

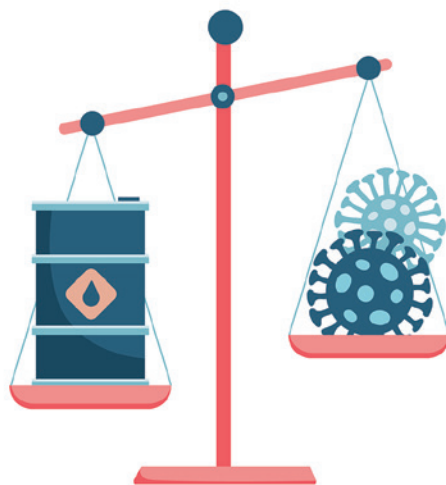
RECENT DEVELOPMENTS IN THE CRUDE OIL MARKET AS IT RELATES TO THE ASIAN OIL INDUSTRY

The emergence of the novel coronavirus, COVID-19, in Wuhan, China, has led to a precipitous drop in the price of, and demand for, crude oil. Due to the severity of the acute respiratory syndrome (SARS) outbreak in 2003 [1], the world has been on high alert to this new viral threat sweeping the globe. COVID-19 is a highly contagious respiratory infection often accompanied by symptoms including high fever, extreme fatigue, and dry cough.

The worldwide case fatality rate of COVID-19 is approximately 5.6% [2], compared to the case fatality rate of SARS which ranged from 9.7% to 16.7% [3]. While the relative lethality rate of COVID-19 is low in comparison to SARS, the greatest threat of COVID-19 lies in its insidiously high rate of transmission. In a bid to limit the spread of the coronavirus, over 180 countries have put in place travel restrictions which have drastically reduced the global energy consumption for transportation. Due to the coronavirus pandemic, factories, which were forced to close, are currently attempting to reopen in order to help sustain the struggling economies.

Caused by the lack of active factories, China, which is a major hub of manufacturing, has dramatically reduced their imports of crude oil. The US' Energy Information Administration (EIA) estimates that China's petroleum and liquid fuels demand has been diminished by an average of 190,000 barrels per day throughout March [10] corresponding to the number of coronavirus cases and fatalities. However, the attempt to restart the Chinese economy may catapult the demand for oil by returning production to normalcy. Other countries which are significantly affected by the pandemic include South Korea, Japan, and Singapore. Japan has recently seen the lowest activity from its factories that it has witnessed in the last seven years [12]. Similarly, companies in Korea have temporarily shut down factories and set in place self-quarantines [12-14]. Not only does COVID-19 inhibit factory production, it also disrupts the supply chain and the demand for products. Owing to these contributing factors, Singapore's Prime Minister, Lee Hsien Loong, has forewarned of a possible recession instigated by the fallout from the virus [15].

In response to lowered demand, the Organization of Petroleum Exporting Countries (OPEC) has seen a sharp decline in oil prices since the beginning of 2020, dropping from 68.86 USD per barrel on January 10 to 55.18 USD per barrel on February 7 [16]. While oil producers in the Middle East urged buyers to procure more crude oil, the price of crude dropped yet again to a paltry 16.85 USD per barrel as of April 1 [16,17]. This sudden drop was the direct result of a conflict between Saudi Arabia, representing



OPEC, and Russia, on March 6, concerning the issue of cutting oil supplies. Russia capitalised on the concurrent emergence of COVID-19 to distance itself from OPEC and refuse oil supply cuts in order to counteract the American shale producers and buoy its political agenda [18]. Ultimately, the dispute between Russia and OPEC has sparked an oil price war lowering the cost of crude oil. Most saliently, throughout March, OPEC has increased production to just over 28 million barrels per diem with Saudi Aramco supplying a massive 12 million barrels per day [19]. This production war continues to force down the price of oil. Russia and Saudi Arabia are locked in a price war exacerbated by limited storage space and already depressed prices. A Saudi-led OPEC in tandem with Russia, and its allies, had convened on April 9 to ostensibly settle the price war by instating a production cut of 10 million barrels per day [20]. The deal hit a roadblock as Mexico was only willing to curtail production by approximately a quarter of the amount needed to help OPEC reduce production by 10 million barrels per day. Yet, with the insistence of the US government, an oil cut of 9.7 million barrels per day throughout May and June was achieved [21]. Although the oil cut has marginally improved the price of oil, preventing single digit oil prices, future prospects are looking grim. It is necessary to halt oil production for the sake of maintaining the status quo; however, inventories have already started to fill to capacity and may require another production cut to save the oil industry. The main issue at hand is whether or not another production cut is even feasible.

For the time being, this drop in oil prices has come at a very auspicious time, giving many small oil refineries throughout Asia a brief respite during a period of decreased demand in oil products.

Many small-scale "teapot" refineries in China were suffering due to the coronavirus, and cheaper crude oil has led to an increase in both profit margins and productivity [22]. While, the largest producers of oil products in Asia, such as India and Indonesia, are all benefiting from access to less costly oil. Indian oil refineries now have greater access to different grades of crude oil [23]. Indonesian oil and gas company PT Pertamina has taken advantage of the situation in order to obtain more oil, while also assuring that domestic supplies of fuel and LPG will remain unobstructed [24,25]. Yet, as storage capacity is filled, and a surplus of oil products emerge on the market, it is evident that oil refineries throughout Asia are experiencing the calm before the storm.

Thanks to signs indicating increasing productivity, the previously dire situation of the Asian oil industry has uncovered a silver lining, ironically, due to the exact source of its decline. Yet, the foreseeable future of the oil industry remains uncertain as more countries are becoming heavily infected by the virus, while not yet employing the extreme methods that China utilised to halt further spreading. Furthermore, if countries descend into recession, the impact of coronavirus on the oil industry may continue to reverberate for a considerable duration. Restarting factory operations may serve as a temporary solution to increase the price and demand of oil, but the global demand for products may not reach a point that allows for a full recovery.

In the last few weeks, the oil industry has received a double blow due to the geopolitical issues between Russia and Saudi Arabia (Non-OPEC and OPEC) compounded by the mounting concern over COVID-19. The price of crude oil is currently significantly lower because of this confluence than it was just a couple of months ago. However, the hope is that as grave consequences, resulting from COVID-19, subside in the coming months, customer demand and travel will begin to return to close to baseline, thus providing a much-needed boon for the crude oil market.

References

- [1] <https://www.cdc.gov/about/history/sars/timeline.htm>
- [2] https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200406-sitrep-77-covid-19.pdf?sfvrsn=21d1e632_2
- [3] <https://www.who.int/csr/sars/en/WHOconsensus.pdf>
- [4] https://www.who.int/csr/sars/country/table2004_04_21/en/
- [5] <https://www.businessinsider.com/wuhan-coronavirus-officials-quarantine-entire-city-2020-1>
- [6] <https://www.bloomberg.com/news/articles/2020-02-06/china-travel-bans-leave-thousands-stranded-around-the-world>
- [7] <https://www.forbes.com/sites/siminamistreanu/2020/02/23/chinas-factories-are-reeling-from-forced-coronavirus-closures/#4be412f373f2>
- [8] <https://www.bloomberg.com/news/articles/2020-02-23/china-is-pushing-factories-to-resume-even-as-death-toll-rises>
- [9] <https://www.nytimes.com/2020/02/17/business/china-coronavirus-economy.html>
- [10] https://www.eia.gov/petroleum/weekly/archive/2020/200212/includes/analysis_print.php
- [11] <https://www.nytimes.com/2020/03/12/business/china-coronavirus-economy.html>
- [12] <https://www.reuters.com/article/us-china-health/coronavirus-infects-hundreds-in-chinas-prisons-as-global-markets-take-hit-idUSKBN20F01P>
- [13] <https://www.reuters.com/article/us-china-health-samsungelec/south-koreas-samsung-electronics-closes-mobile-device-plant-after-coronavirus-case-confirmed-yonhap-idUSKBN20019R>
- [14] <https://www.reuters.com/article/us-china-health-southkorea-business/some-samsung-hyundai-workers-self-quarantine-as-korean-inc-braces-for-virus-impact-idUSKCN2010F8>
- [15] <https://www.reuters.com/article/us-china-health-singapore-economy/singapore-pm-says-recession-possible-due-to-coronavirus-outbreak-idUSKBN2080MM>
- [16] https://www.opec.org/opec_web/en/data_graphs/40.htm
- [17] <https://www.reuters.com/article/us-china-health-energy/coronavirus-hits-demand-for-oil-energy-idUSKBN2072EC>
- [18] <https://www.aljazeera.com/indepth/opinion/fall-opec-age-oil-price-wars-200312124946313.html>
- [19] <https://www.bloomberg.com/news/articles/2020-04-01/opec-supply-rose-in-march-as-saudis-geared-up-for-price-war>
- [20] <https://www.wsj.com/articles/opec-seeks-to-rally-producers-over-fears-of-filled-storage-11586188285?ns=prod/accounts-wsj>
- [21] <https://www.nytimes.com/2020/04/12/business/energy-environment/opec-russia-saudi-arabia-oil-coronavirus.html>
- [22] <https://www.scmp.com/economy/china-economy/article/3074703/chinas-teapot-oil-refineries-could-become-money-printing>
- [23] <https://economictimes.indiatimes.com/industry/energy/oil-gas/indian-refiners-get-rare-oil-cheap-as-coronavirus-chokes-demand-in-china/articleshow/74278182.cms>
- [24] <https://www.hellenicshippingnews.com/indonesias-pertamina-plans-to-import-more-crude-amid-oil-price-drop/>
- [25] <https://jakartaglobe.id/business/pertamina-guarantees-fuel-and-gas-supply-during-covid-19-outbreak>

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