



ABCI International Policy Review

Impacts of changing global oil demand and supply dynamics on major economies

ABC International Research
Philip Chan
Jan 16, 2020



農銀國際

ABC INTERNATIONAL

ABCI SECURITIES COMPANY LIMITED

Content

Summary	3
World oil demand outlook.....	4
World oil supply outlook	6
Expanding oil demand-supply gap in China.....	8
Narrowing oil demand-supply gap in the US.....	8
Oil prices trend.....	10
Conclusion.....	15
Disclosures.....	16



Impacts of changing global oil demand and supply dynamics on major economies

Summary

Economy and politics are interconnected, and energy is an indispensable input to the global economy. Oil resources can affect national wealth. Therefore, understanding the changes in oil supply and demand globally and regionally is helpful in garnering insight into the political and economic trends. The purpose of this paper is to explore the fundamental changes in the structure of global oil supply and demand, and then we proceed to outline possible changes in national economic and political policies going forward.

Recently, tensions between the US and Iran have escalated, and the situation in Iraq remains volatile. Risk of an oil price spike increases, which in turn posing threats to the global economy. Global capital market has cautiously monitored the development of this risk. The market's attention is shifting from the changes of world oil supply and demand to the geopolitical risk factors in the Middle East.

Our analysis shows substantial and fundamental changes in global oil supply and demand have occurred. These major changes originate from the US and not the Middle East, which in turn will provide greater space for the US to deploy foreign policies to influence global oil prices, as well as accentuating the country's economic, political and military clout in the world over the next few years. The US and OPEC, which control nearly half of the world's oil supply, will collectively reshape the global oil market and the wealth of the net oil importers.

In financial markets, geopolitical tension in the Middle East over the past 12 months has not reversed the downtrend in oil futures; instead, it has steepened the decline. This means that oil stock investors need to bear a higher downside risk in the medium and long-term valuations in exchange for short-term oil stock price returns.

The downtrend in oil futures implies that oil prices will unlikely be the main cause of inflation pressure in the medium and long term. On the contrary, oil prices may add to the deflation risk in the longer run.



World oil demand outlook

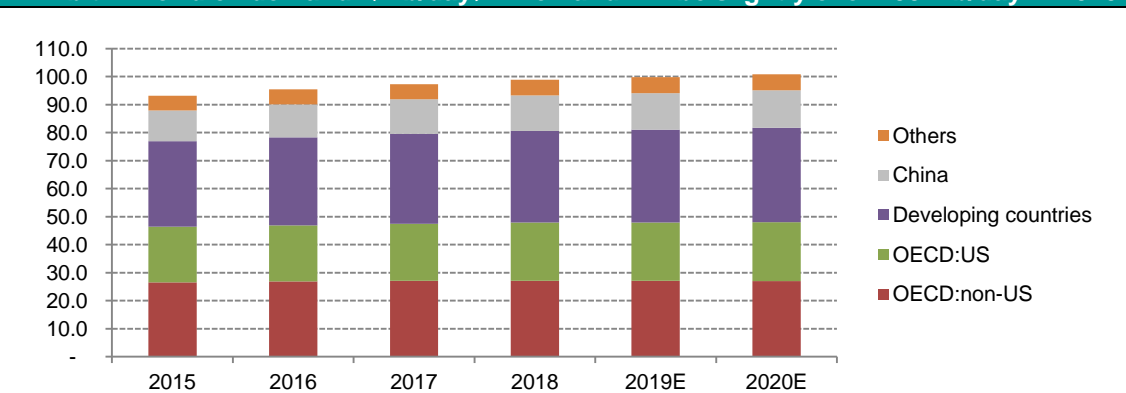
OPEC expects world oil demand to increase from 98.8 million barrels/day (mb/day) in 2018 to 99.8mn mb/day (+ 1.02%) in 2019 and 100.9 mb/day (+ 1.01%) in 2020. In the past five years till 2019, the annual growth rate of oil demand is 1.79%. Compared with the real GDP growth of the world economy according to the World Bank statistics, growth in global oil demand in 2018 was 1.41ppt lower than the GDP growth of the same period; the growth rates of global oil demand in 2019 and 2020 are estimated to be 1.38ppt and 1.49ppt lower than the predicted economic growth for the same periods. The World Bank forecasts that by 2020-2022, the world GDP growth rate will stay at 2.5-2.7%. We forecast the annual growth rate of world oil demand will be ~1.06% for the same period.

In 2019, OECD countries, developing countries (excluding China), and China accounted for 48%, 33%, and 13% of the world's total oil demand, respectively. We expect the composition to remain stable in 2020. In the past five years, the proportion of oil demand in OECD countries has dropped by 1ppt to 48%, while that in China has increased by 1ppt to 13%.

In 2018, the net increase in global oil demand was 1.55 mb/day. Due to the slowdown in global economic growth, the net new demand is expected to drop to 0.96 mb/day in 2019. The net new demand is expected to recover to 1.08 mb/day in 2020. In the past five years till 2019, the annual net new demand was 1.69 mb/day.

Annual net new demand for oil from developing countries and China will be the main sources of net new demand. In 2020, developing countries (excluding China) and China will account for 56.5% and 28.7% of the net new demand; the US will account for 13.9%.

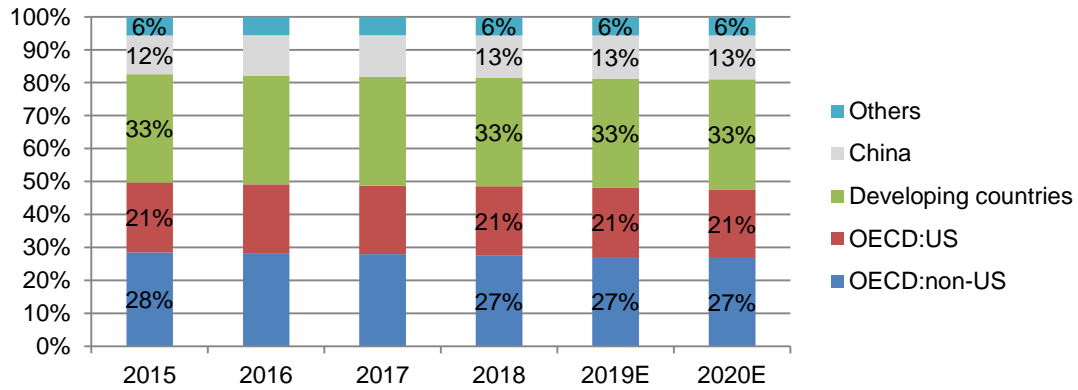
Exhibit 1: World oil demand (mb/day) - Demand will be slightly over 100 mb/day in 2020



Source(s): OPEC, ABCI Research

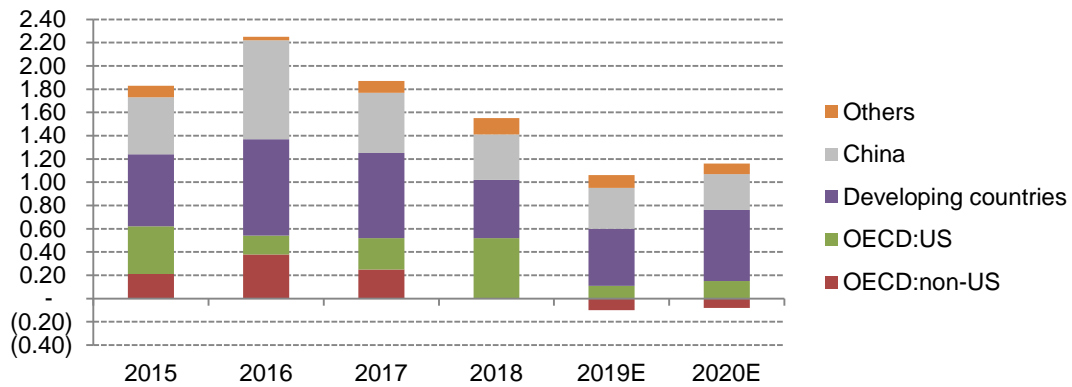


Exhibit 2: World oil demand composition – Demand from OECD countries and developing countries (excluding China) for oil accounts for more than 80% of global oil demand, while China's oil demand accounts for 13% of global total



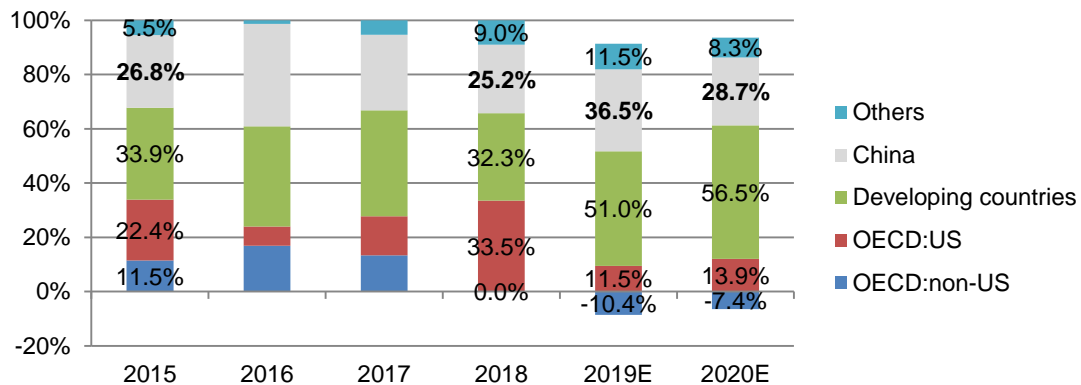
Source(s): OPEC, ABCI Research

Exhibit 3: World oil net new demand (mb/day) - Over 2017-19, weak new oil demand in OECD countries has resulted in a decline in net new global oil demand



Source(s): OPEC, ABCI Research

Exhibit 4: World oil net new demand composition – Oil demand from China and developing countries will be the main drivers of new global oil demand



Source(s): OPEC, ABCI Research



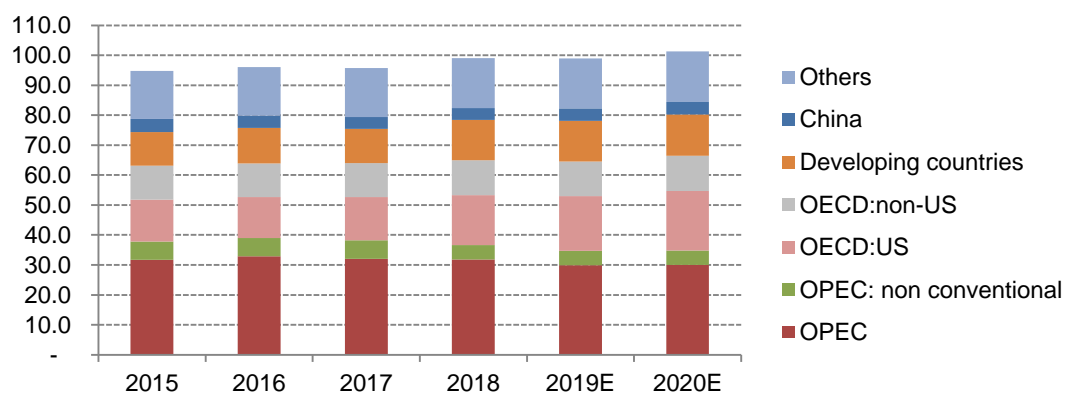
World oil supply outlook

In the past five years till 2019, the world's oil supply has grown by 1.14% annually. The figure in 2018 was 99.1 mb/day; oil supply is expected to drop to 99.0 mb/day in 2019, mainly due to OPEC's reduced production, which was partially offset by increase in US production. In 2020, the world oil supply will rebound to 101.3 mb/day, based on the assumptions that the US will increase reproduction while output from OPEC will not decrease.

OPEC and OECD countries are the world's major oil suppliers, contributing to ~35% and ~30% of the world's oil supply in 2019. China accounted for 4.1% of the world's oil production. We expect such composition to remain largely the same in the next few years.

Domestic oil producers in the US are gaining market share globally; meanwhile, OPEC's share is declining. The US accounts for more than 60% of OECD's total oil supply. In addition, the US share of world oil supply is expected to increase from 14% in 2015 to 19% in 2019 and 20% in 2020. OPEC's share of world oil supply is expected to trend down from 33.4% in 2015 to 30.2% in 2019 and 29.6% in 2020.

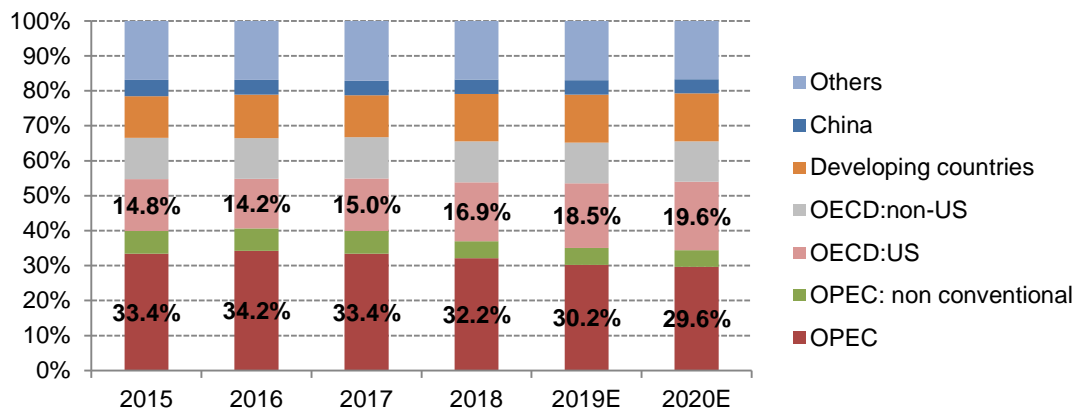
Exhibit 5: World oil supply (mb/day) - Oil supply will increase to slightly above 100mb/day in 2020



Source(s): OPEC, ABCI Research

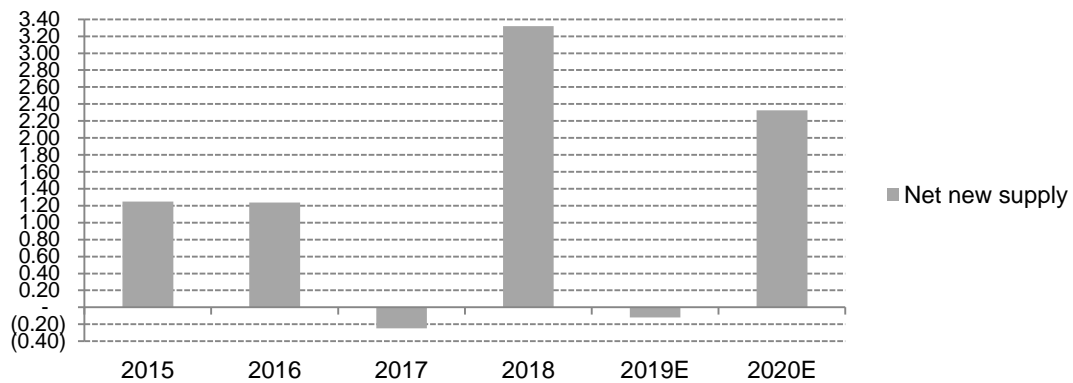


Exhibit 6: World oil supply composition – Market share of the US is increasing globally, while that of OPEC is reducing. The combined supply of the two is close to half of the global supply. From an economic perspective, risk of collusive pricing will increase



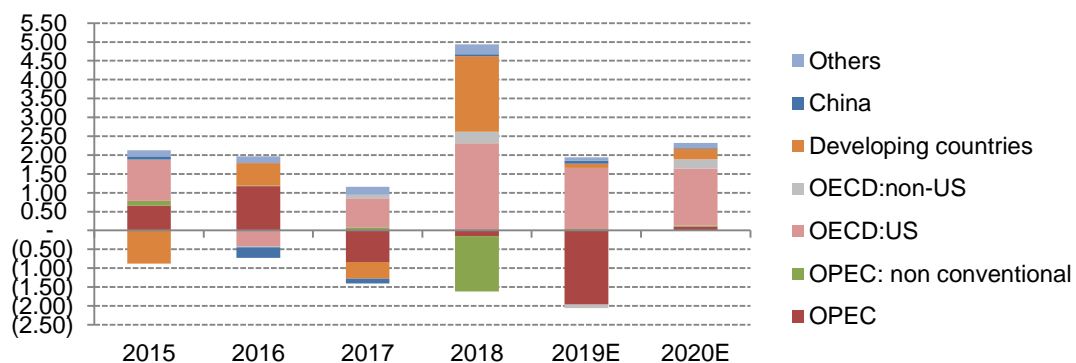
Source(s): OPEC, ABCI Research

Exhibit 7: World oil net new supply (mb/day) - The fluctuation of net new supply is one of the main reasons behind the volatility in oil prices in recent years



Source(s): OPEC, ABCI Research

Exhibit 8: World oil net new supply composition (mb/day) - Net new supply mainly comes from the US



Source(s): OPEC, ABCI Research



Expanding oil demand-supply gap in China

China accounted for 13% of world oil demand in 2019 (~4% of world oil production); meanwhile, the country is expected to account for 28.7% of the global new net demand in 2020. China's demand-supply gap is expanding from about 6mb/day in 2014 to 8.7mb/day in 2018, and is expected to increase to 9.0mb/day in 2019 and 9.3mb/day in 2020.

To supplement the domestic supply gap, China's oil imports increased from 31.75mn tons/mth in 2016 to 35.0mn tons/mth in 2017, 38.49mn tons/mth in 2018, and 42.16mn tons/mth in 2019. Crude oil imports accounted for about 12% of China's total imports in 2019, up from ~7% in 2016.

Narrowing oil demand-supply gap in the US

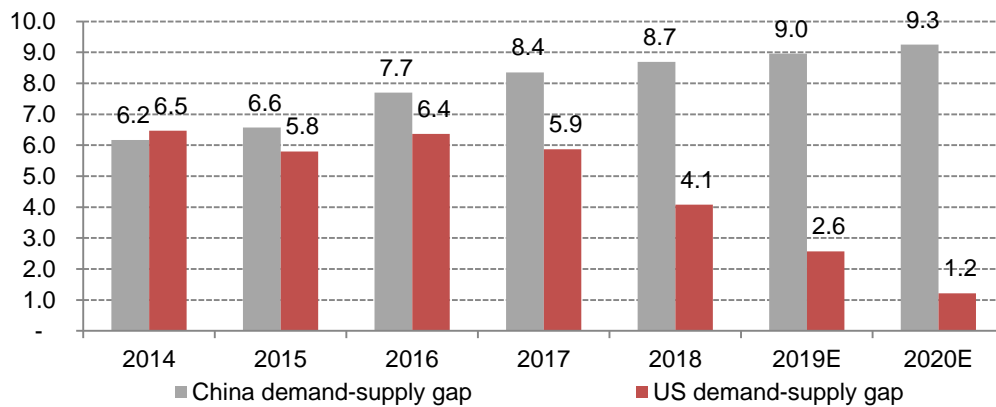
The oil demand-supply gap in the US market has shrunk significantly in recent years. This will provide greater flexibility in formulating US foreign policies, mild or radical alike, that will further the nation's interest.

In China and the US, local oil demand is greater than domestic oil supply; the difference is that the supply deficit in China is enlarging while that in the US is narrowing. With the reduced reliance on oil imports, the US can deploy foreign policies, including ones that are deemed aggressive or antagonistic, to achieve its national goal. The US oil demand-supply gap has decreased from 6.5 mb/day in 2014 to 4.1 mb/day in 2018, and is expected to fall further to 2.6mb/day and 1.2mb/day in 2019 and 2020, respectively. As a result of the shrinking deficit in oil supply in the US, its foreign policy will have greater flexibility to maneuver global oil prices (up or down) in order to achieve its economic, political and military goals in the world. After 2020, the supply deficit will improve further in the US, earning the nation's even more bargaining chips to enforce more radical foreign policies.

Since oil exploration and commercialized output will take long years to achieve, the demand-supply balance represents joint effort by previous presidents in the US. Current and future presidents of the US will be able to leverage this situation to reform and enhance the influence of the country's foreign policies around the world.



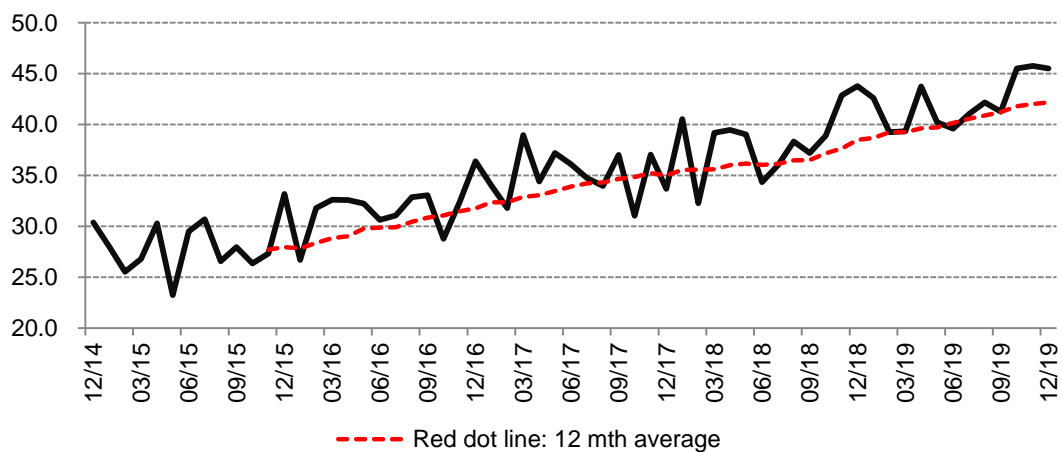
Exhibit 9: Oil demand-supply gap in China and US (mb/day) - China's gap is expanding, and America's gap is shrinking dramatically



Demand-supply gap = Domestic demand – domestic supply

Source(s): OPEC, ABCI Research

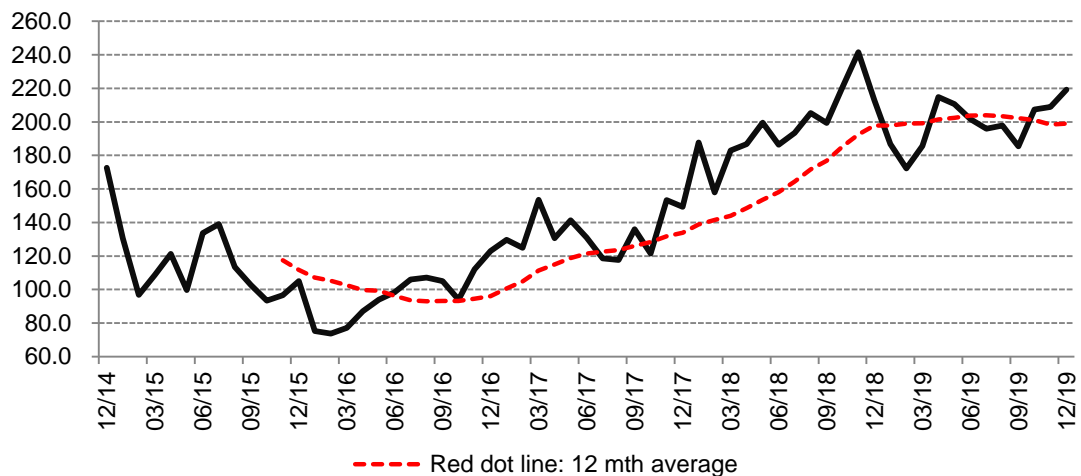
Exhibit 10: China monthly oil imports (mn tons) - Rising trend to bridge the demand-supply gap



Source(s): China Customs, ABCI Research

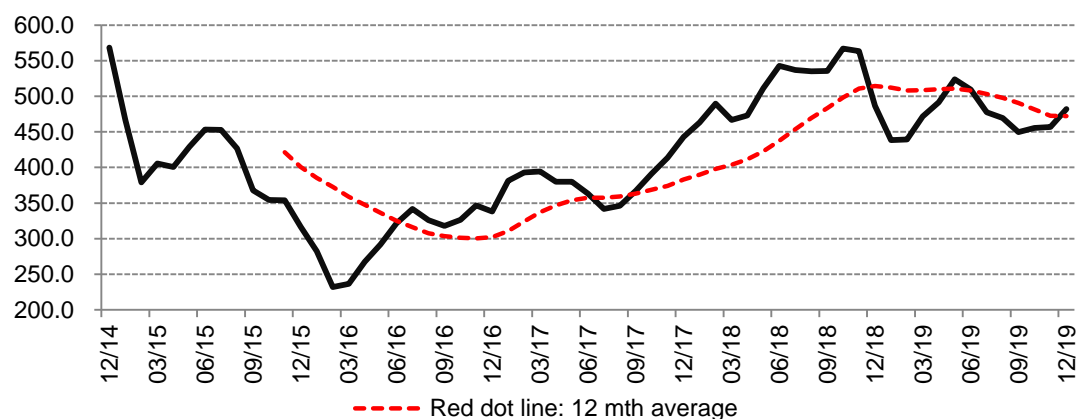


Exhibit 11: China's monthly oil imports (US\$100mn) - Crude oil imports increased from about 7% of China's total imports in 2016 to about 12% in 2019



Source(s): China Customs, ABCI Research

Exhibit 12: China's monthly oil imports average price (US\$/tonne) – Changing the quality mix of imported oil to control unit import costs will increase pressure on downstream refining capacity and costs



Monthly import average price = Import value / import volume

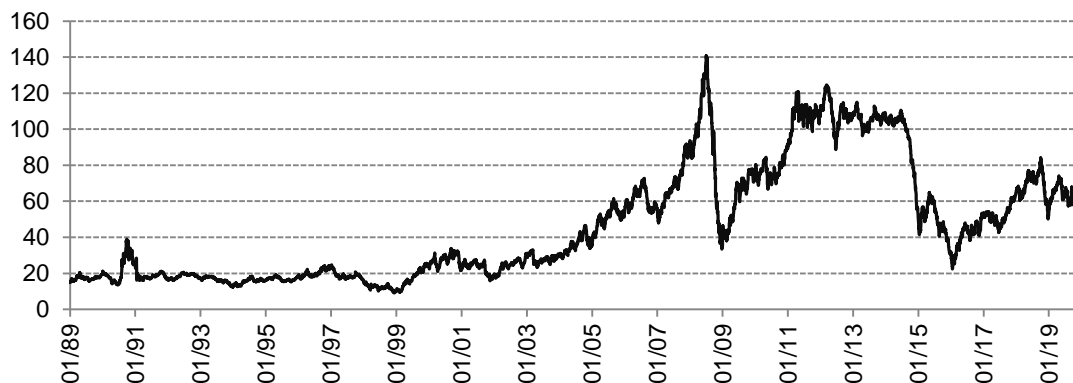
Source(s): China Customs, ABCI Research

Oil prices trend

In recent weeks, tensions between the US and Iran have escalated – a reminder to the capital markets that the global economy can potentially be subjected to risks resulting from the interruption of oil supply in the Middle East just as it did during the 1990 Gulf War. The Gulf War led to a spike in oil prices of 189% in the four months from June 1990 to nearly US\$ 39 per barrel in Sep 1990. After the Gulf War, the market turns highly vigilant to geopolitical risks in the Middle East. However, the high volatility of oil prices in 2008-09, 2009-2010, and 2014-2015 was not caused by geopolitical strain in the region.



Exhibit 13: OPEC basket oil prices since 1989 (US\$/barrel) - After the Gulf War in 1990, the market is still living under the threat of potential geopolitical risks in the Middle East



Source(s): OPEC, ABCI Research

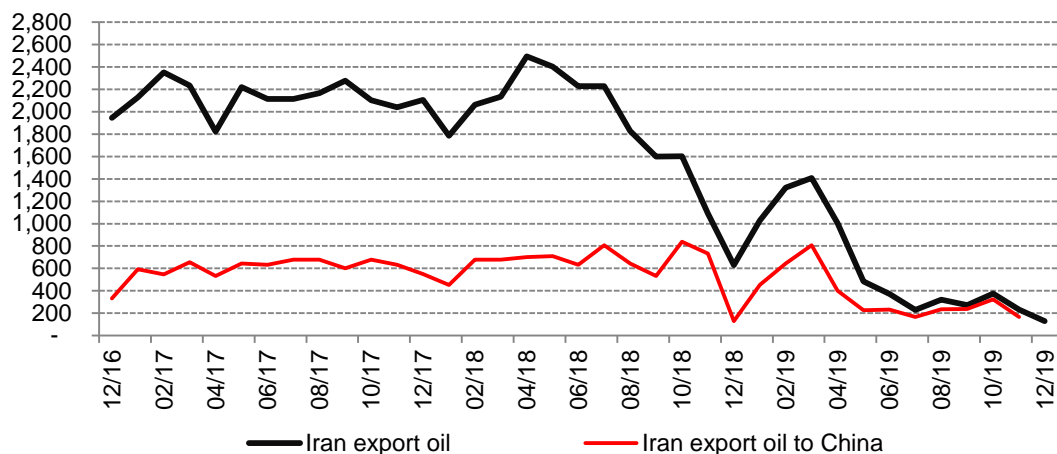
For capital market, qualifying risk is crucial. Pessimistic views without any solid and measurable basis could lead to poor investment decisions.

Beta analysis shows that if oil prices rise, gains in share price of oil stocks will be less than that of the price increase in oil. Compared with the reference benchmark of WTI crude oil futures, the beta values of CNOOC (883 HK), PetroChina-H (857 HK) and Sinopec-H (386 HK) are lower than 1. CNOOC's beta is 0.71, the highest among the three companies. The beta values of PetroChina-H and Sinopec-H are 0.51 and 0.46. If oil prices rise, CNOOC-H has a greater chance to outperform the two others, but it is still likely to underperform the gains in oil prices. Compared with the reference benchmark of WTI crude oil futures, the beta coefficients of international oil stocks such as Exxon Mobile (XOM US) and BP (BP LN) are also much lower than 1 at 0.50 and 0.38, respectively. The results of beta analysis makes one wonder the beta of oil stocks (relative to crude oil price futures) is far lower than 1, meaning that when the oil prices rise, the performance of oil stocks lags far behind that of the oil prices.

Oil prices reported daily by the media usually refers to the spot prices, with few reporting on the curve of crude oil futures. One result is that the public tend to focus almost exclusively on changes in spot prices. In our view, the main reason for the below-1 beta for oil stocks is the downward slope of the crude oil futures curve. Geopolitical events in the Middle East pushed up short-term oil prices but failed to drive up the long-term oil prices to the same extent. Subsequently, the downward slope of the crude oil futures curve becomes steeper. The steeper the slope of crude oil futures curve, the higher the devaluation risk of oil reserves held by oil companies. This explains why, despite the short-term rise in oil prices, investors are generally cautious in their pursuit of oil stocks, resulting in a statistically lower beta coefficient (relative to crude oil futures) of oil stocks. Investors in oil company shares should pay attention on the shape of crude oil futures curve. On Jan 14, the Feb 2020 WTI crude oil futures contracted price quoted in the New York Mercantile Exchange was

US\$ 58.35/barrel; meanwhile, the Dec 2020 futures contract price is US\$55.27/barrel (1.7% lower than the Feb 2020 contract price), and Dec 2021 futures contract price is US\$ 52.48/barrel (10% lower than the Feb 2020 contract price). These data reflect the downside valuation risk of oil reserves held by oil companies.

Exhibit 14: 12/2016- 12/2019 Iran oil exports ('000 barrels/day) - Iran's oil supply to the global market has decreased significantly in 2018 and 2019, which is fully reflected in the global oil prices



Source(s): Bloomberg, ABCI Research

Iran's crude oil exports have declined significantly since 1H18. Bloomberg estimates that Iran's exports of crude oil decreased from about 2.496 mb/day in Apr 2018 to 0.629 mb/day in Dec 2018, and further reduced to 0.129 mb/day in Dec 2019 (-95% from Apr 2018); OPEC's oil production also decreased from 32.55 mb/day in Dec 2018 to 30.0 mb/day in Dec 2019, down 7.8%YoY. The US has used various channels and policies to restrict Iran's oil exports. US-Iran tension hints that the US is likely to extend its current sanctions against Iran. Since 2Q19, oil prices have largely reflected the impacts of Iran's significant reduction in oil supply in the global energy market as well as OPEC's reduction in oil production. We believe further escalation of US-Iran tensions will not result in more major cuts in Iran's oil exports. At present, the rise in oil prices is mostly caused by the fear that the oil-export facilities in other regions of the Middle East will be adversely affected. The price volatility in recent weeks is mainly due to apprehension of possible supply disruption. So far, curves of oil futures have reflected such concern – it has boosted short-term oil prices but not the long-term ones.

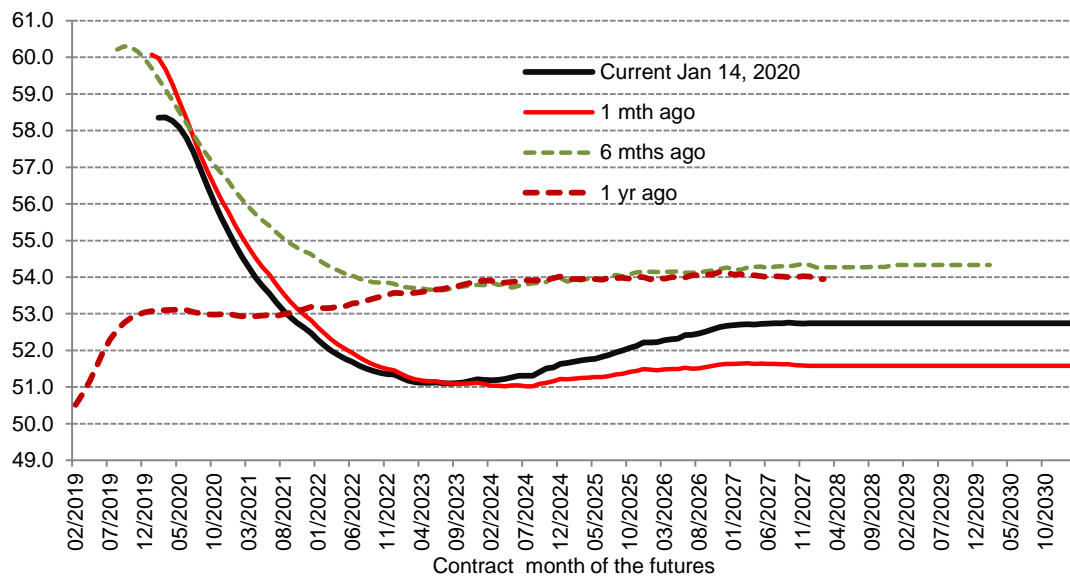
Although Iran's oil exports are expected to remain low for years to come, these expectations have not changed the downward sloping shape of the crude oil futures curve. Current geopolitical events in the Middle East are only raising short-term crude oil prices, which are likely to remain high in the coming months. The risk of market oil supply disruption is perceived to be a temporary problem. The downward slope of the crude oil futures curve has turned steeper, meaning that the percentage of downward change is increasing. These events increase the medium and long-term downside risks of crude oil prices. The risk of crude oil supply is the major driver of the short-term price rise, but weak demand is still the main culprit of long-term decline in



oil prices.

As long as the crude oil futures curve shows a downward slope, the crude oil inventory held by oil producers will face a greater risk of inventory depreciation. The steeper the downward slope of the futures curve, the greater the downward risk of crude oil inventory depreciation. We believe that unless oil companies can increase oil reserves at a rate faster than the fall in oil prices, the devaluation risk of investment oil companies will increase. It is difficult to find sizeable new oil fields. Moreover, if the future oil prices are much lower than the current ones, the economic value the newly discovered oil fields will be greatly reduced.

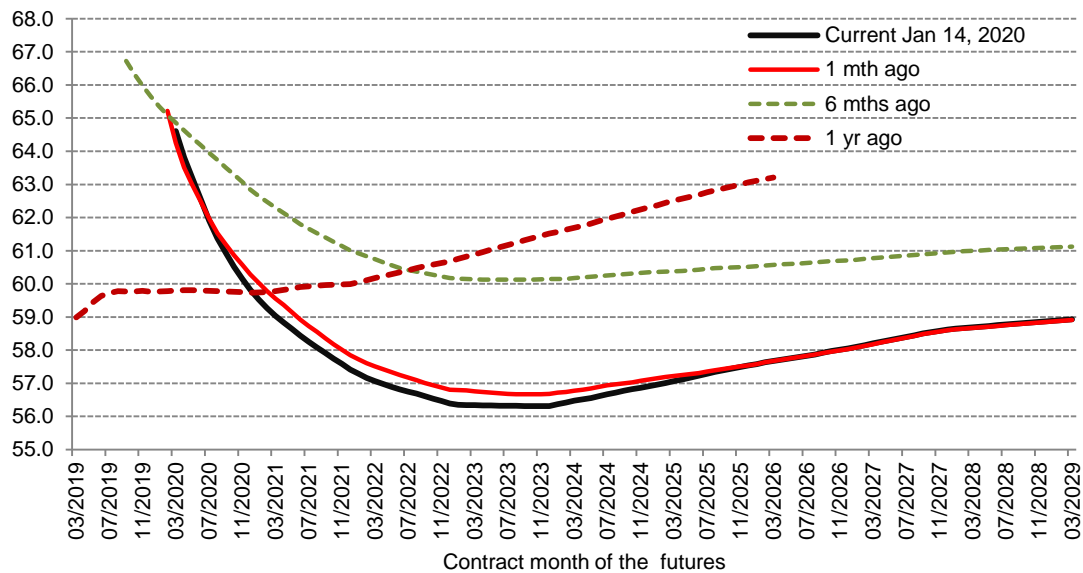
Exhibit 15: WTI crude oil futures curve of New York Mercantile Exchange at four different time points (USD / barrel) -the futures curve was up a year ago but has turned downward in recent months. Although tensions in the Middle East have continued to rise in the past few months, recent expectations for crude oil prices after 2023 are still lower than they were a year ago



Source(s): Bloomberg, ABCI Research



Exhibit 16: Brent crude oil futures curve of Europe ICE Futures Exchange at four different time points (USD / barrel) - the futures curve was up a year ago but has turned downward in recent months. Although tensions in the Middle East have continued to heat up in the past few months, recent forecasts for Brent crude oil prices after 2021 are lower than they were a year ago



Source(s): Bloomberg, ABCI Research

Exhibit 17: Beta analysis

		01/14/2020 Share price	Past 6 mth Price Chg (%)	Past 12 mth Price Chg (%)	1-year beta	2-yrs beta	Reference benchmark
CNOOC	HKD	13.24	(1.78)	4.40	0.24	0.71	WTI oil
PETROCHINA-H	HKD	3.94	(7.54)	(20.62)	0.10	0.51	WTI oil
SINOPEC CORP-H	HKD	4.66	(10.38)	(23.73)	0.13	0.46	WTI oil
BP PLC	GBp	495.90	(8.52)	(5.13)	0.31	0.38	
EXXON MOBIL CORP	USD	69.20	(10.22)	(3.45)	0.45	0.50	WTI oil
CHEVRON CORP	USD	116.30	(7.49)	3.73	0.25	0.44	WTI oil
		Per barrel					
WTI CRUDE FUTURE	USD	58.10	(1.14)	6.94			
BRENT CRUDE FUTURE	USD	64.35	0.16	5.25			

Remarks:

A beta value less than 1 indicates that the percentage change in the stock price is less than the percentage change in the benchmark oil price.

The lower beta means that the percentage change in the stock price is much lower than the percentage change in the benchmark oil price.

Source(s): Bloomberg

Conclusion

As the domestic oil demand and supply in the US approach balance, the nation's economy is more able to withstand the impact of oil price fluctuations. In the next few years, US foreign policy will have more space to expand economic and political influence and realize national interests.

From the perspective of economic theory, OPEC and the US jointly control nearly half of the world's oil supply. Their collective bargaining ability can affect the global oil prices and influence the global oil market in the future.

In 2019, Iran's oil exports decreased significantly, which has been reflected in the market oil prices. Further declines in Iran's oil exports will provide nothing more than a minor boost to oil prices. In the next few years, the trend of Iran's oil exports may increase rather instead of the other way round.

China's domestic oil supply deficit continues to expand, which in turn will expose the economy to greater risk of oil price fluctuations. In the short and medium term, China can consider hedging this oil price risk through financial instruments or increasing strategic oil reserves to smoothen the short-term price fluctuations; in the long term, the development of new energy to reduce the dependence on imported oil will be pivotal to manage the risk.

Long-term price expectation determines the present value of oil reserves and the valuation of oil companies. Investors should pay attention to the shape and changes in oil futures curve, which can reflect the long-term expectation of oil prices.

The downward slope of the oil futures curve means that oil prices is unlikely to be the cause of global inflation pressure in the medium and long term. On the contrary, the decline in future oil prices may add to the risk of global deflation going forward.

Disclosures

Analyst Certification

I, Chan Sungyan, Philip, being the person primarily responsible for the content of this research report, in whole or in part, hereby certify that all of the views expressed in this report accurately reflect my personal view about the subject company or companies and its or their securities. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed in this report. I and/or my associates do not serve as officer(s) of the listed company (ies) covered in this report.

Disclosures of Interests

ABCI Securities Company Limited and/or its affiliates, within the past 12 months, have investment banking relationship with one or more of the companies mentioned in the report.

Definition of equity rating

Rating	Definition
Buy	Stock return rate \geq Market return rate (10%)
Hold	- Market return rate (-10%) \leq Stock return rate < Market return rate (+10%)
Sell	Stock return < - Market return (-10%)

Notes: Stock return rate: expected percentage change of share price plus gross dividend yield over the next 12 months

Market return rate: average market return rate since 2008 (HSI total return index 2008-19 CAGR at 10%)

Time horizon of share price target: 12-month

Stock rating, however, may vary from the stated framework due to factors including but not limited to: corporate governance, market capitalization, historical price volatility relative to corresponding benchmark index, average daily turnover of the stock relative to market capitalization of the stock, competitive advantages in corresponding industry, etc.

Disclaimers

This report is for our clients only and is for distribution only under such circumstances as may be permitted by applicable law. It has no regard to the specific investment objectives, financial situation or particular needs of any specific recipient. It is published solely for informational purposes and is not to be construed as a solicitation or an offer to buy or sell any securities or related financial instruments. No representation or warranty, either expresses or implied, is provided in relation to the accuracy, completeness or reliability of the information contained herein. This report should not be regarded by recipients as a substitute for the exercise of their own judgment. Any opinions expressed in this report are subject to change without notice and may differ or be contrary to opinions expressed by other business areas as a result of using different assumptions and criteria. The analysis contained herein is based on numerous assumptions. Different assumptions could result in materially different results. The analyst(s) responsible for the preparation of this report may interact with trading desk personnel, sales personnel and other constituencies for the purpose of gathering, synthesizing and interpreting market information. ABCI Securities Company Limited is under no obligation to update or keep current the information contained herein. ABCI Securities Company Limited relies on information barriers to control the flow of information contained in one or more areas within ABCI Securities Company Limited, into other areas, units, groups or affiliates of ABCI Securities Company Limited. The compensation of the analyst who prepared this report is determined exclusively by research management and senior management (not including investment banking). Analyst compensation is not based on investment banking revenues, however, compensation may relate to the revenues of ABCI Securities Company Limited as a whole, of which investment banking, sales and trading are a part. The securities described herein may not be eligible for sale in all jurisdictions or to certain categories of investors. The price and value of the investments referred to in this research and the income from them may fluctuate. Past performance is not necessarily indicative of future results. Foreign currency rates of exchange may adversely affect the value, price or income of any security or related instrument mentioned in this report. For investment advice, trade execution or other enquiries, clients should contact their local sales representative. Neither ABCI Securities Company Limited nor any of its affiliates, directors, employees or agents accepts any liability for any loss or damage arising out of the use of all or any part of this report. Additional information will be made available upon request.

Copyright 2020 ABCI Securities Company Limited

No part of this material may be (i) copied, photocopied or duplicated in any form by any means or (ii) redistributed without the prior written consent of ABCI Securities Company Limited.

Office address: ABCI Securities Company Limited, 13/F Fairmont House, 8 Cotton Tree Drive, Central, Hong Kong.

Tel: (852) 2868 2183