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WHAT'S INSIDE

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OPECALYPSE NOW, CORONAVIRUS AND THE WORLD ECONOMY[1]

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Primary Themes

Since the all-time peak of $140 for West Texas Intermediate (WTI) in June 2008, the price of crude oil has suffered a major drop of approximately 90%.[2] At the end of April 2020, the spot price for WTI had fallen into the mid-teens, while Brent was trading in the $20 range.[3] Shockingly, on April 20, 2020, WTI closed at *negative* $37, as the May contract expired and there was no available storage.[4] As recently as December 2019, WTI was trading at $60 and the futures curve demonstrated an expectation for longer term prices in the upper $50s.

Three things have occurred that caused this price collapse:

1. Saudi Arabia proposed a production reduction to firm prices and asked Russia to cooperate, as they did in 2016. Russia declined; Saudi Arabia retaliated, and a price war ensued. Russia's unwillingness to cut production appears to reflect a strategy of trying to crush the American shale producers, whose remarkable increase in production has largely neutralized OPEC's pricing power.[5] Later, an agreement was reached to cut production, but oil prices did not react as expected.

2. The demand curve has declined sharply as a result of the coronavirus pandemic and a decline in China's economic growth. The International Energy Agency, in February 2020, had initially forecast 2020 world oil demand growth of 825,000 barrels a day compared to 2019, but in March 2020 it revised its forecast to a *decrease* of 90,000 barrels a day – the first time forecasted demand decreased since 2009.[6] A later report from Rystad Energy in April forecasts oil demand dropping by a staggering 10.3 million barrels per day.[7] This illustrates the sharp downward trend as the market begins to comprehend the effects of the pandemic on the world economy and global consumption.

1 An earlier version of this article, "OPECalypse Now and the World Economy" by J. Michael Issa, was published in the June 2019 issue of ABI Journal, available from https://www.abi.org/abi-journal/opecalypse-now-and-the-world-economy.

2 FRED.stlouisfed.org, retrieved from https://fred.stlouisfed.org/series/DCOILWTICO as of 4/27/2020.

3 Bloomberg.com, retrieved from https://www.bloomberg.com/energy as of 4/27/2020.

4 David Hodari and Joe Wallace, "Oil Prices Skid, With May Contract in Negative Territory," wsj.com, updated April 20, 2020, retrieved from https://www.wsj.com/articles/oil-prices-slump-as-crude-storage-shortage-intensifies-11587382034?mod=article_inline

5 Matt Egan, "Oil Crashes by Most Since 1991 as Saudi Arabia Launches Price War," CNN Business, cnn.com, March 8, 2020, retrieved from https://www.cnn.com/2020/03/08/investing/oil-prices-crash-opec-russia-saudi-arabia/index.html

6 IEA.org, retrieved from https://www.iea.org/news/global-oil-demand-to-decline-in-2020-as-coronavirus-weighs-heavily-on-markets

7 Rystad Energy, COVID-19 Report, 7th Edition: Global Outbreak Overview and its Impact on the Energy Sector, April 22, 2020, 14-15, retrieved from https://www.rystadenergy.com/globalassets/pdfs/rystad-energy_covid-19-report_22-april_2020_openaccess.pdf

3. The precipitous decline in consumption has resulted in storage capacity being filled to capacity. With commercial inventories reaching an all-time high, the market has no ability to absorb additional oil for storage.[8]

These factors have compounded an already existing financial crisis for most OPEC members and certain other oil producing countries. This article will comment on the potential impacts this may have on the world economy.

The US energy industry, in particular the upstream and midstream segments, is now being hammered by the falling demand and excess supplies.

- Given the continuation of the lockdowns from local governments, and the economic aftermath even when business attempts to restart, the probability is high that the conclusion to this market disruption will be neither swift nor particularly satisfactory.
- Although the fall in demand will eventually recover, there will certainly be casualties in the interim.[9]

Most OPEC member nations are presently on a collision course with financial ruin.

- Budget deficits as a percent of their GDPs are clearly unsustainable.
- OPEC cash and investment reserves are being depleted, and sovereign debt is being incurred to delay the day of reckoning.[10]
- The aggregate sovereign debt of OPEC is approaching the level of sub-prime mortgage debt, the default of which rocked the world on its economic axis in 2008.[11]

The current crude futures curve strongly suggests that crude prices will not increase to a level that will allow Saudi Arabia and others to balance their budgets. The current Brent curve does not exceed $50 until 2026.[12] The current price strip also has strong implications for the short and mid-term viability of the US oil and gas industry.

- Many US projects are noneconomical at current prices.
- Most major energy executives now accept that "Peak Demand" is a reality and that this inflection point will be reached within the next decade.[13]
- For a variety of reasons, the sun is beginning to set on crude's domination of the world's energy supplies.

The financial demise of OPEC member nations has the potential to significantly impact and perhaps destabilize the world economy.

Reliance of the World on OPEC Oil and Vice Versa

To analyze the impact of the oil industry on the world economy, one must first review the supply and demand metrics of oil and the role that OPEC plays in this arena. As of 2018, OPEC's oil production accounted *for approximately 41% of the oil production of the world* (Exhibit 1 on next page).[14]

Theoretically, one would assume that OPEC should have the ability to dictate oil prices by thoughtfully controlling the supply. In the past, this has largely been true. OPEC began to lose its grip on domination of the world supply and pricing with the advent of significant technological advances. These advances may have become possible because of OPEC 's market dominance and the impact on developed countries' long-term requirements for crude. This created a huge incentive for the net oil importing countries to discover and develop alternatives. Technological advances made the extraction of shale oil, predominantly in the United

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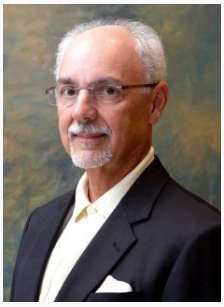

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8 Ben Cahill, "The Oil Inventory Challenge," Center for Strategic & International Studies (CSIS), csis.org, April 20, 2020, retrieved from https://www.csis.org/analysis/oil-inventory-challenge

9 Matt Egan, "A Wave of Oil Bankruptcies Is on the Way," CNN Business, cnn.com, April 2, 2020, retrieved from https://www.cnn.com/2020/04/02/business/oil-crash-bankruptcies-whiting/index.html

10 "The Mysterious Fall in Saudi Oil Reserves," aljazeera.com, June 27, 2017, retrieved from https://www.aljazeera.com/news/2017/06/mysterious-fall-saudi-foreign-reserves-170627175710850.html

11 OPEC: Organisation of the Petroleum Exporting Countries (chart), https://countryeconomy.com/countries/groups/opec

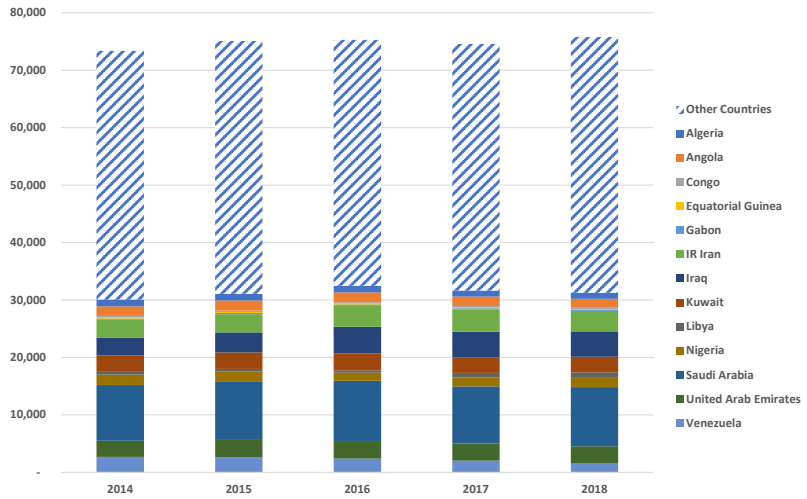
12 Brent Crude Oil Futures (chart), CME Group, cmegroup.com. https://www.cmegroup.com/trading/energy/crude-oil/brent-crude-oil.html as of 4/27/2020.

13 Narijus Adomaitus, "Oil Demand to Peak in Three Years Says Energy Advisor DNV GL," Reuters.com, September 10, 2019, retrieved from https://www.reuters.com/article/us-oil-demand-dnv-gl/oil-demand-to-peak-in-three-years-says-energy-adviser-dnv-gl-idUSKCN1VV2UQ

14 OPEC ASB; note Ecuador was not included as a member of OPEC in 2018.

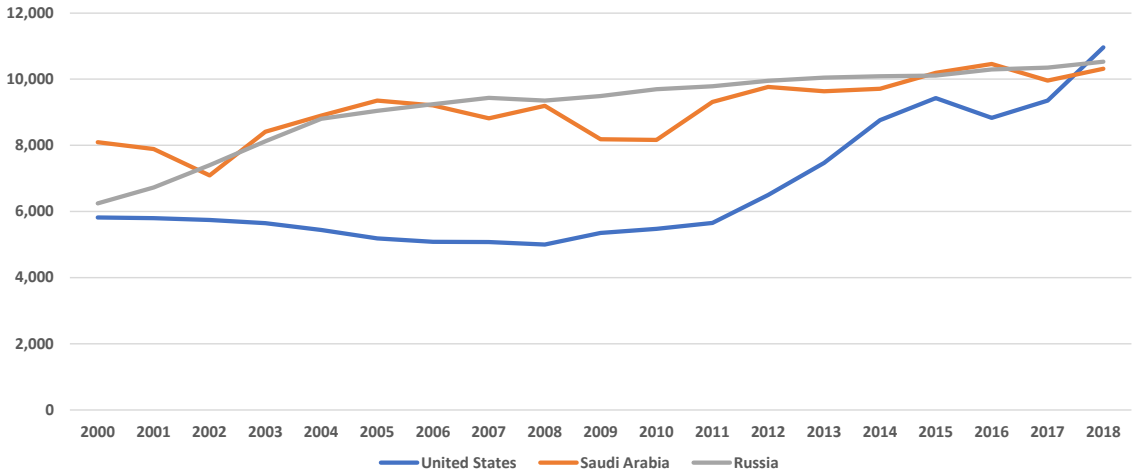
Continued from p.7

Exhibit 1: OPEC Countries Oil Production v. Other Countries, 2014-2018 (1,000 b/d)



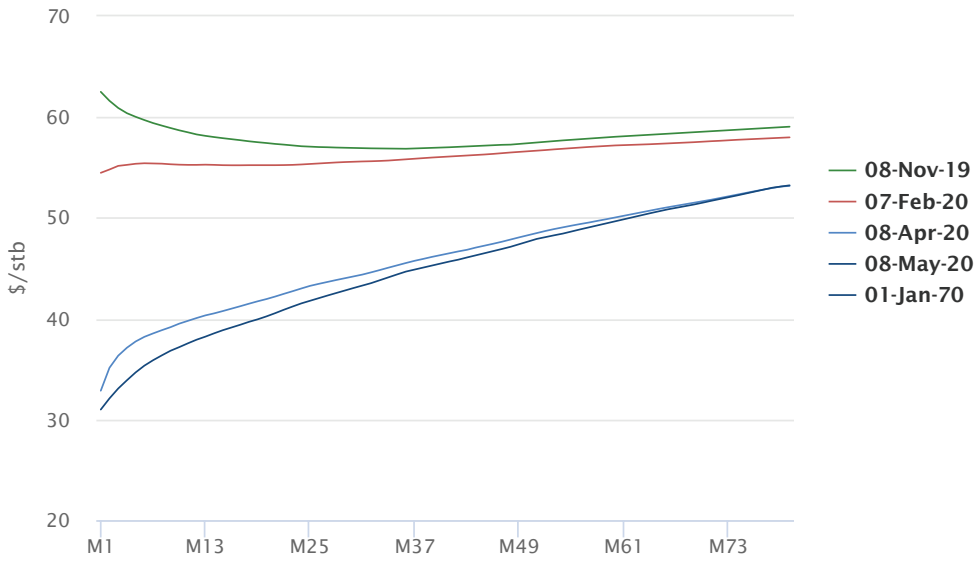
Source: OPEC ASB

Exhibit 2: Crude Oil Production by US, Saudi Arabia and Russia (1,000 b/d)



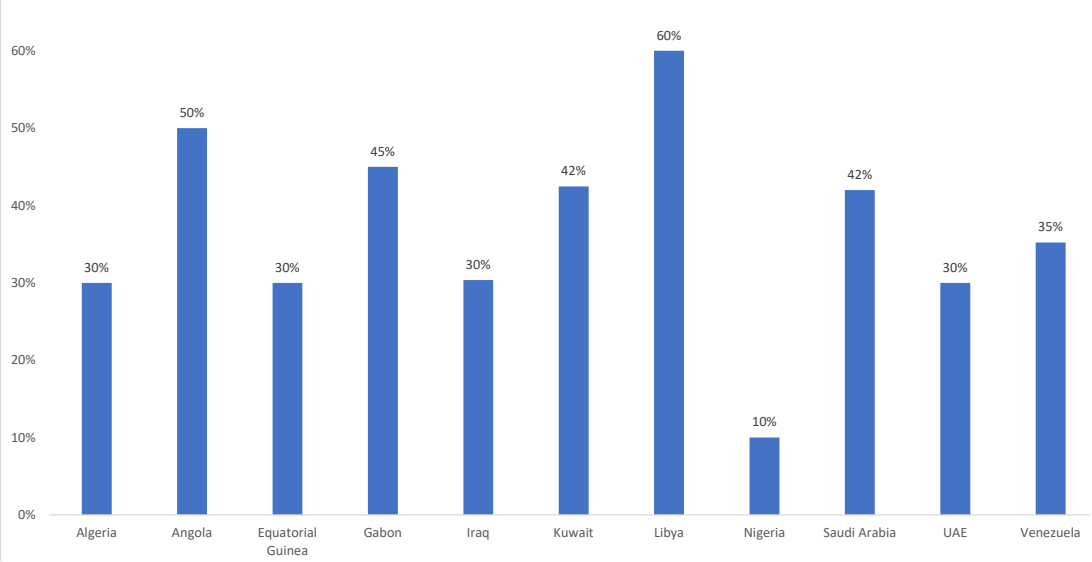
Source: OPEC ASB

Exhibit 3: Brent Futures Curve



Source: Intercontinental Exchange, ERCE Estimates

Exhibit 4: GDP Contributed by Oil Sector



Source: IMF and OPEC

States, economically viable with crude prices in excess of $30.[15]

Given that the world now largely ignores OPEC attempts to firm prices but that prices fall out of bed when there is a disagreement between Saudi Arabia and Russia, it seems clear that OPEC and the other major non-OPEC producers are now a classic dysfunctional oligopoly. They can impact prices adversely to their own detriment but are powerless to manipulate prices in a positive direction.

The fiasco between Saudi Arabia and Russia was derived from a failed negotiation to reduce production in order to firm crude prices. That discussion then devolved to Russia's theory that by crushing prices, US shale production will somehow cease to exist, thereby restoring a monopolistic position to the world's large producers – OPEC, Russia, and a few others. The obvious flaw in that reasoning was that the shale reserves are well-established, relatively cheap to produce, and production can be increased quickly when prices justify an increase. Russia's apparent logic would only have made sense if the non-OPEC producers were the high-cost producers. The US shale firms have shown an impressive ability to lower costs in an extremely competitive environment. One subtle downside of this situation is that it may take several years for OPEC+Russia to realize and accept that they are now no more than a dysfunctional oligopoly, and that they are heading toward a completely competitive global oil market with no cartel power to control or raise prices.

There are several underpinnings for this shift:

- Over the last decade, the United States has doubled its domestic production of crude by exploiting the development of shale oil. Its *increased* production over the last ten years of more than seven million barrels per day[16] is more than the 2018 *total* daily production of Algeria, Angola, Congo, Gabon, Libya, Nigeria, and Venezuela combined.[17] The US shale production can continue to increase in the future as technological advances and economies of scale continue to lower the cost of production.[18] In December 2018, the US became a net exporter of crude for the first time in 75 years.[19] In fact, the United States became the largest producer of crude oil in the world in 2018 with production of 10,962 barrels of oil per day, exceeding Saudi Arabia's 10,317 barrels per day and Russia's 10,527 barrels per day (Exhibit 2).
- Slowing economic growth in developing countries such as China, as well as the pandemic-driven recession, are limiting the demand for oil and refined products.[20] China's economic growth was slowing prior to the start of the pandemic, partly because of trade tensions, as well as a desire for buyers to diversify their supplier base. This diversification strategy will continue to expand after the virus threat subsides.

15 Jennifer Hiller, "Few US Firms Can Withstand Prolonged Oil Price War," Reuters.com, March 15, 2020, retrieved from https://www.reuters.com/article/us-global-oil-shale-costs-analysis/few-u-s-shale-firms-can-withstand-prolonged-oil-price-war-idUSKBN2130HL

16 US Energy Information Administration, retrieved from: https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MCRFPUS2&f=M

17 OPEC ASB 2019.

18 David Blackmon, "Technology and Efficiency Gains Create a New Normal for U.S. Shale," Forbes.com, September 18, 2018, retrieved from: https://www.forbes.com/sites/davidblackmon/2018/09/18/technology-and-efficiency-gains-create-a-new-normal-for-u-s-shale/#7c6b1f9e6591

19 Javier Blas, "The U.S. Just Became a Net Oil Exporter for the First Time in 75 Years," Bloomberg.com, December 12, 2018, retrieved from: https://www.bloomberg.com/news/articles/2018-12-06/u-s-becomes-a-net-oil-exporter-for-the-first-time-in-75-years

20 "Oil drops 1.5% to 13-month low as weak Chinese demand weighs," CNBC.com, February 10, 2020, retrieved from https://www.cnbc.com/2020/02/10/oil-markets-crude-supply-coronavirus-chinese-oil-demand-in-focus.html

- It is now well accepted that the world is approaching Peak Demand, after which demand for crude will begin to decline into the foreseeable future.[21]
- Governments around the world are making a concerted effort to promote electric or hybrid vehicles, which will also limit the growth in demand for oil.[22] About 69% of US petroleum consumption in 2018 was for the transportation industry.[23]
- Alternative energy now supplies 11% of the world's energy. This percentage is projected to continue to increase through 2050.[24]
- The US Energy Information Administration's Annual Energy Outlook 2020 projects that US energy consumption will grow more slowly than GDP through 2050, as US energy efficiency continues to increase.[25]

These observations are confirmed by the Brent futures curve where crude prices are projected to gradually increase from current cyclical lows in the mid-$20's but to peak at $50 in 2026 (Exhibit 3 on p.8).

Importance of the Oil Sector to OPEC Members

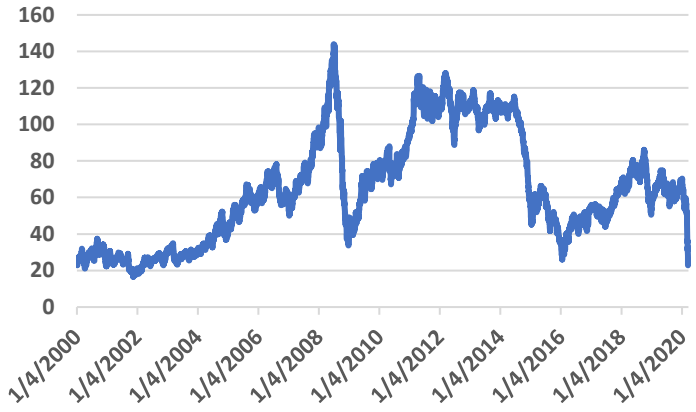
Despite giving lip service to the goal of diversifying their economies, many OPEC members have actually become more dependent on oil revenues. This is seen by the large percentage of their respective GDPs contributed by their oil sectors (Exhibit 4 on p.9). As one example, the oil segment accounts for 42% of Saudi Arabia's GDP.[26] The obvious conclusion is that these countries' economic well-being is directly and significantly tied to the price of oil, which is now at a level that is potentially destabilizing for most OPEC regimes.

Budget Deficits and Surplus

Beginning in the early 2000s, OPEC enjoyed a decade of unprecedented prosperity as oil surged from around $30 a barrel to $100.[27] (Exhibit 5)

This price surge allowed many OPEC countries to create large-scale social programs for their citizens. The obvious risk was the assumption that pricing would remain high enough to support those expenditures, a clear falsity for such a volatile commodity (Exhibit 6). Moreover, as history has shown, when prices of such an important item remain extremely high for long periods, people make significant investments in developing cheaper substitutes.

Exhibit 5: Europe Brent Spot Price FOB (Dollars per barrel)



Source: EIA

A few OPEC members, notably Saudi Arabia, belatedly realized that an investment in diversifying their economy is the only way out of this long-term economic trap. The obvious question is whether Saudi Arabia has the financial resources, the political and social will, and enough runway to accomplish this repositioning of their economy before disaster strikes. One recent attempt to jump-start the diversification was the IPO of Saudi Arabia's state-owned oil company, Saudi Aramco, whose stock fell by 25% in early 2020.[28]

It was no surprise, when the price of crude collapsed in 2016, that many OPEC countries began to run unsustainable budget deficits. According to the latest reports,[29] all OPEC members are currently running a budget deficit, with three of them running a budget deficit of more than 10% of their GDP (Exhibit 7). Non-OPEC oil producers have also been running deficits, but many are markedly less negative than OPEC members (Exhibit 8). It is interesting to note, Greece was running a budget deficit of 15.4% in 2009 when the financial world considered it a hopelessly insolvent state.[30]

Any budget deficit which significantly exceeds GDP growth rate is unsustainable in the long run. There is little question about the ultimate outcome given oil prices at current levels: the only uncertainty is the actual timing.

21 Adam Vaughn, "Global Demand for Fossil Fuels Will Peak in 2023 Says Thinktank," theguardian.com, September 11, 2018, retrieved from https://www.theguardian.com/business/2018/sep/11/global-energy-demand-fossil-fuels-oil-gas-wind-solar-carbon-tracker

22 Marianne Kah, "Electric Vehicles and Their Impact on Oil Demand: Why Forecasts Differ," Columbia-SIPA, Center for Global Energy Policy, July 2018, retrieved from https://energypolicy.columbia.edu/sites/default/files/pictures/CGEP_Electric%20Vehicles%20and%20Their%20Impact%20on%20Oil%20Demand-Why%20Forecasts%20Differ.pdf

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25 Annual Energy Outlook 2020, January 2020, eia.gov, retrieved from https://www.eia.gov/outlooks/aeo/

26 Photius Coutsoukis, Countries of the World: Saudi Arabia Economy 2020, https://theodora.com/wfbcurrent/saudi_arabia/saudi_arabia_economy.html

27 Europe Brent Spot Price FOB (chart), https://www.eia.gov/dnav/pet/hist/RBRTED.htm

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30 David Jolly, "2009 Greek Deficit Revised Higher," *The New York Times*, November 15, 2010, retrieved from http://www.nytimes.com/2010/11/16/business/global/16deficit.html

Exhibit 6: CBOE Crude Oil ETF Volatility Index

Source: Chicago Board Options Exchange

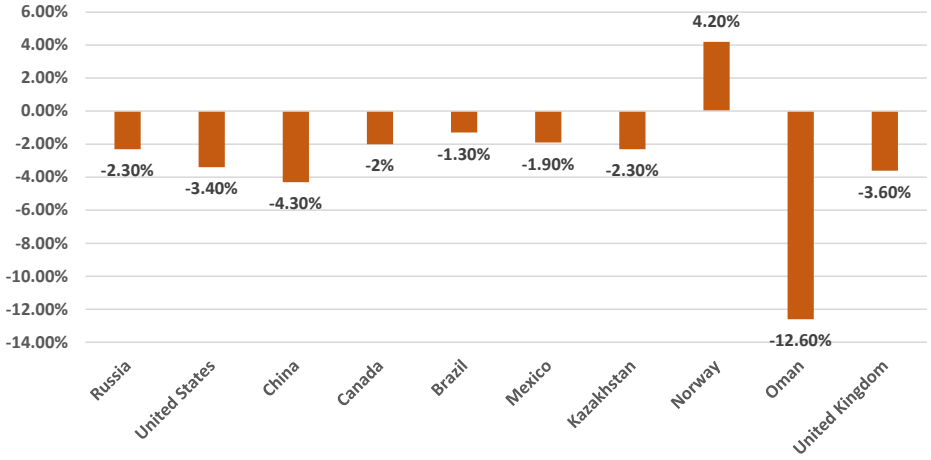
Exhibit 7: Budget Deficits of OPEC Members (2017)

2017 Budget Deficit of OPEC Members			
	"Deficit as % of GDP (Est. 2017) [1]"	"GDP ($B) (2017) [2]"	"Deficit ($B) (2017)"
Algeria	-9.60%	170.40	(16.36)
Angola	-6.70%	124.20	(8.32)
Congo	-0.90%	37.24	(0.34)
Equatorial Guinea	-4.80%	21.09	(1.01)
Gabon	-1.90%	14.62	(0.28)
IR Iran	-2.30%	439.50	(10.11)
Iraq	-4.20%	197.70	(8.30)
Kuwait	-10.00%	120.10	(12.01)
Libya	-25.10%	50.98	(12.80)
Nigeria	-1.80%	375.80	(6.76)
Saudi Arabia	-8.90%	683.80	(60.86)
United Arab Emirates	-0.20%	382.60	(0.77)
Venezuela	-46.10%	143.80	(66.29)

[1] CIA.GOV

[2] World Bank

Exhibit 8: Non-OPEC Countries Budget Deficits as % of GDP (2017)



Source: CIA.GOV

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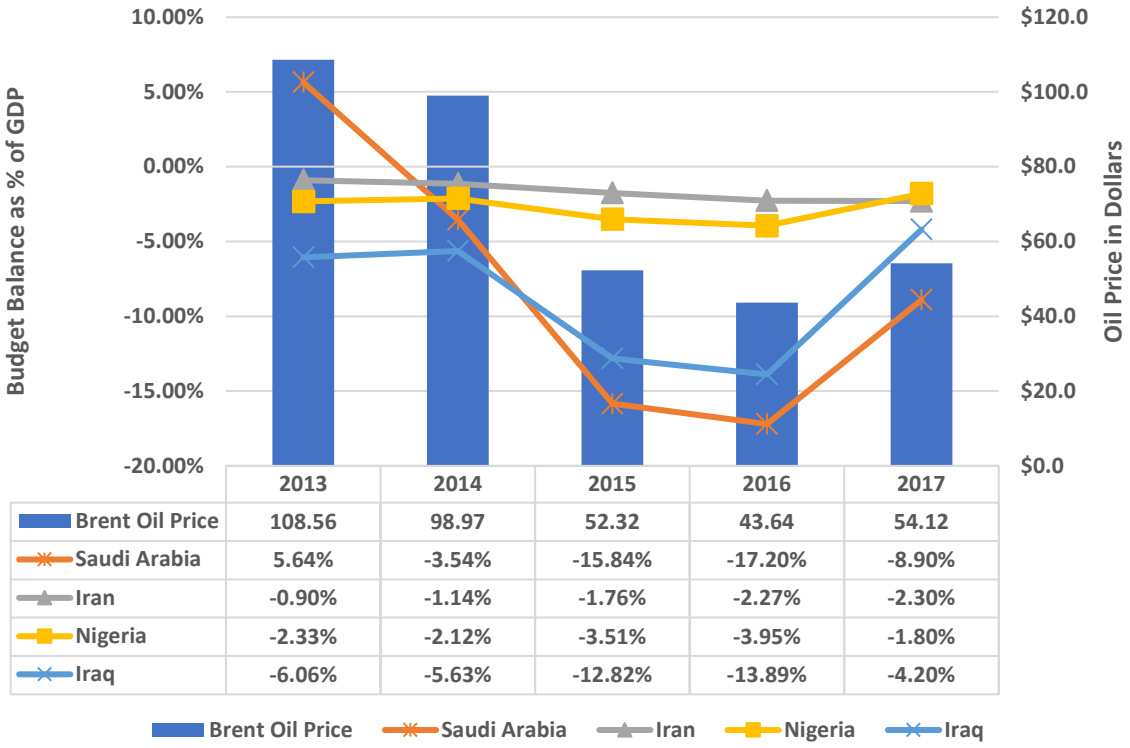
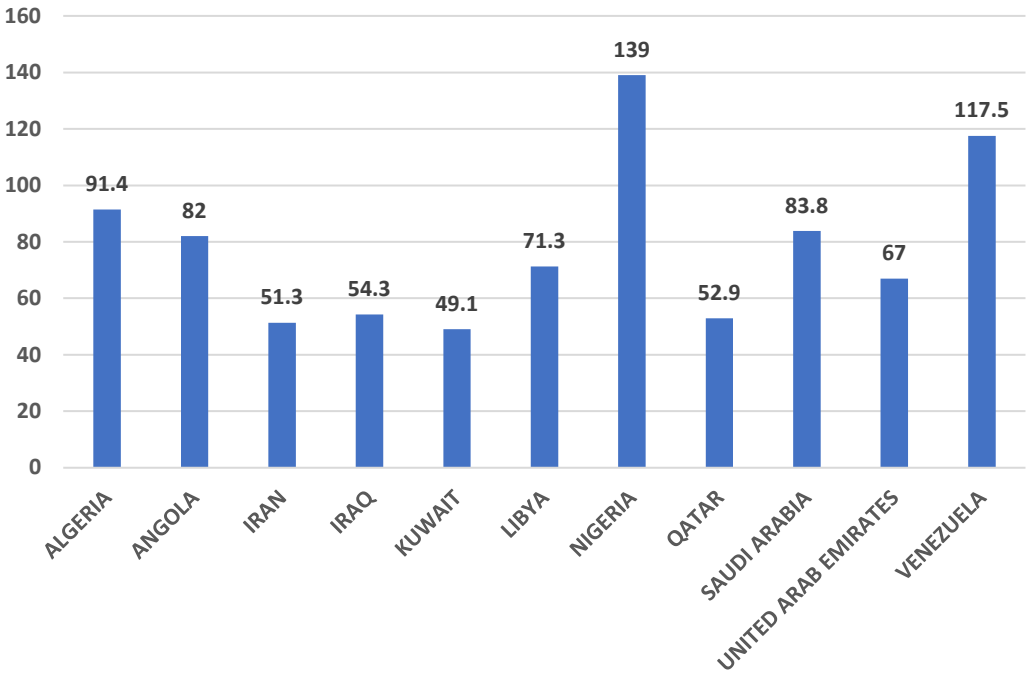
Exhibit 9: Select OPEC Countries Government Budget Balance as % of GDP v. Oil Price (2013-2017)



	2013	2014	2015	2016	2017
Brent Oil Price	108.56	98.97	52.32	43.64	54.12
Saudi Arabia	5.64%	-3.54%	-15.84%	-17.20%	-8.90%
Iran	-0.90%	-1.14%	-1.76%	-2.27%	-2.30%
Nigeria	-2.33%	-2.12%	-3.51%	-3.95%	-1.80%
Iraq	-6.06%	-5.63%	-12.82%	-13.89%	-4.20%

Source: Country Economy | CIA.GOV

Exhibit 10: Breakeven Oil Price (2017)



Source: Fitch, Highmark Capital, IWF, WSJ

In 2013, the average Brent oil price was $108.5. When it declined to $52.32 in 2015 and to $43.64 in 2016, the budget balances of the major OPEC countries followed a similar pattern. Saudi Arabia had a *budget surplus* in 2013 that totaled 5.64% of its GDP; in 2017, the budget balance was a *negative* 9% of GDP. This further demonstrates the extent to which these OPEC countries are heavily dependent on oil as a source of government revenue. It also highlights the magnitude of the problem posed by low oil prices for these countries' economies and stability.

Assuming no major changes in OPEC government expenditures, we calculated each country's minimum oil price required to achieve a balanced budget (Exhibit 9). For countries like Kuwait and Qatar, which have traditionally diversified their economies through investment funds, the breakeven point is now approximately $50/barrel (Exhibit 10). For Saudi Arabia, the breakeven point now exceeds $80/barrel. As the largest economy in the Middle East, the precarious position of Saudi's financial future is a real concern, given that the crude futures curve suggests the price of oil will average $40-50/barrel over the next five years.

Certain OPEC members are beginning to realize the magnitude and inevitability of the problem. They have begun to implement stricter fiscal policy, with a goal of balancing the budget even with lower oil revenue. This, however, could lead to social unrest. It will also create challenges in non-oil sectors, such as discretionary consumer goods that rely on a strong middle class.

Even before these countries attempt to shrink their social programs, some will have to deal with a substantial youth unemployment rate. Saudi Arabia currently has an unemployment rate of 30% among youths between the ages of 15-24. This is extremely problematic for a country where half the current population is composed of youths under the age of 25.[31] Austerity measures will likely mean an even higher unemployment rate among this age group. Currently, *70% of working people in Saudi Arabia are employed in the public sector*.[32] A disruption of this entitlement will create dissent among the working class of Saudi Arabia and create political instability that will pose a significant challenge to the country and to its royal family.[33]

Impact of an OPEC Collapse on Debt and Export

The current trajectory of OPEC member countries' financial situation has the potential to significantly impact world financial markets. As OPEC countries run low on foreign reserves, they are borrowing more money internationally, apparently in the hope of an oil price rebound that will allow them to balance their budgets. The futures price curve suggests that this borrowing is merely a stay of execution and will add to the already large amounts of sovereign debt that governments and organizations of these countries have borrowed over the past several years.[34] OPEC governments and organizations currently owe approximately USD 1.2 trillion,[35] or about the same amount that was owed by the subprime mortgage borrowers in 2007 (Exhibit 11, p.14).[36]

The impact of a default by a significant OPEC issuer has the potential to trigger a panic among investors that could be as momentous as the subprime crisis. This is likely, given that there were already signs of a decline in the growth rate of the industrialized nations prior to the pandemic-driven recession, a clear mid-term bear signal for crude prices.

Despite this disconcerting outlook, a number of OPEC members still enjoy favorable bond ratings with the three major rating agencies. Saudi Arabia is currently rated A, A1, and A- from Fitch, Moody's, and S&P respectively.[37] While the rating agencies may be as wrong on this topic as they were on the risk of subprime senior MBS tranches, the high ratings provide both the ability and the incentive for Saudi Arabia to borrow on the international market as its budget deficit balloons.

One justification for the continued high credit rating given by Moody's, despite the red flags suggested by the economic data, is Moody's assessment that Saudi Arabia has the capacity to carry more debt. This argument is both circular and unpersuasive for the following reasons:

1. Countries and companies are increasingly turning to alternative energy sources, especially for a traditional oil importing country like China.[38] Peak demand for crude

31 Vivian Nereim, "Saudi Arabia's Vision for the Future Looks Dim to Jobless Youth," bloomberg.com, November 22, 2016, available from: https://www.bloomberg.com/news/articles/2016-11-22/saudi-arabia-s-vision-for-the-future-looks-dim-to-jobless-youth

32 Suparna Dutt D'Cunha, "Plagued by a 30% Unemployment Rate, Arabian Youth Turn to Startups for a Lifeline," *Forbes*, May 11, 2017, forbes.com. Retrieved from https://www.forbes.com/sites/suparnadutt/2017/05/11/can-startups-drive-new-job-growth-in-the-mena-region-where-youth-unemployment-rate-is-30/#306434e034f4

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34 Elena Holodny, "Saudi Arabia's National Debt Has Exploded Since the Oil Crash," *Business Insider*, December 22, 2016, retrieved from https://www.businessinsider.com/saudi-arabia-national-debt-budget-2017-report-2016-12. And CIA, cia.com.

35 OPEC Organisation of the Petroleum Exporting Countries (chart), as of April 2020, retrieved from https://countryeconomy.com/countries/groups/opec

36 Joseph Krmpotich, *The Subprime Mortgage Collapse* (thesis), University of North Carolina (2012), available from http://www.stat.unc.edu/faculty/cji/fys/2012/Subprime%20mortgage%20crisis.pdf

37 Saudi Arabia Credit Rating (Moody's, S&P and Fitch tables), https://countryeconomy.com/ratings/saudi-arabia

38 Dominic Dudley, "China Is Set To Become The World's Renewable Energy Superpower, According To New Report," *Forbes,* January 11, 2019, retrieved from https://www.forbes.com/sites/dominicdudley/2019/01/11/china-renewable-energy-superpower/#109d44f5745a

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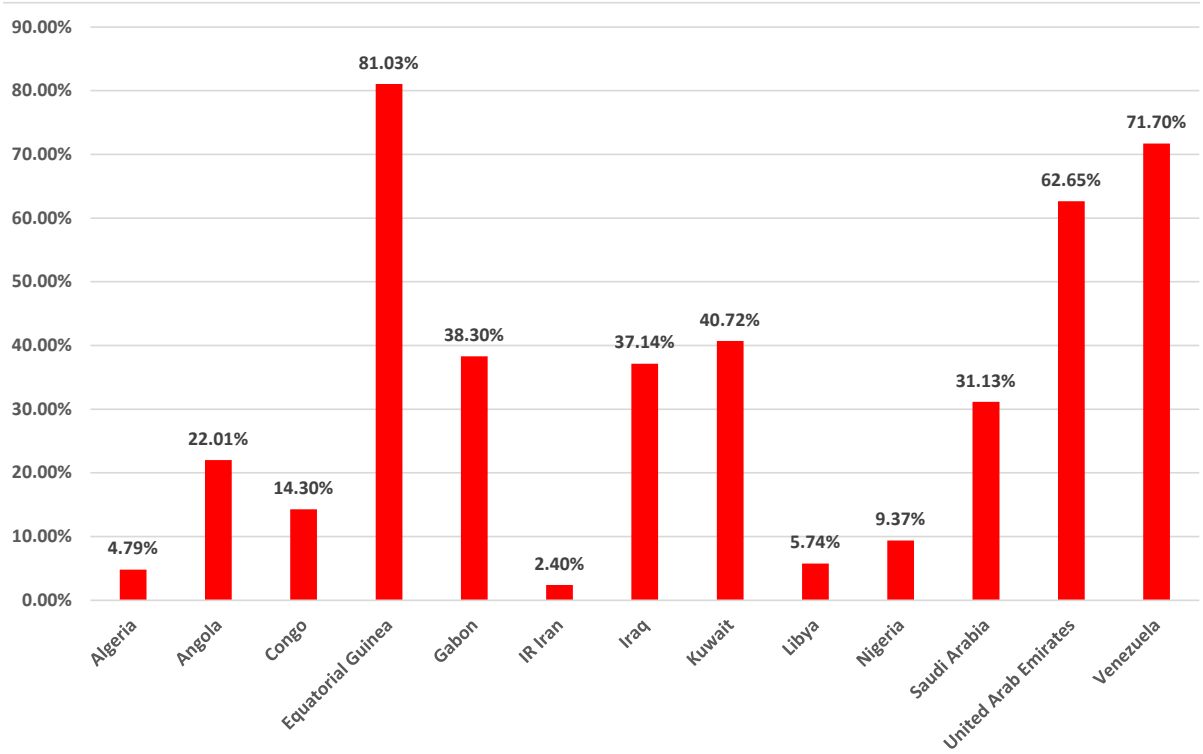
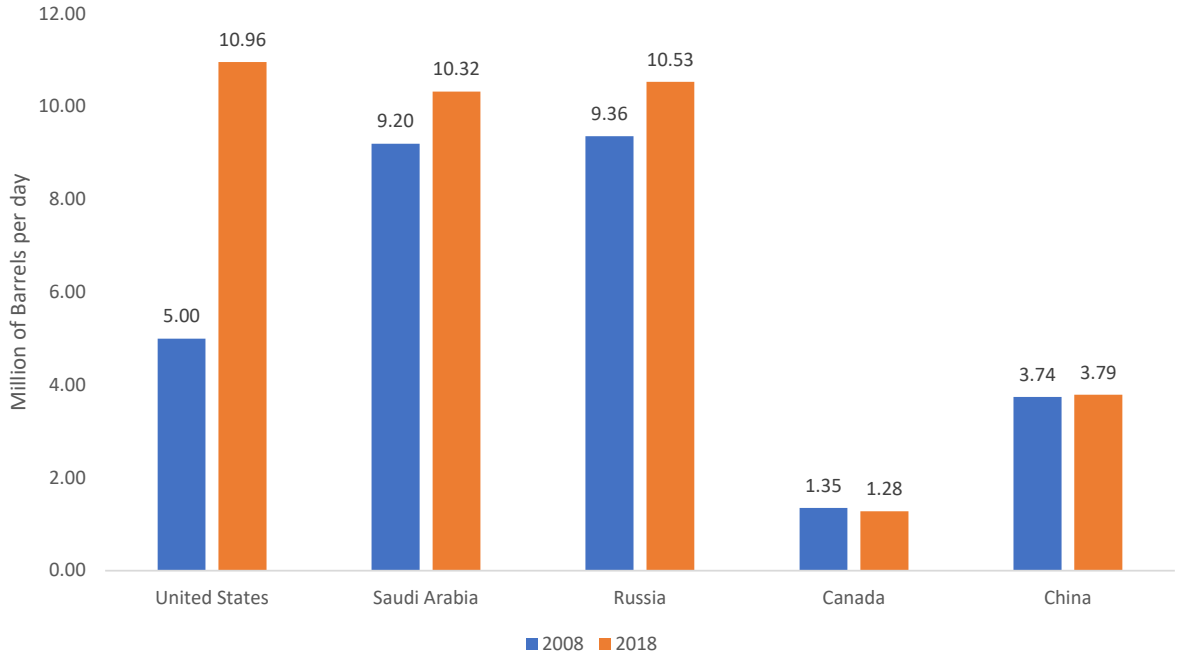
Exhibit 11: External Debt of OPEC Members as % of GDP (as of 2017)



Source: CIA.GOV | World Bank

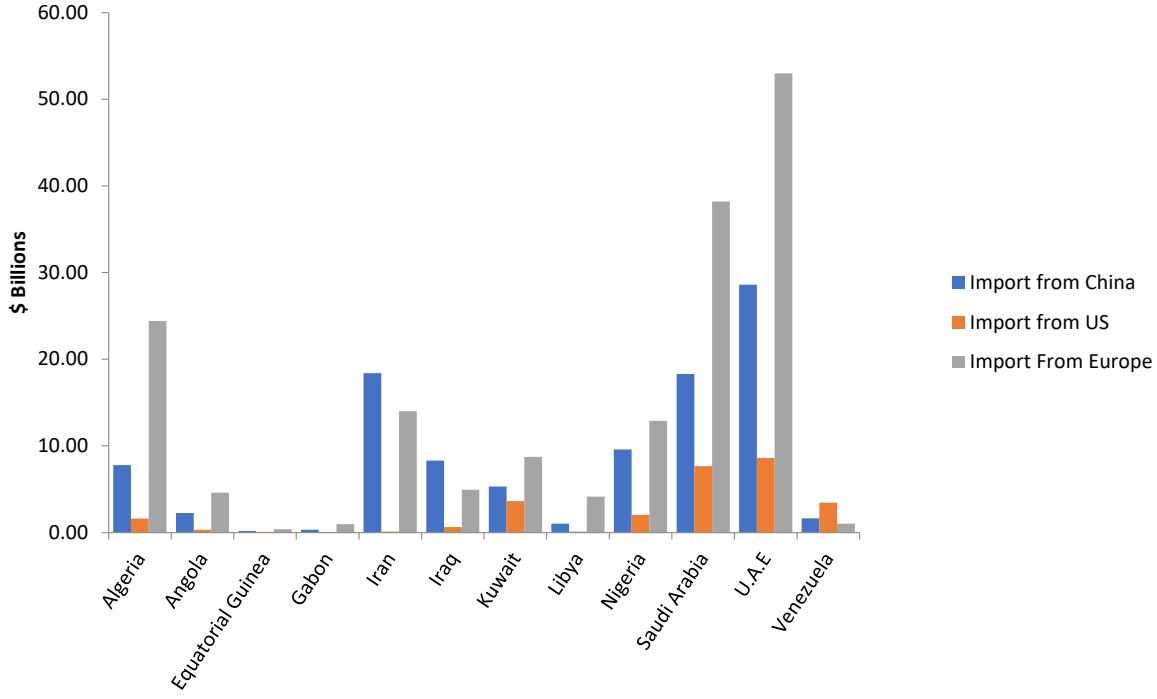
Exhibit 12: Oil Production of Select Countries, 2008 v. 2018



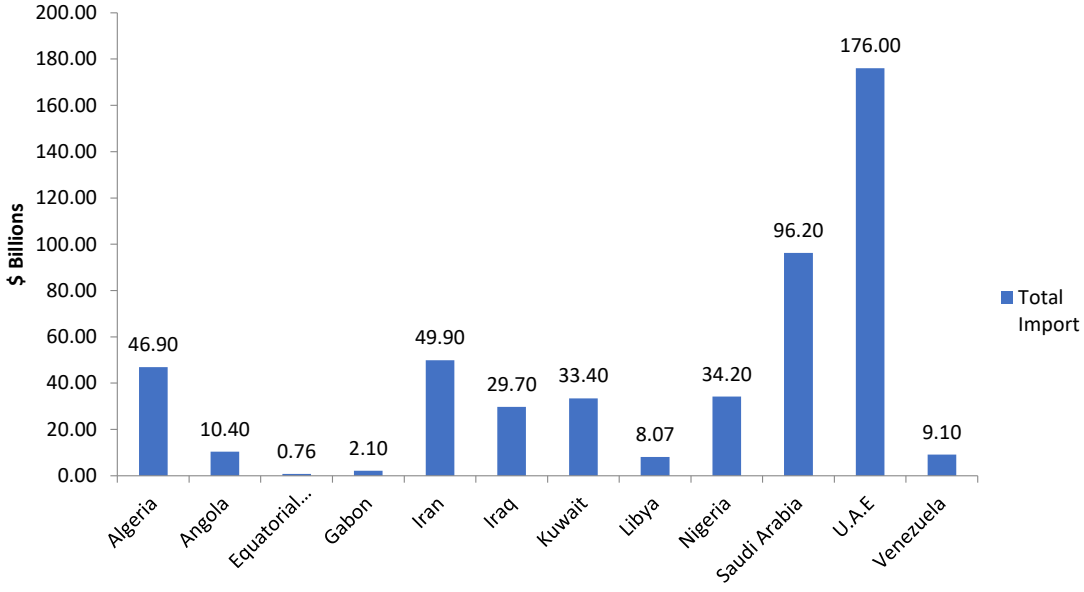
Source: OPEC ASB

Exhibit 13: OPEC Members' Imports

Part A — Members' Import Values with Major Countries



Part B — Total Imports by OPEC Members in 2017



Source: The Observatory of Economic Complexity.

Continued from p.15

has now become an accepted working assumption in the industry.[39]

2. It has been clearly demonstrated that as prices move up, additional production capacity can be brought on quickly. The US alone added more than seven million barrels per day to world crude production in only ten years (Exhibit 12, p14). The futures curve strongly suggests that the consensus view of the world's crude traders is that prices in the $40s are the new normal for crude pricing. For OPEC members such as Saudi Arabia, whose budget breakeven price is $83 a barrel, borrowing more sovereign debt may be simply extending the timing of inevitable default.

Globalization has connected the world's economies to each other. Instability in one region can now cause financial distress for the entire world. Recall the financial panic over the potential bond default of Greece in 2010 and note that Greece's sovereign debt was only one-third that of the current total OPEC member nations' debt.[40]

Regarding OPEC imports, we note the following[41](Exhibit 13, p.15):

- The total value of all imports for OPEC members was $496 billion in 2017. This represents 3% of the world's import total ($16 trillion).
- The total value of imports by OPEC from China is $101 billion.
- The total value of imports by OPEC from the US is $28 billion.
- The total value of imports by OPEC from the EU is $167 billion.

A collapse of OPEC would shrink revenues for companies that export goods to OPEC countries. For example, research by Ledbury found that Saudi Arabia, Qatar and Kuwait are all significant purchasers of foreign luxury goods.[42]

Clearly the Saudi-Russia price war has shifted the entire crude futures curve down sharply. Banks that have significant amounts of oil sector loans are likely to retrench in all their lending as they deal with regulatory capital requirements and enhanced OCC examiner oversight. US regulators have already "redlined" Exploration & Production (E&P) loans.

Saudi Arabia and other OPEC producers will need revenues to fund their deficits and the path of least resistance for them is to overproduce, compounding the supply-demand imbalance. We expect that this will result in continued pressure on crude prices. This has already significantly impacted other companies in the energy sector around the world.

United States Collateral Damage

In the US, the market cap of energy companies is 5.5% of the total market cap of the S&P 500[43] and the total employment in the US fuel industry is in excess of 1.1 million.[44]

Ironically, the US E&P industry is now the victim of its own success. The US differs from the OPEC countries in that the oil production segment is not controlled by the government. Instead, the shale extraction companies face stiff competition in a very capitalistic economy. The current Russian strategy is almost certainly a misguided attempt to crush the US shale competitors. Although many shale operators will struggle and some will not survive, the shale reserves will still exist and can be brought to market as pricing dictates. The US shale operators have one of the lowest marginal costs of production in the world and will always have a competitive advantage over many other world producers such as Canada and the North Sea.

Impact of Price War on US Producers

Over the next four years approximately $200 billion of the oil and gas industry's debt is maturing in the US alone.[45] Low oil prices have forced companies in this industry to cut capital spending and preserve cash for debt repayment. Large oil and gas companies like BP, Shell, and Total have already slashed 20% of their capex budgets for 2020; Aramco has proposed a budget cut of 25%-29% in 2020.[46] Shareholder dividends will also be adversely impacted.

Between 2015 and 2019, 208 US producers filed bankruptcy.[47] Their debt at the time of filing totaled $121 billion.[48] In addition, 224 midstream players and service companies also filed during that period.[49] The fallout is even greater when one considers that hundreds of companies engaged in out-of-court workouts or simply closed their doors and their numbers are not included in these totals.

39 Uwe Hessler, "When Will 'Peak Oil' Hit Global Energy Markets?" dw.com, November 25, 2019, retrieved from https://www.dw.com/en/when-will-peak-oil-hit-global-energy-markets/a-51367939

40 Kimber Amadeo, "Greek Debt Crisis Explained," thebalance.com, December 14, 2019, retrieved from https://www.thebalance.com/what-is-the-greece-debt-crisis-3305525

41 The World Bank, Trade Data, http://data.worldbank.org/topic/trade

42 Madelaine Olliver, "Hey Big Spender," Knight Frank Wealth Report, retrieved from https://content.knightfrank.com/resources/knightfrank.com/wealthreport2015/wealthpdf/07-wealth-report-luxury-spending-big-spender.pdf

43 Yardeni Research, Inc., https://www.yardeni.com/pub/spxshares.pdf

44 The 2019 Energy and Employment Report, https://www.usenergyjobs.org/2019.report

45 Adam Aziz, New OPEC Agreement May Take Longer to Form, says Analyst," March 10, 2020, retrieved from https://www.theedgemarkets.com/article/new-opec-agreement-may-take-longer-form-says-analyst

46 Robert Perkins, "Equinor halts US shale activity, cuts spending in response to oil price slump," EMEA oil, gas company spending reactions to price rout (chart), March 20, 2020, retrieved from https://www.spglobal.com/platts/en/market-insights/latest-news/natural-gas/032520-equinor-halts-us-shale-activity-cuts-spending-in-response-to-oil-price-slump

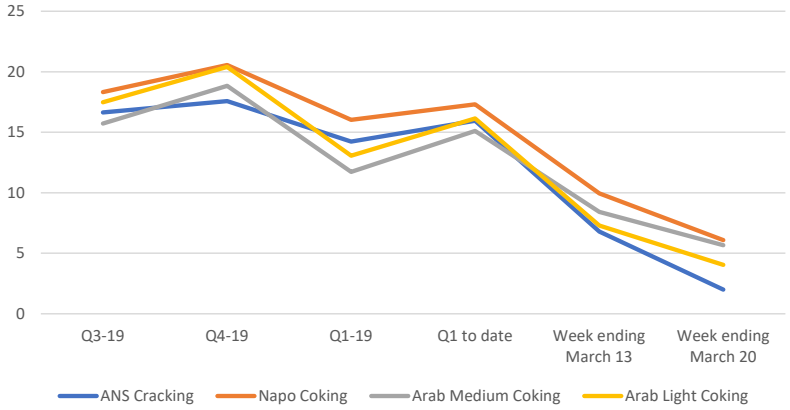
47 Haynes and Boone LLP, Oil Patch Bankruptcy Monitor, January 17, 2020.

48 Ibid.

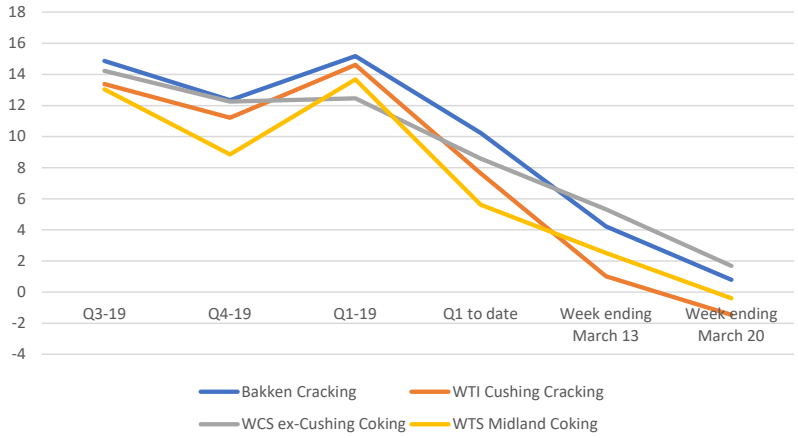
49 Ibid.; and Haynes and Boone, LLP, Midstream Report, January 17, 2020.

Exhibit 14: US Refining Margins

Part A — US West Coast Refining Margin Averages ($/b)



Part B — US West Coast Refining Margin Averages ($/b)

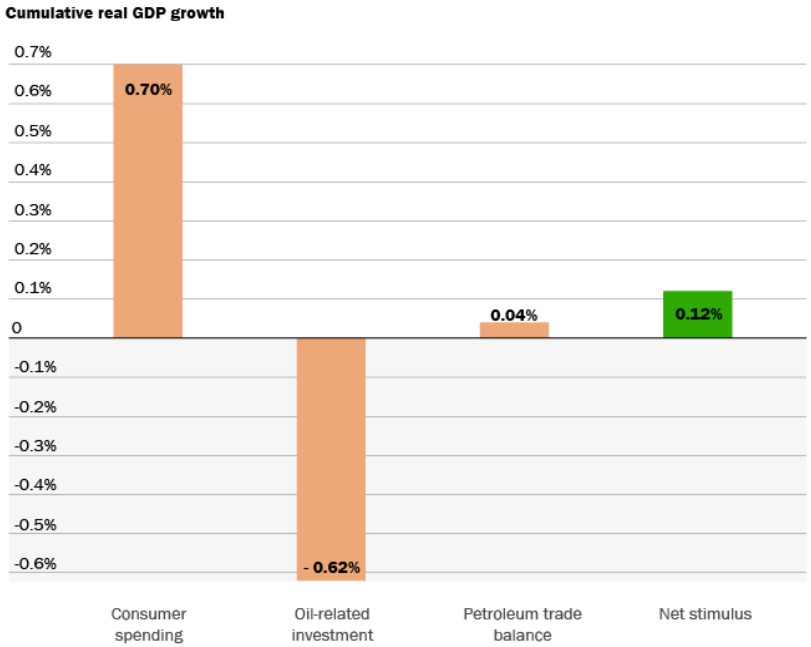


Source: S&P Global Platts Analytics

Exhibit 15: Net Effect of Oil Price Decline

Overall stimulus from lower oil prices has been near zero

Cheaper gas increased consumer spending, but investment in the oil sector fell. The net stimulus for real GDP is near zero.



Source: "Lower oil prices and the U.S. economy : Is this time different?" by Christine Baumeister and Lutz Kilian , Brookings Papers on Economic Activity Fall 2016

Continued from p.17

Smaller and mid-size E&P companies experiencing distress from low crude prices may not survive simply by downsizing and cutting dividends; however, they are likely to attempt to liquidate assets at an accelerated rate. This will put continued pressure on asset values in the segment.

Crude oil market volatility (OVX) was at 325.15 on April 21, 2020, an all-time high since the inception of the index in 2007.[50] In the preceding month, declines of 25% on March 9 and 24% on March 18 were "the two largest percentage declines in the WTI futures price since at least 1999."[51] This combination of low prices and high volatility makes it impossible for energy companies to intelligently plan or make capital expenditures, in the absence of compelling economics or any reasonable certainty as to the timing and magnitude of a future recovery.

In these circumstances, many assets have or will become unsalable. As just one example, drilling for development of reserves is now largely non-economic, which leads to rigs being stacked. As in previous industry downturns, this supply-demand imbalance arises when there are few-to-no buyers for those rigs at any price in excess of scrap value. Lenders will be reluctant to foreclose. Loans to the service companies will certainly be on non-accrual and heavily reserved by the banks. Service companies will lay off most of their employees, both field and corporate, and hunker down in an attempt to survive.

Canadian producers will be hit even harder by the declining oil price. This is because Canadian oil operations are mostly made up of oil sands projects. Technology advances like upgraders and steam-assisted gravity drainage (SAGD) have dramatically reduced the breakeven price to the mid-$40s. However, there are still fields without those facilities which require an oil price of around $65 to break even.[52]

Impact of Price War on US Midstream

US Refining Margins have declined sharply in Q1, 2020, perhaps to non-economic levels, as demand has fallen (Exhibit 14 on p.17).

Pipeline economics are a combination of fee-based and profit margin arbitrage from buying the raw commodity and separating the fractions which are then sold for a higher value (aka, crack spread). The collapse of crude pricing and decline in demand will conclusively result in a lower throughput in 2020-2021. The arbitrage play is now a high-risk undertaking as a result of the unprecedented spike in crude volatility and uncertain levels of demand for refined products.

Misconception About Lower Oil Prices – No Silver Lining

Some experts projected that the oil price decrease, prior to the pandemic, would be a positive for the US economy. The rationale was that lower gas prices will put money in consumers' hands and increase consumer spending. However, research shows that the net effect of the oil price decline through 2019 contributed approximately 0% to the growth of GDP.[53] The increase in consumer spending from lower prices has been offset by a decrease in oil-related investments (Exhibit 15 on p.17).

Non-OPEC

While low oil prices have some impact on major non-OPEC oil producing countries, including Russia, the United States and Canada, the fiscal policies of these countries are more responsible and their economies are much more diversified. Oil exports only contribute a relatively small percentage to the GDPs of these countries (Exhibit 16).

The modest budget deficits of these large non-OPEC oil producing countries demonstrates that they are better able to deal with low oil prices compared to OPEC member nations (Exhibit 17). Russia, although heavily dependent on oil and under western sanctions, experienced a budget surplus of 1.8% of GDP in 2019.[54]

The EU, which is made up of a bloc of mostly oil-importing countries, may benefit in the short-term from lower oil prices. However, EU policies tend toward greater environmental controls and the lower prices may occur as regulations force lower consumption, limiting the extent of the windfall. However, in the long run, low energy prices for the EU may slow down the EU's effort to boost inflation in the hope of stimulating economic growth.[55]

Conclusions

Continued low oil prices have the potential to cause OPEC countries to default with a possibility of significant collateral damage to the world's economy. This scenario appears reasonably likely, as evidenced by the continued growth in OPEC countries' total external debts. An OPEC downfall would certainly reduce their imports of foreign goods.

50 CBOE Crude Oil Volatility Index, https://finance.yahoo.com/quote/%5EOVX/

51 Oil Market Volatility Is at an All Time High (chart), March 27, 2020, https://www.eia.gov/todayinenergy/detail.php?id=43275

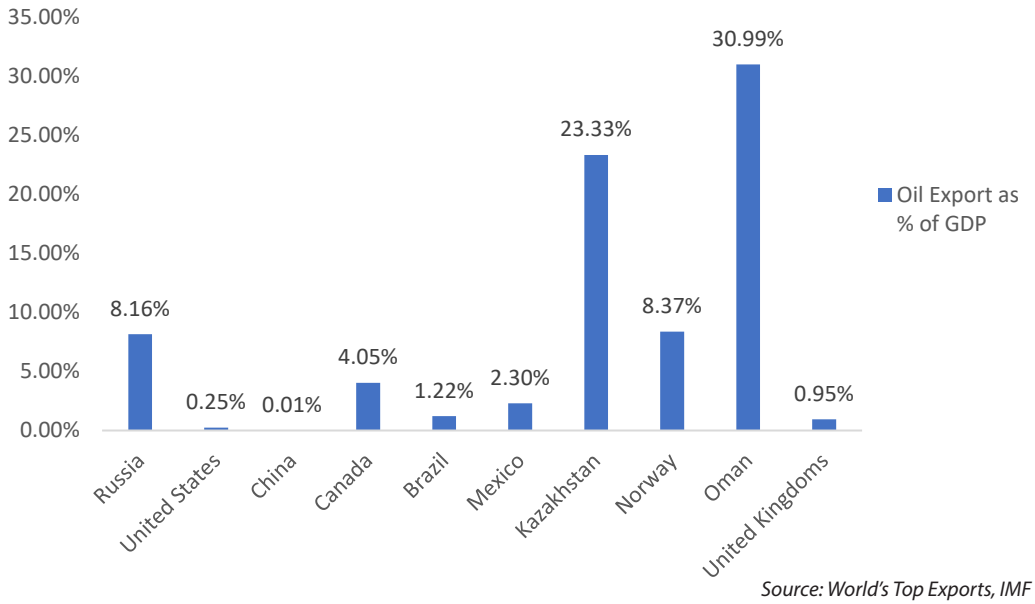
52 Costs of Canadian Oil Sands Projects Fell Dramatically in Recent Years," Bloomberg.com, May 1, 2019, https://www.bloomberg.com/press-releases/2019-05-01/costs-of-canadian-oil-sands-projects-fell-dramatically-in-recent-years-but-pipeline-constraints-and-other-factors-will-moderate

53 Christiane Baumeister and Lutz Kilian, "Lower Oil Prices and the US Economy: Is This Time Different?" Brookings paper on economic activity, Fall 2016, retrieved from https://www.brookings.edu/bpea-articles/lower-oil-prices-and-the-u-s-economy-is-this-time-different/

54 Russia Government Budget (chart), https://tradingeconomics.com/russia/government-budget

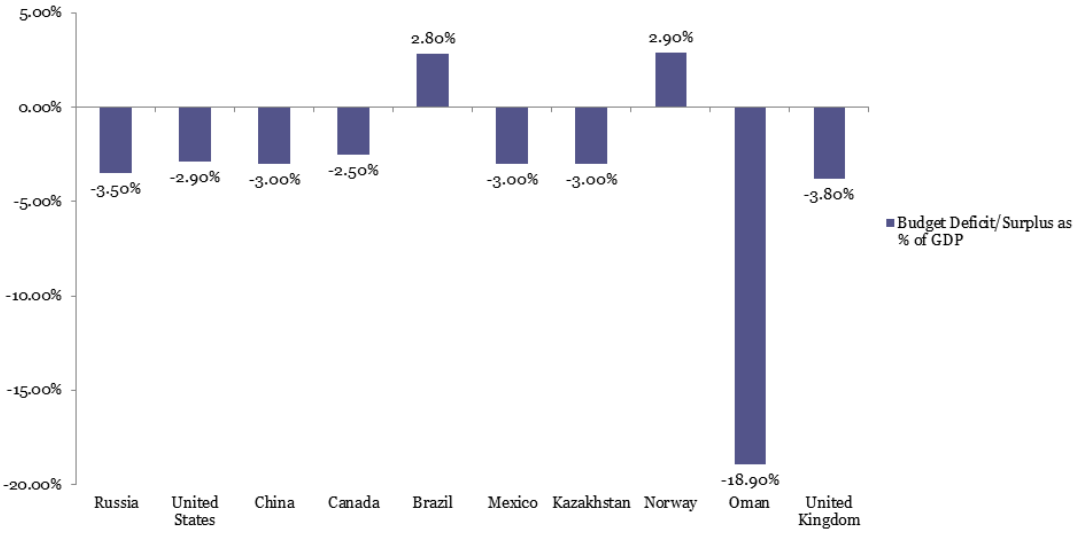
55 "Who Wins and Who Loses in a World of Cheap Oil," Stratfor Worldview, January 8, 2016, https://worldview.stratfor.com/article/who-wins-and-who-loses-world-cheap-oil.

Exhibit 16: GDP Attributed to Oil Export by Non-OPEC Countries



Source: World's Top Exports, IMF

Exhibit 17: Non-OPEC Countries Budget Deficit/Surplus



Source: CIA

Oil prices may never rebound to a point where OPEC countries can balance their budgets and remain solvent. Large US shale operations have become more efficient by reducing costs and will be able to weather the storm and continue production.

Most OPEC countries need to implement more responsible fiscal budgets and diversify their economies. It is probable that a number of these countries will run out of time and money and fail to overhaul their economies into sustainable configurations.

The current price decline is causing, and will continue to cause, significant carnage in the US oil and gas industry. As the segment collapses, bankruptcy filings have soared, and oil and gas industry employment will decline.

The energy industry and the world should be concerned by the fragility of the OPEC "consensus" and the resulting periodic damage to prices and the global economy as OPEC members are unable to reach and maintain a consensus regarding production cuts and allocations.

A time bomb of considerable proportion is ticking with no obvious solution. The impact of this problem has every likelihood of causing considerable impact to the world economy and developed nations in the near-to-mid-term.