fuels have in fact represented a major component of growth in Chinese demand in recent years. OPEC is even discussing cuts of 600 000 barrels per day but Russia isn't so keen on imposing those cuts yet.

The International Energy Agency (IEA) also warned in its January Monthly report that new coronavirus will have "significant" consequences on oil demand, whose growth forecast this year has been drastically revised down.

It has thus revised downwards by 365,000 barrels per day its expectations concerning the growth of crude demand for 2020, now expected at 825,000 barrels per day, the lowest since 2011, and forecasts a contraction in demand in the first quarter, a first in over a decade. The IEA, which advises developed countries on their energy policy, notes that the SARS epidemic in 2003 is often used for comparison purposes but that China has changed a lot since then. Chinese oil demand was 5.7 million barrels per day in 2003 and more than doubled to 13.7 million barrels per day last year. China accounted for more than three-quarters of the growth in demand in 2019. Today, it is at the center of global supply chains and travel to and from the country has increased enormously, increasing the chances of the virus spreading, said the IEA.



Figure-3. West Texas intermediate weekly price chart.

In January the market pushed its high as above 65 dollars/ barrel during Iran – US political tensions [Figure 3](#) and then crushed back down below 50 dollars/ barrel, one year low hitting off because of the effect of the coronavirus, this is the lowest price the oil market witnessed since January 2019. China is the 2nd largest consumer of oil so any slowdown in the Chinese economy has big economic implications on the world, therefore if it falters, the whole world oil structure will be shaking, some analysts are already forecasting that Chinese growth will down by at least 1% in the next quarter.

What makes coronavirus different from other epidemics in the past is the magnitude of the quarantine, this quarantine helps at containing the virus near term in terms of spreading and contagion but has a significant impact on the economic activity in China. As much as 20% of current oil demand has been curtailed in China due to the quarantines causing lack of use of transportation and travel, but eventually, the quarantine will end and everything will go back to normal but the real question here is, is it going to be sooner rather later, In the near term the falling price of oil will probably cause OPEC to make a production cut and as West Texas Intermediate(WTI) crude is now under 50 dollars a barrel, the United States may also start curtailing some production but any production cuts in the US will temporary and supply can easily be turned back on.

According to data through Monday 10th of February, the growth rate of new coronavirus cases in China has slowed to the lowest since Jan. 31st amid preliminary signs that new coronavirus cases are slowing in China, Oil prices rose again on Wednesday the 12th and Thursday the 13th of February, Brent crude was up 73 cents, or 1.3per cent, at US\$54.75 per barrel at 01:37 GMT. U.S. West Texas Intermediate (WTI) rose 46 cents, or 0.9per cent, to US\$50.39. reassured by the hope of a reduction in production by members of the OPEC + group and the measures taken to fight the epidemic of coronavirus, but this rose didn't last long, On Monday the 24th of February Oil prices plunged again during European trade due to risks that spread of viral pneumonia epidemic outside China.

Around 11:55 GMT, a barrel of Brent from the North Sea, was worth 56.05 dollars in London, down 4.19% compared to the closing on Friday.

In New York, the American barrel of West Texas Intermediate (WTI), for the same month lost 3.97% to 51.26 dollars. The spread of the epidemic in Italy and South Korea is putting oil prices under pressure, the viral pneumonia epidemic accelerated across the globe on Monday 24th of February. With a daily record of 231 new cases of contamination in the space of 24 hours, South Korea now counts more than 800 infected individuals.

In Europe, Italy became the first country on the continent to impose quarantine measures in a dozen municipalities in the north of the peninsula. The country officially lists a total of 219 cases of contagion and five deaths on Monday.

This sharp drop in prices on Monday puts an end to the growth of Brent and West Texas Intermediate (WTI), which was around 10% and 8% respectively since a recovery that started on February 10. Looking at the impact of the Coronavirus on crude oil prices, prices are continuing to sell off hovering right around 50-dollar range, However, it will likely break through that to the downside if we continue to see builds from the EIA, right now OPEC is pricing in significantly lower demand and the supplies are already quite high. It is always possible to create supply by releasing from strategic petroleum reserves and pumping additional output but it's difficult to spur any kind of demand whatsoever, prices need to come down in order for the demand to get higher. With airlines, cruise ships and businesses all at a standstill in China we will continue to see demand decrease spread throughout the crude oil industry and then see prices move lower.

The key uncertainty is how virulent the coronavirus will be, how it will spread and the policy response itself; An aggressive upfront policy response may shorten the extent of the outbreak itself because Asia became such an important source of oil demand, It still would have an impact overall.

3.2. The Impact of Covid-19 on the World Aviation Industry

3.2.1. Overview of the Impact on the Aviation Market

China was considered the world's third-largest aviation market in December 2019 after the United States and the United Kingdom, but 4 weeks right after, since the beginning of the outbreak in January 2020, China's ranking dropped to the 25th place just behind Portugal and slightly ahead of Vietnam.

The coronavirus clearly has a major impact on airline operations therefore on global aviation supply and demand, many flights are canceled either by the airlines themselves or as a result of authorities closing airports or routes.

Figure 4 shows that the number of weekly international seats operated from China has fallen by some 1.4 million seats in less than four weeks since the week commencing the 20th of January.

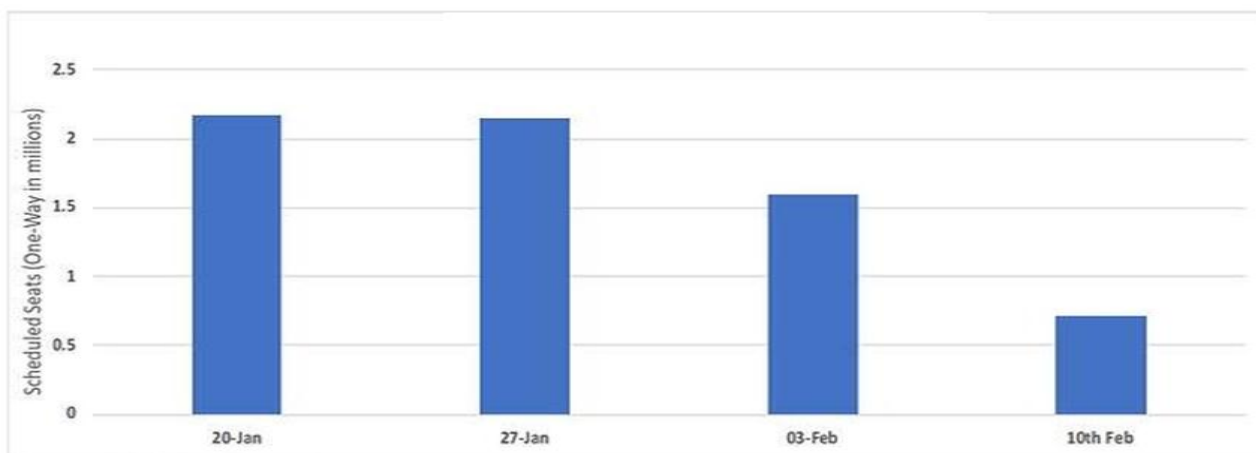


Figure-4. International capacity to and from China.

Source: OAG Schedules Analyser.

Country Markets	20-Jan	27-Jan	03-Feb	10-Feb	17-Feb	Var 20th Jan - 17th Feb	% Change 20th Jan - 17th Feb
Japan	328,554	328,120	249,233	131,211	83,542	-245,012	-74.6%
Korea Republic of	244,176	243,898	198,577	111,243	75,000	-169,176	-69.3%
Thailand	307,586	303,741	202,666	113,833	71,053	-236,533	-76.9%
Cambodia	59,268	56,988	38,211	33,543	32,294	-26,974	-45.5%
Hong Kong (sar) China	152,250	149,618	103,347	30,017	20,407	-131,843	-86.6%
Malaysia	81,424	81,146	74,920	52,264	20,194	-61,230	-75.2%
Chinese Taipei	133,895	127,398	95,169	49,878	12,801	-121,094	-90.4%
Viet Nam	81,495	77,440	43,041	10,580	11,526	-69,969	-85.9%
Russian Federation	35,288	34,502	26,989	18,309	11,501	-23,787	-67.4%
Canada	25,176	26,774	27,088	13,499	10,513	-14,663	-58.2%

Figure-5. International scheduled airline capacity from china top 10 markets.

Source: OAG Schedules Analyzer.

According to the Official Airline Guide (OAG) a global travel data provider the top three Asian countries that have been badly hit by the impact of the coronavirus epidemic are Japan that is the first market for Chinese travelers registered a drop in the scheduled airline capacity for more than 200,000 seats per week compared to the week of the 20th January, a 74.6% fall in four weeks, Thailand comes second as a country that benefits heavily from Chinese visitors especially tourists visiting the country registered a fall in capacity by more than 76 % from 20th of January till the 17th of February and the third one is South Korea that also registered a heavy fall of more than 69 % in its airline capacity Figure 5.

According to the same source (OAG) other major countries markets registered a dramatic reduction in capacity over the four weeks period, such as Indonesia (-92%), Singapore (-89%), Hong Kong (SAR) China (80%) and the United States (-86%).The banning Policies of certain countries also reflected directly to no capacity such as Italy whilst direct air links to other markets such as Hungary, Oman and the Maldives highlight the extent of the impact.

African airlines are also cautious of the coronavirus, six airlines from the continent that serves China suspended their flights, the national Carriers of Rwanda, South Africa, Mauritius, Seychelles, Morocco, and Kenya

For ICAO, the impacts of the current coronavirus epidemic will be greater than those noted during the previous SARS epidemic in 2003 because of two main factors, The first one is that China's current weight in world air traffic with international traffic to and from China has doubled since 2003 [5] while Chinese domestic traffic has increased fivefold over the same period. The second factor is the great reduction in air capacity to and from China since 70 airlines have suspended their international flights while another 50 have reduced their flights. For their part, Chinese carriers have reduced their overall number of seats by 40%. However, recalls the ICAO, before the outbreak of the coronavirus epidemic, the airlines concerned had initially programmed a 9% increase in their capacities to and from China in the first quarter of 2020 compared to the same period of 2019. Between the additional traffic expected from this increase in the number of seats, the capacity reductions finally decided because of coronavirus, no less than 16.4 to 19.6 million passengers will ultimately miss the call. And this substantial evaporation will result in an overall loss of turnover of \$ 4 to 5 billion. ICAO specifies that this shortfall does not take into account the impacts on the activity of air cargo operators, airports and air navigation providers.

With IATA predicting 4.7% capacity growth for 2020 as recently as December last year it's clear that the Coronavirus has the potential to fundamentally impair 2020's global airline capacity growth and its very probable that the growth number will be much lower. The virus outbreak will also have an impact on airlines' profitability and cash flows, the cancellations are costing the airlines huge amounts of money in terms of lost revenue and additional costs and deprive other segments of the travel industry, including hotels and retailers, of high-spending tourists.

3.2.2. The Impact on International Airline Companies

The (COVID-19) outbreak is causing a crisis among international airlines, which are worried about the negative repercussions on their activities and are taking measures accordingly, especially as their prices fall on the

stock market. Friday, February 28, Air France KLM plunged 7.4% at the opening, Lufthansa by 4.28% and EasyJet by almost 4%.

Lufthansa takes the lead in the face of the threat of a global pandemic of the new coronavirus. The German airline has announced a hiring freeze and several administrative measures to cut spending, in addition to changes to its flight schedule already in place to Asia. It wants to consolidate its position as much as possible to resist the (COVID-19) crisis, all hirings that were planned (4,500 at group level over the year, including 3,000 in Germany) are frozen, re-examined or postponed. The company is also encouraging people already in the job to take unpaid leave whenever they want and is considering expanding part-time work options. The company intends also to reduce the volume of its projects by 10% and that of its material expenses by 20%.

Air France-KLM estimates that the stop of flights to China decided in the face of falling demand since the start of the coronavirus epidemic, will weigh between 150 and 200 million euros on its operating profit from 2020. It has already had a strong impact on its bookings for long-haul flights: they have fallen by three and five points each month until May compared to the level of last year. These estimates are only valid in the current context, providing for a resumption of flights from April.

According to an internal letter obtained by the AFP (Agence France-Presse), The company Air France will take new measures of the economy, going from the reduction of expenses to the freezing of certain hirings, to counter the negative effects of the epidemic of coronavirus on its financial trajectory. In this context, the financial manager of Air France calls on managers to tighten so-called "discretionary" expenses such as travel, receptions and invitations, the use of consultants or seminars. He also asked for a continuation of the hiring freeze for "all services which are not directly linked to their operations". Certain promotion and marketing campaigns of Air France are also postponed while all departments are invited to reduce their operating expenses to the minimum level by guaranteeing the safety of their operations, also all of the IT and real estate investments planned for the coming period will be reviewed.

According to the French financial newspaper Les Echos, the KLM company sent a similar letter to its employees, signed by the hand of financial director Erik Swelheim, announcing "a hiring freeze, an incentive to take holidays during the downturn inactivity and a round of screw-on expenses for all administrative services".

Air New Zealand also announced for the first half of its lagged fiscal year a 34% drop in net profit and stressed the consequences on the airline's net result of the new coronavirus epidemic, The New Zealand airline published a net profit of 101 million New Zealand dollars going from July to December, against 151 million NZD during the same period a year earlier.

According to the General Manager of the company Greg Foran the company has taken steps to limit the consequences of the coronavirus epidemic but that the annual results will remain affected. The flights to Shanghai and Seoul have been temporarily suspended and the number of routes to Japan and Hong Kong has been reduced. Between February and June 2020, the company estimates that the total number of flights to Asia will decrease accordingly by 17%.

Australian airline Qantas Airways has announced that 18 of its aircraft will remain on the ground until the end of May. Staff recruitment is frozen and the 30,000 employees will have to use their annual leave because the demand for the Asian market is falling sharply. The losses should reach 98 million US Dollars for the company.

Scandinavian airline SAS announced widening net losses for the first quarter of the current fiscal year, in late January 2020, the company suspended flights to Beijing and Shanghai due to the coronavirus epidemic, then specified that this suspension would be maintained until the end of March. It assesses the losses following the cancellation of these flights at 200 million Krone.

African and Middle Eastern airlines companies also started to take measures to limit their economic losses, according to an interview with Allan Kilavuka, the interim president and chief executive officer of the Kenya Airways at The EastAfrican, the Kenyan weekly newspaper The coronavirus epidemic (COVID-19) will be a major

blow to the revenues of Kenya Airways (KQ). The company anticipates a loss of revenue of approximately 8 million dollars, both for passengers and freight.

The national Israeli company El Al also announced last week that it could remove 1000 of its 6000 employees and that its losses would be between 50 and 70 million dollars for the first quarter alone. Losses that could push the company to major downsizing.

4. DISCUSSION AND CONCLUSION

The coronavirus will have a significant impact on China but it will also have wider implications on the world oil industry, China is cornerstone of oil demand growth if a big share of that demand is taken it has a big global impact, and the stability witnessed in the market from time to time is all psychological it's not really driven by the supply itself. A cut by OPEC will not contribute much to the market today, it can only help the market in the future if the coronavirus is contained by the end of March or early April it could have a significant impact on supply and the price if it takes longer to contain the cut on supply will definitely be needed.

The impact of the coronavirus is still difficult to measure in the long term, but the demand is likely to remain depressed as the epidemic expands to South Korea and potentially to other major regional economies who have been forced to stop their activities, the immediate effects are already numerous, for a simple reason: China is the world's largest importer of oil. The shutdown of a part of its economy, with consequences for air and road transport as well as industrial activity, reduces the need for hydrocarbons. The growth in Chinese demand alone enabled the oil-producing countries and the majors of the sector to approach 2020 in relative serenity.

For the aviation industry, the development of the epidemic in Europe and in particular in Italy risks having a disastrous impact on intra-European air traffic, which represents the majority of the activity of airlines in the continent. Tourism players are also in the stock market turmoil.

The slowdown in demand caused by the spread of the epidemic caused by the new coronavirus is leading many European companies to reduce their flight programs and put in place savings measures.

The problem that major air transport groups will be facing is whether they should leave planes on the ground or redeploy them to other markets. The decision is extremely difficult, tackling a few devices is expensive since the companies will have to continue paying the plane's rents. But redeploying them is also detrimental when the other markets are not very dynamic. Increasing capacity can indeed lead to lower prices for filling aircraft; a phenomenon which is always difficult to reverse thereafter.

If we look back to previous epidemic SARS the declining in traffic lasted five to seven weeks, then there was a recovery starting from the tenth to the fifteenth week but the coronavirus impact will be greater than SARS simply because China as a market is larger and represents an important share in the world aviation industry. Also, the virus out passed SARS in terms of deaths and infected people, many countries fear the outbreak and decided to keep their airports closed to people traveling from China which can keep overseas airlines taking their services out of the systems until the end of March.

However, this outbreak doesn't have only negative impacts but also a positive one, in the aviation industry the drop in demand for oil and therefore a decline in oil prices can be favorable for the airline companies considering an oil to be one of the main costs for airlines.

Overall, The novel coronavirus will severely affect the air travel and the aviation industry in the short run, and will have a significant impact on the world oil industry production but it's still too early to say how big the impact of the novel Coronavirus will be as the news about the virus continues to evolve and the virus outbreak epicenter is moving from the Asian continent to other sides of the world.

Funding: This study received no specific financial support.

Competing Interests: The author declares that there are no conflicts of interests regarding the publication of this paper.

REFERENCES

- [1] International Monetary Fund, "World Economic Outlook Database October 2019. Retrieved from <https://www.imf.org/external/pubs/ft/weo/2019/02/weodata/>. [Accessed 23 February 2020]," 2020.
- [2] W. Qiu, C. Chu, A. Mao, and J. Wu, "The impacts on health, society, and economy of SARS and H7N9 outbreaks in China: A case comparison study," *Journal of Environmental and Public Health*, vol. 2018, pp. 2710185-2710185, 2018.
- [3] J. F.-W. Chan, S. Yuan, K.-H. Kok, K. K.-W. To, H. Chu, J. Yang, F. Xing, J. Liu, C. C.-Y. Yip, and R. W.-S. Poon, "A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: A study of a family cluster," *The Lancet*, vol. 395, pp. 514-523, 2020. Available at: [https://doi.org/10.1016/s0140-6736\(20\)30154-9](https://doi.org/10.1016/s0140-6736(20)30154-9).
- [4] European Centre for Disease Prevention and Control, "Situation update worldwide, as of 1 March 2020 08:00. (2020). Retrieved from <https://www.ecdc.europa.eu/en/geographical-distribution-2019-ncov-cases>. [Accessed 1 March 2020]," 2020.
- [5] A. Siu and Y. R. Wong, "Economic impact of SARS: The case of Hong Kong," *Asian Economic Papers*, vol. 3, pp. 62-83, 2004. Available at: <https://doi.org/10.1162/1535351041747996>.

Views and opinions expressed in this article are the views and opinions of the author(s), Journal of Asian Scientific Research shall not be responsible or answerable for any loss, damage or liability etc. caused in relation to/arising out of the use of the content.