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THOUGHT LEADERSHIP: AN OIL PRICE WAR AMID A GLOBAL PANDEMIC



AN OIL PRICE WAR AMID A GLOBAL PANDEMIC

Following a remarkable year for equity markets in 2019, where the S&P 500 returned 30% (in US\$ terms) and the ASX 200 returned 18% (in A\$), 2020 began exactly where 2019 left off. In the first six weeks of 2020, the S&P 500 returned 4%, while the ASX 200 returned 7%. The strong start to the year was despite both the sudden escalation of geopolitical tensions between the United States and Iran in early January, and the emergence of the COVID-19 outbreak in Wuhan, China. While the geopolitical tensions were short-lived, the COVID-19 outbreak was escalating with every passing day, both in terms of the number of confirmed cases and deaths, as well as the draconian containment measures the Chinese Government implemented to try to stem the spread of the virus.

It was when the COVID-19 outbreak escalated outside of China's borders that financial markets panicked. The rapid escalation of the outbreak in South Korea, Iran and Italy in mid-to-late February brought a renewed focus to the potential breadth and duration of the global outbreak. From 20 February (the year-to-date high of most global equity indices) to 6 March, the S&P 500 fell by 12% and the ASX 200 fell by 13%.

If the COVID-19-induced market volatility was not enough for investors to stomach, on 6 March, the Organisation of the Petroleum Exporting Countries (OPEC) could not strike a deal with Russia to cut oil production. A cut in production was necessary to maintain the oil price at approximately \$50 per barrel, given that the COVID-19 containment measures had caused a sharp contraction in global oil demand. Instead, Russia opted to increase production, which was then matched by a response from Saudi Arabia saying it would implement even more drastic increases to production. This sent already volatile markets into a deeper tailspin. The oil price fell by 25% to just over \$30 per barrel and global share markets fell 7% on the Monday following the failed OPEC talks. It was the start of a treacherous week for financial markets, in which the oil price sank to a nearly 20-year low of \$20 per barrel.



The COVID-19 outbreak, and the associated containment measures, are expected to cause global oil demand to fall in 2020 for only the third time in 30 years. The rash decisions by Russia and Saudi Arabia to trigger an oil price war by increasing supply when demand is falling have led to sharp and divergent demand and supply shocks. Oil price wars have certainly happened before, but this is the first where there have been simultaneous supply and demand shocks. Previous oil price crashes have been caused by a severe demand shock or a severe supply shock, but not both.

In this month's article, we discuss the ongoing oil price war, including providing the supply and demand dynamics that led to the disagreement between OPEC and Russia. We delve into the expected winners and losers of this oil price war, highlighting why this war is expected to have far fewer winners with even less meaningful benefits than previous oil price wars because of the COVID-19 global pandemic. We look at the impact that the oil price war has had on financial markets, including US credit markets, equity markets and infrastructure assets during this very volatile and unprecedented period.



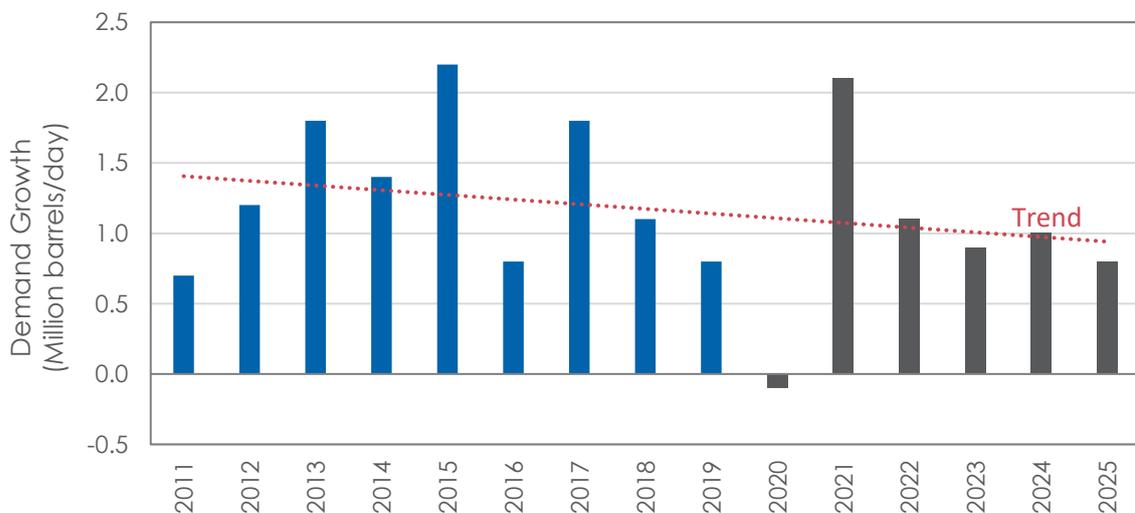
THE MAKINGS OF AN OIL PRICE CRASH

So far, 2020 has proven to be a perfect storm for an oil price crash. In the following sections, we discuss the demand-side and supply-side factors that have created an environment ripe for friction between the oil producing heavyweights. Opposition rather than cooperation prevailed, which had the unfortunate consequence of causing the oil price to crash to its lowest level in nearly 20 years.

Demand Shock

The global demand for oil is highly correlated to global growth. The weakening global growth landscape over the past few years has caused growth in oil demand to slow. Growth in global oil demand was weaker in 2019 than in the previous few years, in large part because of a more sluggish global economy.

Chart 1: Global Oil Demand Growth, 2011 - 2025



Source: International Energy Agency

Note: The blue bars denote actual figures, while the grey bars denote forecast figures.



Compared to 2019, growth in global oil demand so far in 2020 is weaker by many magnitudes. The COVID-19 outbreak that has defined the economic landscape has unsurprisingly caused a deep contraction in oil consumption globally. The International Energy Agency (IEA) has projected a contraction in global oil demand growth for 2020, as shown in Chart 1. It is important to note, however, that this projection was calculated in early March, before the escalation of COVID-19 containment measures implemented around the world. As such, the contraction in oil demand growth is based primarily on the outbreak and response in China in the first two months of the year.

While the figures are not inclusive of the full extent of the global spread of COVID-19, looking at the impact of the containment measures in China is a good place to start to get a sense of the full oil demand picture. China is the largest consumer of oil in the world and the most significant contributor to growth in global oil demand. When the Chinese Government implemented draconian lockdown measures across several cities and provinces in late January, much of the Chinese economy ground to a halt. Travel restrictions, working from home measures, cancelled holidays and a dramatic interruption to global supply chains caused the country's demand for oil to plummet. According to the IEA, China's demand for oil in the first two and a half months of 2020 fell by at least 20%, equivalent to 3 million barrels of oil a day. According to the US Energy Information Administration, in 2019, the globe consumed 100 million barrels of oil per day, so China's fall in oil demand constitutes a 3% fall at a global level.

Since the IEA's projections in early March, countries around the world have implemented varying degrees of containment measures. When we consider that the US, Germany, France, Italy, Spain, the UK and Canada consume 31 million barrels of oil per day, and that all of these countries have been significantly affected by COVID-19, a 20% drop in their oil consumption would cause a total fall in global oil demand of close to 10 million barrels of oil a day.

How far global oil demand will fall over the course of 2020 depends largely on the severity and duration of the COVID-19 containment measures. It is anyone's best guess at this point as to how the pandemic plays out, but it goes without saying that the containment measures could be in place for a while yet. As such, the global demand for oil is expected to drop year-on-year, for the first time since the GFC and for only the third time in 30 years.

Oversupply

The United States, Russia and Saudi Arabia have been the world's top three oil producers for several decades, with their combined market share accounting for 43% at the end of 2019. While Russia's and Saudi Arabia's market shares have been relatively steady over the past two decades, the US market share has been climbing rapidly, particularly since the late 2000s, as shown in Chart 2.



The surge in American oil production is impressive - the US has doubled its daily oil production in less than a decade. The success has been because of increased productivity and improved efficiency in oil extraction techniques, specifically through the development of hydraulic fracturing (also known as fracking) and horizontal drilling. Fracking, while controversial in its intensive water and toxic chemical use, has proven to be incredibly beneficial for oil companies specialising in shale oil. As a percentage of overall crude oil production in the US, shale oil has increased from about 10% in 2008 to 63% in 2019.

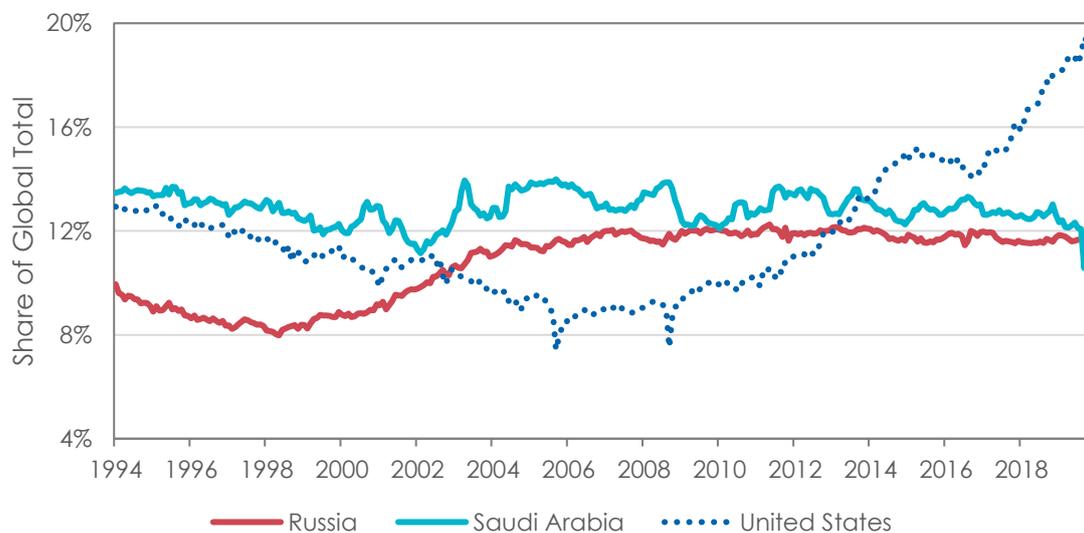
This rise in the US's dominance in global oil production was one of the main triggers for the 2014-16 oil price war. American oil companies were continually producing more and more oil, despite there not being a meaningful change in demand. In the case of the 2014-16 price war, OPEC (formed in 1960 in an effort to unite the world's major oil-producing countries so as to manage the supply of oil and thus ensure fair and stable oil prices for producers), led by Saudi Arabia, did not make the necessary supply cuts to

ensure a stable oil price. As such, the price of oil crashed in response to the global oil glut. While lower oil prices would most certainly cause economic pain for Saudi Arabia and other oil-producing nations, the implications for high-cost American oil producers would be worse. Saudi Arabia was trying to force American oil companies into bankruptcy, and to shore up market share.

Following the oil price crash, OPEC forged an alliance with Russia and others, known as OPEC+, and agreed to reduce production to support an oil price recovery. The oil price increased from its low in the oil price war of \$26 per barrel to a high of \$75 per barrel in 2018.

While OPEC+ had moderated its oil production over the past few years, the United States had continued to increase its production. So, in the first few months of 2020, when China's oil demand plummeted as a result of the attempted containment of COVID-19, there was a significant oversupply of oil. Without production cuts, this would inevitably cause the oil price to fall.

Chart 2: Top Three Oil Producers, 1994 - 2019



Source: US Energy Information Administration



Events that Led to an Oil Price War

The OPEC+ alliance had been working reasonably well together over the past three years to support higher oil prices through coordinated production cuts. So when the IEA released a report saying that the shutdown the Chinese Government had implemented to contain COVID-19 caused global oil demand to fall by three million barrels per day, OPEC+ convened on 6 March to discuss further production cuts. Saudi Arabia proposed a cut in line with the shortfall in demand. However, Russia, acting alone, refused to agree to Saudi Arabia's proposed production cuts, and instead announced that it would increase production.

Russia's motives are relatively transparent. Russia has been suffering from economic sanctions placed on the nation by many countries following its seizure of Crimea in 2014. It is also frustrated with the state of play in oil markets. The United

States has been riding on the coattails of OPEC+ for the past few years. Every time OPEC+ cuts production to support the oil price, American oil producers ramp up production, to both take advantage of the higher oil prices and to shore up global market share. Russia did not want to suffer through further production cuts, to the benefit of American oil producers.

Saudi Arabia reacted to Russia's proposal by saying that it would not only increase production, but also slash the price of its exported oil. Markets reacted aggressively to the OPEC+ fall-out, with the oil price tumbling by 24% to \$31 per barrel when markets re-opened on Monday, 9 March, following the fracturing of the OPEC+ alliance on the previous Friday. This represents the largest one-day fall since 1991. The oil price has continued to fall, and at the time of writing, is hovering around \$25 per barrel.

Chart 3: WTI Crude Oil Price, 1986 - 2020



Source: US Energy Information Administration



THIS OIL PRICE WAR HAS FEW WINNERS

Oil price wars do not often have many winners, but the timing and nature of the collapse in oil prices this time around is expected to have even fewer winners, with even less meaningful benefits.

Consumers

Consumers, particularly those in oil-importing countries where the benefit of the lower oil price has been passed down to the consumer, are typically one of the most obvious benefactors of oil price wars. Heating homes and driving cars becomes notably cheaper, which, in turn, has a positive impact on residual disposable income. Typically, this boosts demand and investment in non-oil sectors of the economy.

However, consumers around the world are currently living in unprecedented times. With strict restrictions on travel, and lost incomes from a staggering surge in lay-offs, consumers are unlikely to see much benefit of lower oil prices, if any at all.

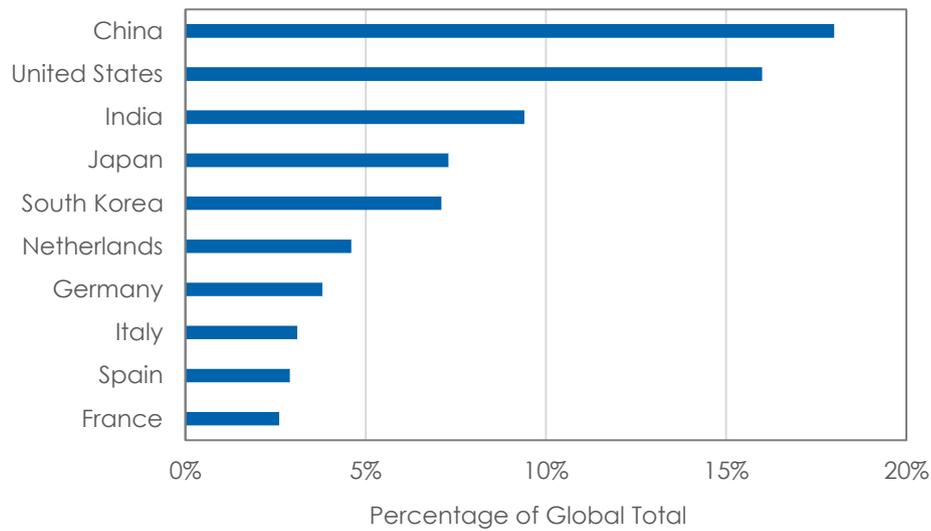
Oil-Importing Nations

Over 75% of countries are net importers of oil, and a drop in the price of crude oil provides them relief through lower energy import bills. In turn, these countries are expected to see an improvement in their current account balance, and in their fiscal strength, depending on the degree to which the governments pass the oil price cut on to consumers. Countries with a heavy dependence on energy-intensive industries such as agriculture and manufacturing particularly feel the benefit of lower oil prices. The largest importers of crude oil in the world are shown in Chart 4.

China imported 72% of the oil it consumed in 2019. China's industrial sector was very negatively impacted by the Chinese Government's response to the COVID-19 outbreak, so the low oil prices should provide a welcome relief as the sector gets back to normal operating levels. However, the Chinese Government has at times been reluctant to pass on the lower oil prices to consumers, and instead has raised taxes on oil products.



Chart 4: Largest Importers of Crude Oil



Source: UN COMTRADE

Furthermore, given the ongoing economic uncertainty, it may take a while for China to feel the positive effects of lower oil prices. For example, the extreme volatility that has been seen in markets over the past month impacts China's ability to recover from the economic fallout of its own containment measures. This is because of the embedded nature of supply chains in China. The shutdown of China caused supply chain headaches globally in January and February, while the shutdown of much of the rest of the world in March and April has caused these headaches to continue. As such, China is unlikely to be able to benefit from lower oil prices as much as would otherwise be the case.

India is the world's third largest crude oil importer. It imports more than 80% of the oil that it consumes, so falling oil prices will lower the nation's import bill, which should contribute to a narrowing of the country's current account deficit. If the lower oil price is passed on to consumers, the country would be expected to see an increase in discretionary spending, which would come as a positive development in a nation whose growth rate has slowed over recent years. It would also ease inflationary

pressure, providing the Reserve Bank of India an opportunity to lower interest rates and stimulate economic growth. Alternatively, the Indian Government could opt to not pass the entirety of the oil price cut on to consumers, and instead could increase taxes on fuels, which would translate to a stronger fiscal position for a government that is under significant pressure to stimulate economic growth.

Japan is a resource poor nation, so it too stands to benefit from lower oil prices by a way of a significant improvement to its trade deficit. However, the Bank of Japan is already unable to increase inflation despite drastic monetary policy measures, and lower energy prices are not going to help in that effort.

Most European countries are net importers of oil, the majority of which comes from Russia. As such, in a more 'normal' economic environment, they would be expected to benefit from lower oil prices. However, the impact of the lower oil prices may end up being nothing more than a blip on the radar, given the economically debilitating containment measures that are in place across the entire continent.



MORE LOSERS THAN WINNERS

While this oil price war has less clear-cut winners due to the COVID-19 backdrop, those who stand to lose the most are known. They are oil-producing countries and oil companies.

Oil-Producing Countries

Countries that rely heavily on oil exports as a source of revenue and as a means of balancing their fiscal budgets are poised to face economic hardship if we do not see a resolution to the oil price dispute. This applies to countries within OPEC+, such as Saudi Arabia and Russia, but also other oil-producing nations that are not within the OPEC+ alliance. Some countries are more at risk than others, including:

- countries with fragile democracies, given that a fall in government revenues (and thus, government spending) has the potential to cause significant social disruption, and potentially unrest. Examples of such countries are primarily in the Middle East and Africa, and include Nigeria, Algeria and Iraq. Iraq is a particular worry, given it does not have an appropriate government in place, it is battle-weary from its fight against ISIS and

oil revenues make up 95% of its fiscal budget;

- the autocratic regimes of the Middle East who maintain their positions of power by buying the support of their citizens. When the oil price falls, so too does government spending, which can mean that governments are forced to cut welfare benefits, for example. This could lead to discontent among the population, leading to further repression from the government; and
- countries in the Middle East whose currencies are pegged to the US dollar. Significant US dollar reserves are required to maintain a pegged currency. For many such countries, most of their US dollar reserves come from oil revenues. Floating currencies generally help governments manage economic shocks, such as the combined COVID-19 and oil price shock.

In the following sections, we discuss the expected consequences for the world's three largest oil producing countries.



Saudi Arabia

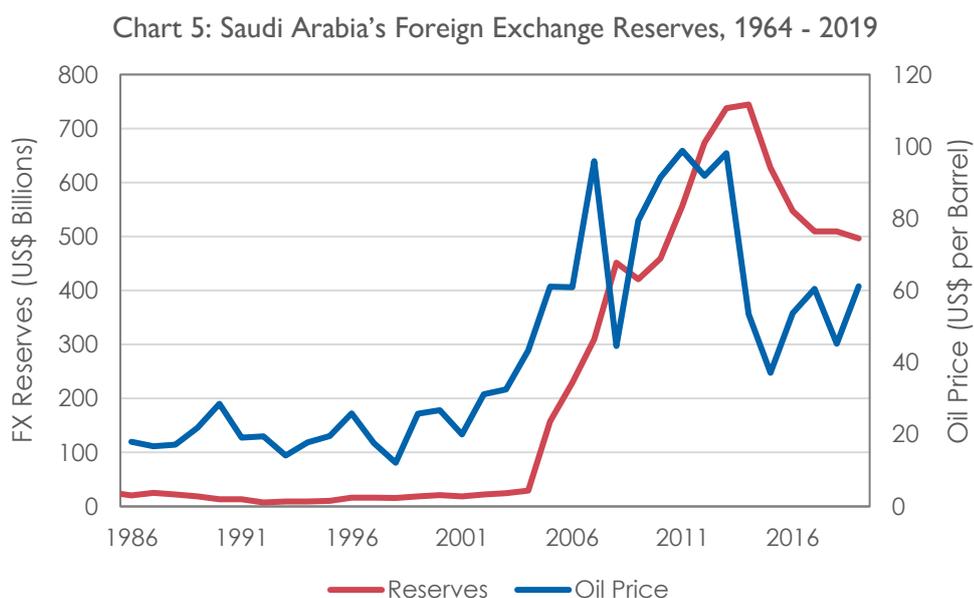
Saudi Arabia falls into the category of both the second and third bullet points above. Its autocratic regime, led by Mohammed bin Salman, the Crown Prince of Saudi Arabia, has continued to reiterate the importance of diversifying its economy away from oil. Bin Salman has been vocal about wanting the country to invest in a variety of sectors, including tourism and technology. However, he has not yet been able to put his words into action. Furthermore, triggering an oil price war is unlikely to increase foreign direct investment into the country, which is needed to help guide the Saudi economy's transition away from oil.

Approximately half of the nation's GDP comes from the oil and gas sector. The government has forecast that 62% of its revenue is expected to come from oil in 2020. It has also budgeted for a \$50 billion deficit in 2020, which analysts have calculated is based on an oil price of \$60 per barrel. With oil prices currently at less than half of that assumption, the deficit is expected to be significantly higher. Saudi debt is currently 24% of GDP, which is low by international

standards, but it has increased from 2% since 2014. We expect this level of debt will increase sharply if we see a sustained period of very low oil prices.

The Saudi riyal is pegged to the US dollar. The country has \$500 billion in foreign exchange reserves to help manage the stability of the currency, which is high by international standards. However, the volume of the reserves is directly correlated to the oil price, as shown in Chart 5. Saudi Arabia ate through nearly \$250 billion in its reserves when the oil price crashed in 2014-16.

Saudi Arabia is able to produce some of the world's cheapest oil, but with prices at this low level, its government will have to make difficult choices. If the oil price recovers relatively quickly, the nation will weather through the temporary pain the low oil price is currently causing. However, if the virus persists, demand continues to plunge and the country refuses to back down from its falling out with Russia, the economic damage to the country is expected to be more long-lasting.



Source: World Bank, US Energy Information Administration



United States

For the first time since the 1940s, America recorded its first month of a positive oil trade balance in September 2019, meaning that it exports more oil than it imports. This development has largely been driven by the dramatic increase in shale oil production over the past decade, as well as the US Government lifting its export ban of crude oil in 2015. While this has a positive effect on the country's trade deficit, it also means that the country is now more negatively affected by oil prices (lower revenue from oil exports) than positively affected (by way of cheaper oil passed on to consumers).

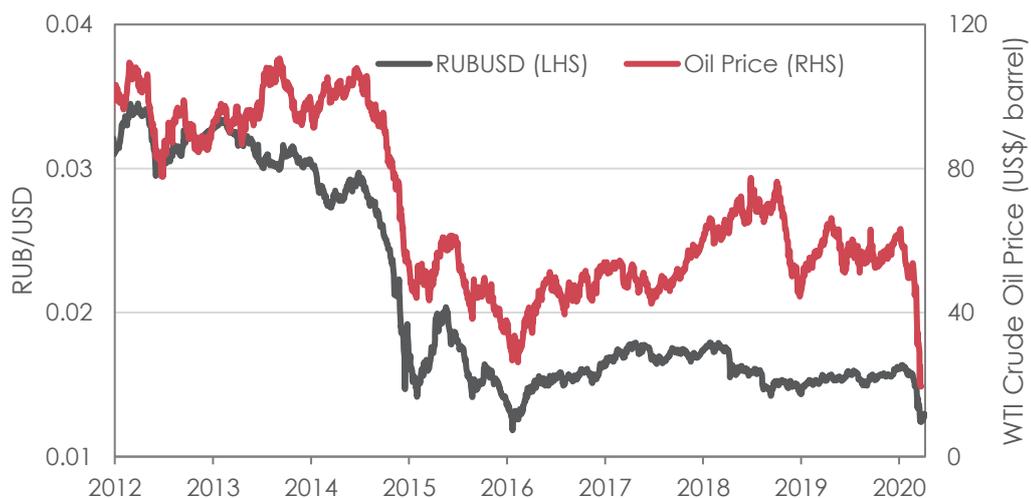
The American economy is clearly far more diversified than many of the other oil-producing nations. That said, the oil and natural gas sector accounts for approximately 8% of GDP. It is also the most significant contributor to investment into America's infrastructure, accounting for 16% of capital expenditures.

While a falling oil price is not going to have the same impact on America's fiscal position as Saudi Arabia's, for example, it will certainly provide an additional headwind for the American economy at a time when much of the economy has ground to a halt.

Russia

Oil and gas make up 60% of Russia's exports and 30% of its GDP. Russia is yet another example of a country whose business cycles are intricately tied to oil prices, and who suffers significant economic pain when the oil price collapses. The Russian ruble has depreciated by approximately 20% since the start of the year, with most of the depreciation coming amid the escalation of the COVID-19 outbreak and the oil price war in March. Chart 6 shows the relationship between the Russian ruble versus the US dollar and the oil price.

Chart 6: Russian Rubles per US Dollar & Oil Price, 2012 - 2020



Source: Bloomberg, US Energy Information Administration



The depreciation of the currency is particularly damaging for Russia. The nation imports almost everything aside from oil and vodka. The weaker ruble means that imported goods and services become significantly more expensive for Russian consumers. During the 2014-16 oil price crash, the ruble depreciated by 60%, which led to a spike in inflation. The Russian Government tried to rein in inflation by raising interest rates to 15% per annum.

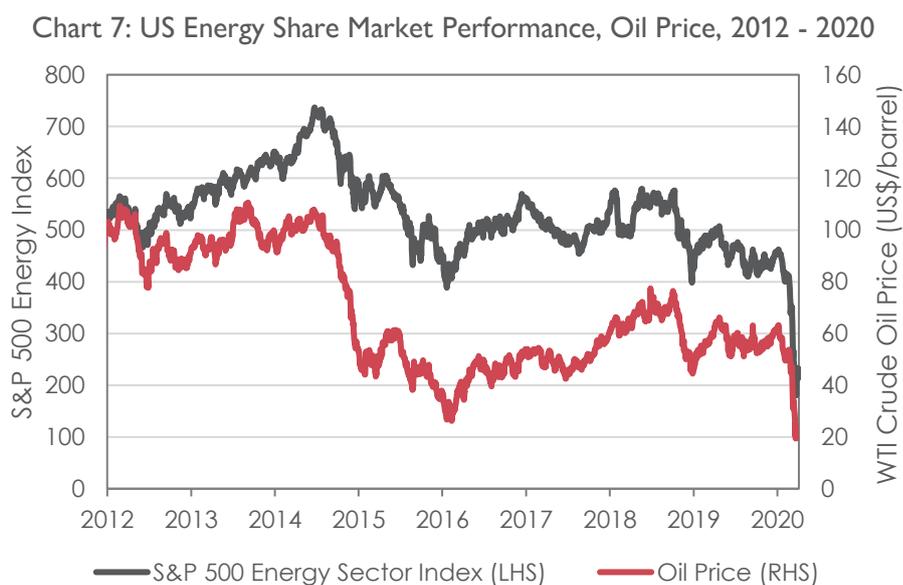
However, given it was Russia that chose to lay the groundwork for this oil price crash, the country is clearly confident that it can muddle through a period of low oil prices. Very soon after the oil price plunged, Russia's finance ministry announced that it has enough foreign currency reserves to withstand a decade of oil prices between \$25 and \$30 per barrel. That may be true, but spending in other parts of the economy will need to be significantly slashed.

American Oil Companies

Billions of dollars has been wiped from the value of listed oil and gas companies since the start of 2020 as a result of the COVID-19

outbreak and the oil price crash. This effect can be seen via the performance of the energy sector in the US share market as shown in Chart 7. It goes without saying that the performance of the energy sector is very highly correlated to the price of a barrel of oil.

It is without question that oil companies around the world will feel the negative effects of low oil prices, particularly if the prices remain low for a while. However, American oil companies are more affected than major oil companies in Russia and Saudi Arabia. This is because many Saudi and Russian oil companies have the explicit or implicit backing of their governments, and would likely be able to continue producing oil even if they are unable to repay their debt obligations. For example, Rosneft is Russia's largest oil and gas exploration company and is state-owned. Similarly, Aramco, one of the world's largest oil companies, is owned by the Saudi Arabian Government. Under extreme stress, the privately-owned American oil companies are unlikely to have the financial backing of the American government.



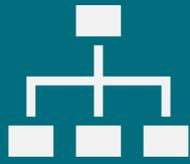
Source: Bloomberg, US Energy Information Administration

Oil companies in the nation's shale regions have a break-even price of anywhere between \$23 per barrel and \$75 per barrel according to the Dallas Federal Reserve, with the larger companies typically able to produce oil more cheaply. US oil companies have among the highest break-even prices in the world, and as such, are particularly vulnerable to an oil price crash. Investors have already been questioning the profitability of American oil companies for the past few years, given that the oil price has been hovering in the \$50-60 per barrel range.

If the oil price war is long-lasting, oil company executives will find themselves in a tricky situation – to avoid bankruptcy, they need to cut spending, but not to the point that would compromise production infrastructure and capacity. Oil companies want to be nimble and well-positioned for if and when oil prices increase. They walk a fine line between cutting costs to stay afloat and maintaining the infrastructure required to turn a profit when the market recovers.

Oil companies are expected to take different approaches to deal with this balancing act – some will vastly cut capex, while others will refocus on short-term investments. For example, when the price of oil crashed in 2014-16, Chevron shifted its focus from expensive and complex deep-water projects in favour of extracting oil from their onshore oil fields. While deep-water projects can be less expensive than extracting from existing shale wells, extracting shale oil typically takes less time and at a lower risk, so oil companies can profit more quickly.

The degree of difficulty that American oil companies will have in navigating this period of stress is ultimately dependent on the length of time the oil price remains at the current depressed level. This is, in turn, dependent on OPEC+ cooperation, as well as the path forward for the COVID-19 outbreak. With any persistence of the low oil price, we expect there to be some American oil companies that will not survive this period of financial hardship. As such, there may be a surge in bankruptcies in the oil and gas sector, as well as company takeovers. A surge in bankruptcies will have particularly profound implications for the US credit market, as we discuss in the following section.



FINANCIAL MARKET IMPLICATIONS

As summarised in the opening paragraphs of this article, 2020 year-to-date has marked a turbulent time in financial markets. While the first six weeks were relatively placid, since then markets have been anything but. The dramatic evolution of the COVID-19 outbreak from a China issue to a global pandemic caused a dramatic spike in market volatility in mid to late February, which was then amplified by the oil price crash in mid-March.

The market reaction over the past six weeks or so does not appear to have been driven entirely by acceptance of weak economic fundamentals or their further deterioration, as yet anyway. Rather, panic due to the escalation in the COVID-19 outbreak followed by the onset of the oil price war led to a dramatic 'flight to safety' in financial markets. Investors were exiting their holdings in riskier asset classes, such as equity and credit, to convert to cash. In mid-March, there was even increased selling pressure in US Treasury bonds, an asset

class that is typically favoured in environments such as this one, causing illiquidity to an extent never before seen in that segment of the market. The widespread selling pressure in all asset classes led to a significant evaporation of market liquidity, resulting in considerable trading costs and market volatility over recent weeks. We acknowledge that economic fundamentals will worsen from this point onward, given the dramatic and economically debilitating measures being implemented by governments to stem the spread of the virus.

While the market liquidity issues have eased somewhat off their peaks over recent weeks, in part because of central bank intervention in credit markets, expected persistence of the COVID-19 pandemic and the oil price war is going to be problematic for financial markets, particularly for credit markets, of which the oil and gas companies play an integral part.



Credit Markets

As we discussed in last month's article, the outbreak of COVID-19 is posing significant problems for companies around the world, including US corporates. In the early days of the viral outbreak, it seemed that industries such as travel, tourism and airlines would be most negatively impacted by the travel bans that were being implemented. However, the sweeping containment measures that have been implemented around the world over the past month, including in the United States, broadens the types of companies that are expected to face financial hardship. For oil companies, the hardship is exacerbated by the oil price crash.

Credit markets, the US high-yield and the lower-rated rungs of investment grade sleeves in particular, are very sensitive to oil prices. This is because a very significant proportion of high yield and BBB-rated corporate bonds are issued by companies that are involved in energy production, distribution and exploration. US energy companies are the biggest issuer of high yield bonds, accounting for more than 11% of the US market.

Heavily indebted high cost shale producers in the US are unprofitable with prices at these low levels. Smaller scale shale companies will be forced to significantly cut spending while some of the larger shale companies will rely on economies of scale in that they can gain cost advantages relative to their peers by stretching their balance sheets (i.e. taking on more debt) to increase size, output, or scale of operation. However, in these stressed market conditions, expanding balance sheets or restructuring debt could be unpalatable, if not impossible. The environment before the oil price shock was one of already very high (in many cases, excessive) debt levels, so taking on more debt is

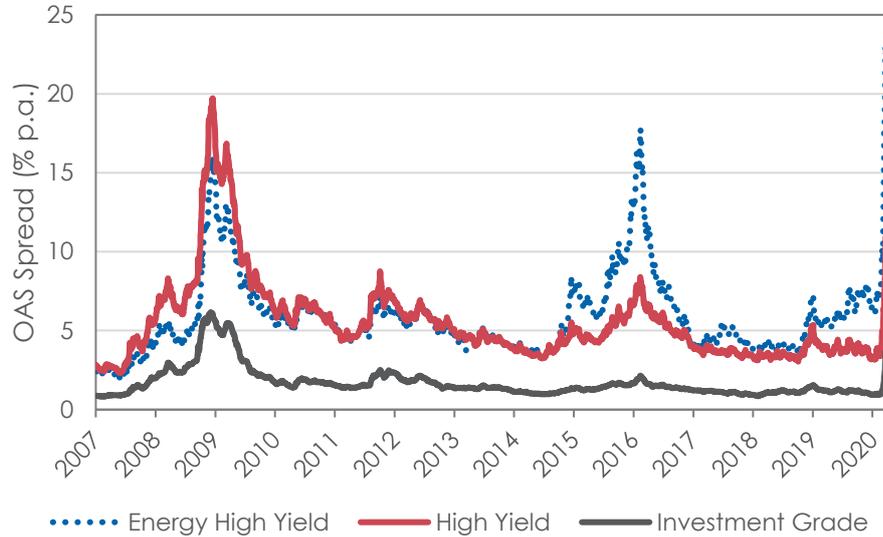
supremely challenging, especially in times of severely depressed productivity.

As such, oil companies across the board may have trouble meeting their debt obligations and will be forced to shrink. However, even with extensive downsizing, oil companies may not be able to weather the extreme credit conditions. Low oil prices will make it incredibly difficult for oil companies to make their debt repayments.

With oil prices showing no sign of recovery in the near term and any 'resolution' to the COVID-19 outbreak months away at the very least, bond markets have adjusted to reflect the likelihood of a spike in defaults. Sentiment generally remains extremely poor in the energy sector, and across high yield more broadly, with conditions at credit crisis levels. Credit spreads have risen as a precursor to a likely sharp increase in default rates over the next year, depending on how long-lived the COVID-19 pandemic is, and how long it takes for OPEC+ to get back to the bargaining table. Chart 8 shows the dramatic increase in corporate credit spreads over the past few weeks, for both high-yield and investment grade debt, and more specifically for the energy slice of high yield. It shows current credit spreads compared to both the GFC and the 2014-16 oil price crash.



Chart 8: US High Yield and Investment Grade Corporate Credit Spreads, 2007 - 2020



Source: Bloomberg

According to ratings agency S&P Global, the amount of energy-related high-yield bonds considered distressed jumped to \$51 billion in March, up from \$21 billion at the start of the year. Approximately 31% of the high yield energy market is trading in distress. The rate at which issuers are forced to default on these bonds is yet to be determined. However, it would not be unreasonable to expect that up to 30-40% of oil companies could default if the price of oil remains below \$30 per barrel.

In isolation, a sharp rise in defaults in the oil sector would not necessarily impact the rest of the US credit markets. From Chart 8 we can see that in 2014-16, high yield credit spreads for energy companies increased dramatically more than high yield more broadly. Investment grade spreads increased only modestly during that period. However, the unfortunate pairing of an oil price war with a global pandemic materially increases the likelihood of a more widespread credit event. Even without the oil price collapse, corporates across a variety of sectors are being dramatically impacted by the

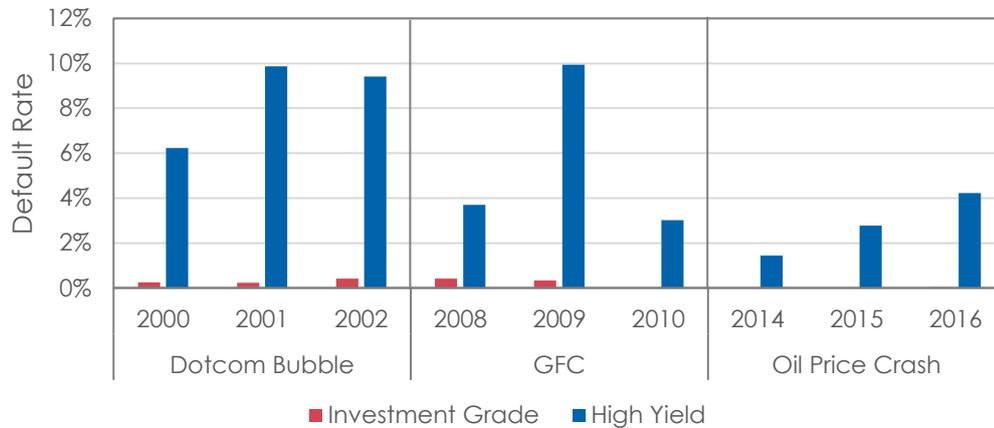
COVID-19 outbreak, and could face defaults and ratings downgrades themselves.

Chart 9 shows the investment grade and high yield default rates during historical periods of credit market stress – the bursting of the Dotcom bubble in the early 2000s, the GFC and the 2014-16 oil price crash (note these figures do not capture the loss given default). In the first two events, the credit stress was dramatic and widespread in the high yield space, with companies across a variety of sectors defaulting. However, the default rates in the oil price crash of 2014-16 were more localised to the energy sector specifically.

In these previous events, the default rates for investment grade bonds increased, but only very marginally. However, the unfortunate pairing of the oil price war and the global pandemic means that we could see a notable increase in default rates within a variety of sectors across both investment grade and high yield markets.



Chart 9: Historical Investment Grade and High Yield Default Rates



Source: S&P Ratings, Whitehelm Advisers

The hardship will be exacerbated because of the rapid rise in corporate debt since the GFC in the United States, including for oil and gas companies. The fastest rate of increase in corporate debt has been among borrowers rated BBB, one notch above high yield status. These BBB-rated bonds now make up about half of all investment-grade bonds on issue. Over the past few years, investors have become increasingly concerned about the ballooning of BBB-rated debt because any ratings downgrades, such as those that occur in the event of economic or financial market stress, would mean that there would be a large influx of corporate debt into the junk market.

Since the GFC, debt has been very easily accessible to issuers at the lower end of the investment grade spectrum, however the investment grade rating for such borrowers is often contingent on the borrower's commitment to reducing its debt levels. The economic downturn triggered by COVID-19 means that companies are unlikely to find themselves in a position where they can cut their borrowings or cut debt by selling surplus assets or raising profit margins. This could result in even more widespread ratings downgrades.

The US corporate bond market will struggle as it tries to accommodate the surge in so-called 'fallen angels' (bonds that were once investment grade but are now high yield). According to Goldman Sachs, \$149 billion of bonds were downgraded from investment grade to high yield in the first quarter of 2020, double the amount in the worst quarter of the GFC.

Many institutional investors, such as insurance companies and pension funds, are prohibited from investing in high yield bonds. As a result, investors would be forced to sell fallen angels at any price. Even investors who are not mandated to sell out of their junk bond holdings are more likely to try to rid themselves of the debt before credit spreads widen further (whether driven by worsening economic conditions, increased illiquidity, further credit rating downgrades or so on). To weather the storm created by a credit market crisis, investors need to avoid becoming forced sellers of securities (crystallising losses and incurring material transaction costs in doing so) and avoid holding securities which default or become permanently impaired. In an environment of evaporating liquidity and deteriorating conditions, this may be easier said than done.



Equity Markets

The triggering of the oil price war caused equity markets to have their worst day since the GFC on the Monday following the failed OPEC+ talks. While energy shares only account for approximately 5-10% of global equity indices, the very negative sentiment that the oil price crash brought about caused a widespread share market sell-off. However, the oil price crash was not merely an isolated incident, it came after weeks of extraordinary market volatility not seen since the GFC. The risk-off reaction by markets to the oil price crash compounded the risk-off sentiment already in markets for weeks.

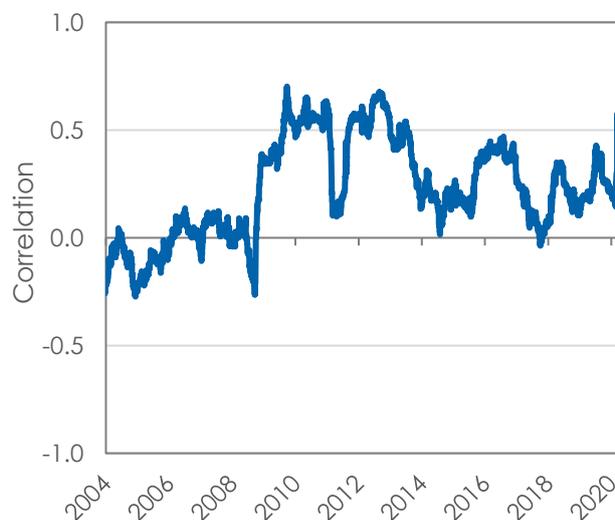
Changes in the oil price have not always gone hand in hand with equity market moves. In fact, the correlation between the price of crude oil and global equity markets is often reasonably low (but positive), but certainly inconsistent. However, in times of extreme oil price movements, such as during the GFC, the 2014-16 oil price crash and in the past month, the correlation between the oil price and share markets increased. Chart 10 shows the

correlation between the S&P 500 Index and the crude oil price, on a rolling six-month basis.

However, global equity markets are not uniform and we expect certain segments of the market to perform worse than others. Clearly, the profits of oil and gas companies around the world are expected to decrease dramatically if we see a continuation of the oil price war, destroying the energy sector returns of the global equity indices, but these companies make up just a small portion of the overall market.

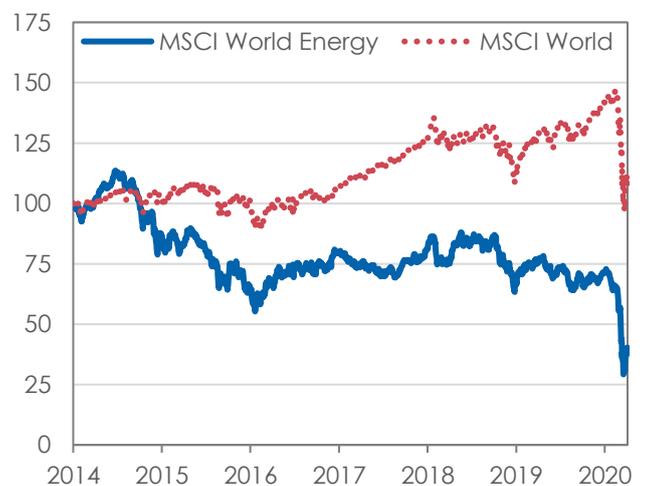
Chart 11 shows the MSCI World Index as well as the MSCI World Energy Index, both of which are normalised to 1 January 2014. We can see that the broader index was largely flat during the 2014-16 oil price war, aside from a few short-lived market sell-offs, while the energy index fell by 21% from the start of 2014 to the end of 2016. We expect a similar outcome in the short to medium term if we do not see any sustained progress made by OPEC+. The effect of the low oil price will feed through to company profits and their viability, and in turn, equity returns.

Chart 10: Six-Month Rolling Correlation Between Oil Price and S&P 500, 2004 - 2020



Source: Bloomberg

Chart 11: MSCI World & MSCI World Energy Indices, 2014 - 2020





Within the energy sector, companies with lower debt levels and/or lower cost of production will likely perform better than highly leveraged and high cost producers. Outcomes will also be divergent at a country level, with countries most exposed to oil prices (such as Russia and Saudi Arabia) likely to have a more difficult journey than more diversified economies.

It is worth noting that the combination of the oil price crash and the ongoing global pandemic could have a variety of other side effects, both economically and in terms of equity markets. For example, oil-dependent countries like many of those in the Middle East, may finally diversify their economies away from oil. This will make their equity markets more resilient to oil shocks in the future. Or, the supply chain vulnerabilities that have been exposed through the institutional response to COVID-19 could cause a shift towards local manufacturing, which would lead to a structurally lower demand for oil, and thus, structurally lower oil prices. This would likely expedite the need for diversification of economies. It could also change the dynamics within the auto industry, including by reducing the emphasis on higher fuel economy and efficiency, which would have perverse emissions outcomes, and share market outcomes for segments of the auto industry.

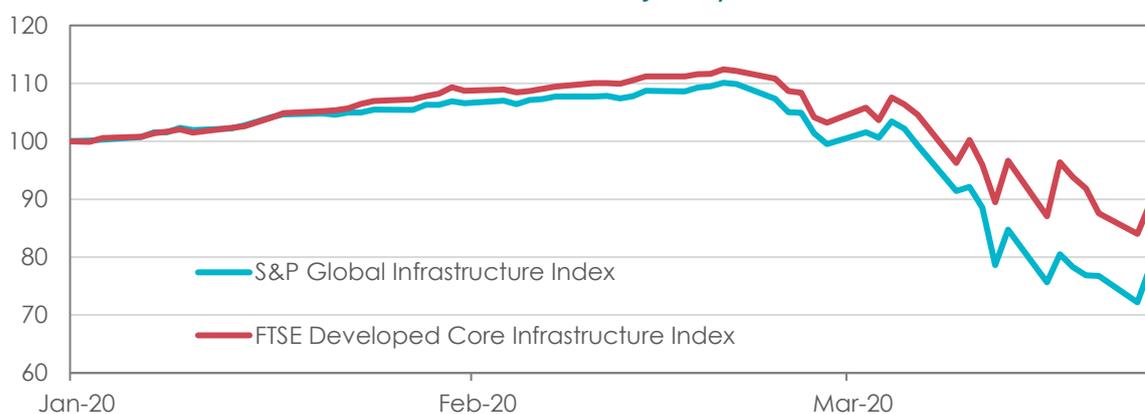
In any case, looking forward, we expect equity markets will continue to be very sensitive to changes in the oil price and any announcements made by OPEC+. Until we have some amount of resolution in either or both of the global pandemic and oil price war issues, share markets will continue to be volatile and reactive.

Infrastructure Assets

Infrastructure assets are typically robust investments that are able to better withstand shocks to the economy (such as an oil price war) as compared to other asset classes. Despite its defensive nature, the infrastructure asset class has not been spared in this unprecedented bleak market environment.

Listed infrastructure stocks have fallen decisively since mid-February, with the S&P Global Infrastructure Index falling more than 28% since its mid-February peak and the FTSE Developed Core Infrastructure Index trading 20% lower for the same period, as shown in Chart 12. Some industry sectors have been hit harder than others. Airports are now trading at an EV/EBITDA multiple of 8.1x, compared to 13x the end of 2019. Ports are also down from 9.8x since the end of 2019 to now around 7.9x. The changes in EV/EBITDA multiples are shown in Chart 13.

Chart 12: Listed Infrastructure, January – March 2020



Source: Bloomberg



Whilst not directly exposed to the volatility of equity markets, unlisted assets are not being forgiven in this punishing environment. Professional valuation firms have responded to both the COVID-19 outbreak and the oil crisis by recognising that either forecast cash flows need to be reconsidered or an additional risk premium would be required to be added to the cost of equity.

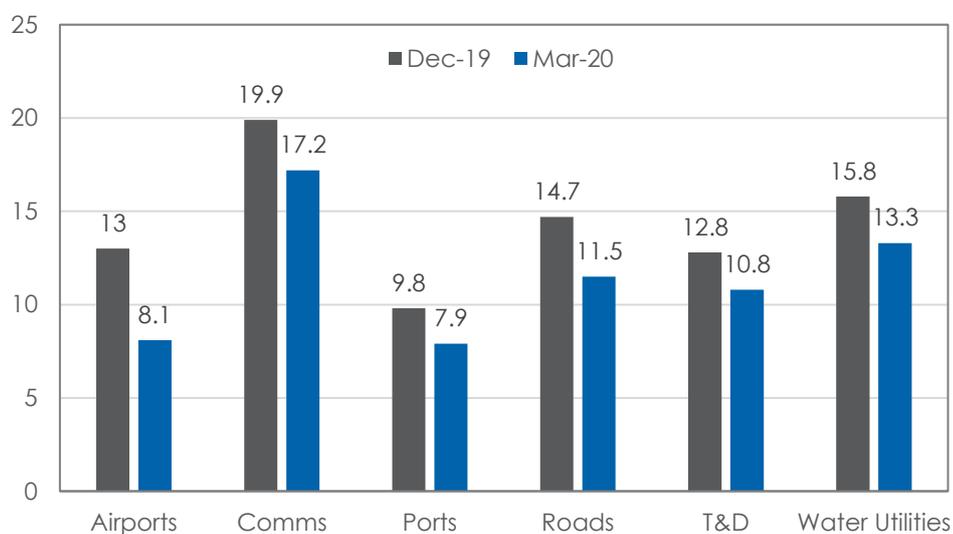
Like all other asset classes, there are some sub-sectors within infrastructure that are more impacted by the collapse in oil prices than others. The sub-sector that is likely to be the most impacted by falling oil prices would be energy and utilities infrastructure, especially those with direct exposure to energy prices.

Many of these assets have revenues that are linked not only to energy prices but also to inflation. Falling oil prices (which leads to lower inflation) could cause a double whammy on these assets' revenue. Furthermore, these assets have limited ability to mitigate such a revenue shock given they are highly leveraged and are capital intensive, with minimal ability to

meaningfully reduce their expenses. Examples would include renewable energy assets that have revenue exposed to market prices, waste to energy plants, and power generators. As a result, if lower oil prices persist, we expect to see a sharp fall in the number of renewable energy projects as their viability would be put under increased pressure.

On the other end of the spectrum, under normal circumstances (i.e. without the COVID-19 outbreak), we expect transportation infrastructure to be the biggest benefactor of lower oil prices. However, given the unparalleled number of travel restrictions imposed globally, any benefits from lower oil prices are unlikely to offset the negative impacts resulting from the outbreak. Finally, there is also a range of infrastructure assets that will experience little to no impacts from falling oil prices as they could operate very independently of energy prices. Examples of these include water utilities, social infrastructure, car parks, storage and communications.

Chart 13: EV/EBITDA Multiples by Global Sector, December 2019 – March 2020



Source: Bloomberg



CONCLUSION

Looking forward, it is difficult to anticipate the longevity of this oil price war. Will Russia and Saudi Arabia be stubborn in their fight to reclaim market share from the US, despite the economic fallout that a low oil price will have on their public finances? Or will the global pandemic backdrop be enough to convince OPEC+ members to put differences aside for now in an effort to weather the economic firestorm that is COVID-19? It is clearly too early to say.

At the time of writing, it was announced that OPEC+ had reached a deal to cut production by a fifth, but it did not cause an immediate rebound to oil prices. Investors are clearly questioning the authenticity of the deal, as well as if it will be enough to meet the contraction in oil demand.

If OPEC+ reaches a sustainable and realistic deal to cut production with buy-in from all parties, we expect that oil prices will start to increase back towards the early 2020 \$50 per barrel

level. However, and in any case, we expect the volatility of the oil price to remain high unless we see a fundamental change in the market's perception of demand and supply.

In terms of financial markets, the uncertainty surrounding the duration and depth of this oil price war is expected to heighten the volatility in already volatile markets. If the price war persists, many oil-producing countries are bound to face a lengthy period of economic hardship and difficult decisions. Many American oil companies will be doing everything in their power to survive the oil price war, but defaults, ratings downgrades and bankruptcies may be inevitable. This could lead to a world of pain for credit markets as well as share markets.

Investors need to be vigilant in this time of heightened market volatility. We will be monitoring this situation closely, with the intention of providing real-time portfolio advice if investment settings need to change.

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