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The Coming Oil Glut

a.k.a. For How Long Will Prices Remain High?

Summary Extract

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The Coming Oil Glut

a.k.a. For How Long Will Prices Remain High?

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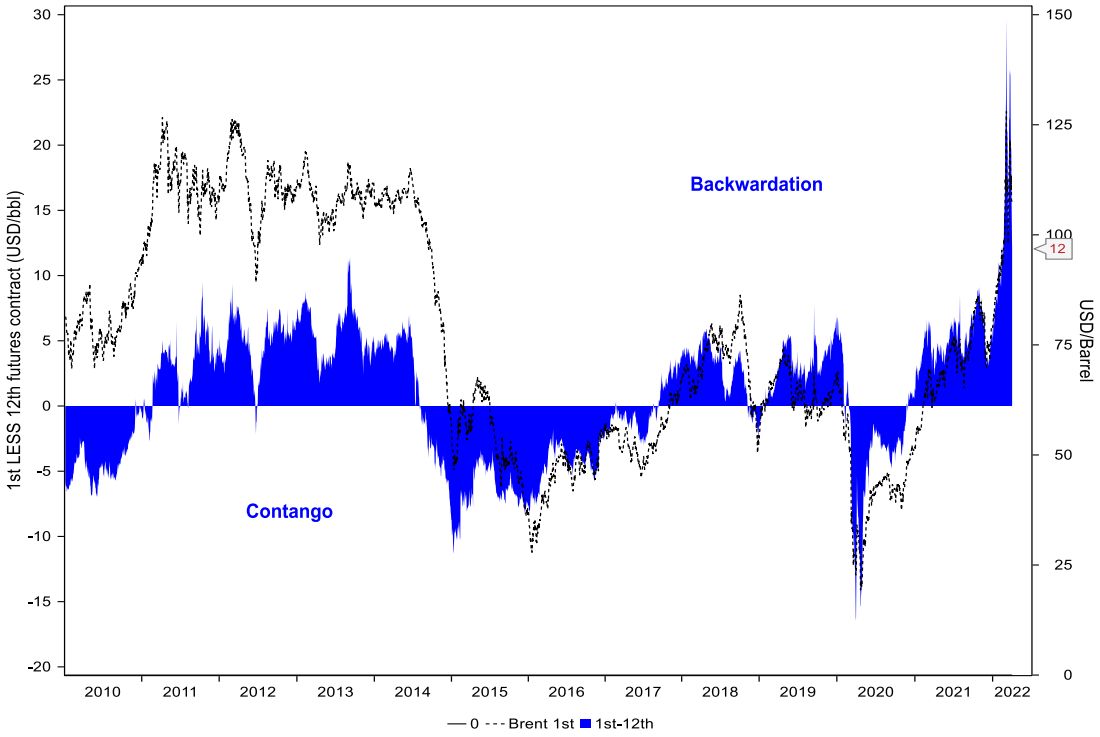
Summary & Conclusion

The invasion of Ukraine is one of the most significant geopolitical events in decades, marking the end of the ~30 year period of globalisation and international integration since the fall of the Berlin Wall (1989). With that, the previous geopolitical order is breaking down, and likely leading to a multilateral world order dominated by the current Western powers and the rising East (e.g. see the recent pacts made between Russia and China/India).

Fig 1: Brent curve backwardation (1st LESS 12th futures contract)



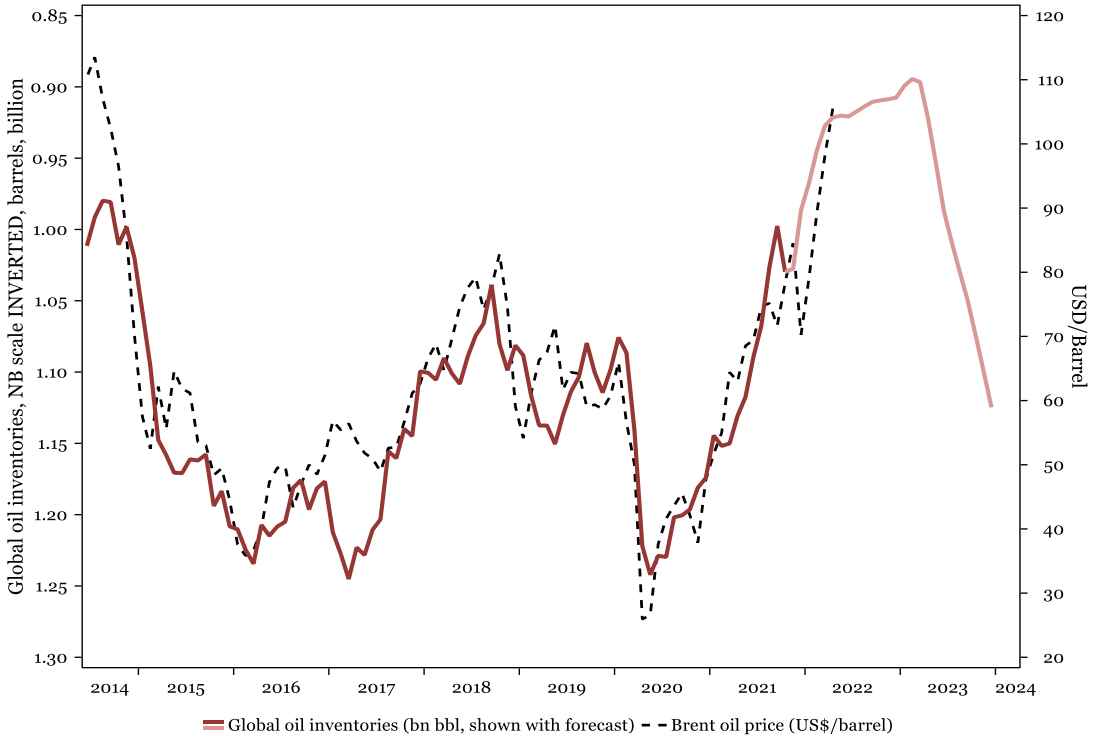
Source: Longview Economics, Macrobond

The result of those developments has been significant and is now somewhat reflected in financial market prices. Energy prices, in particular, have experienced sharp moves: Coal prices, for example, spiked 85% in early March, European gas prices tripled, while Brent/WTI oil prices remain up by 16% (having been up as much as 30% in early March). Various Western officials have attempted, by their actions and words, to reduce the impact on those energy markets: US officials, for example, have called for oil producers to rapidly expand production and, just last week, announced an accelerated drawdown of the SPR (of ~1 mbpd for 6 months – potentially cutting its strategic crude reserves by 32% by September 2022).

In recent weeks we have addressed the potential impact on **gas** prices of Europe's disconnection from Russian gas exports (see Commodity Fundamentals Report, 16th Feb 2022: "Energy as a Weapon"). In summary, given Europe's significant reliance on Russian gas exports, and without a dramatic overhaul of Europe's energy infrastructure, we expect gas prices to remain at high levels.

There are several questions, though, that remain unanswered for **oil** markets: How reliant is Europe on Russian oil? What has been the impact of sanctions on Russian oil exports? How will global supply/demand evolve in an environment of persistently high oil prices? What, then, is the outlook for global oil inventories (and the global oil price)?

Fig 2: Global oil inventories (bn bbl), shown with forecast



Source: Longview Economics, Macrobond

In our view, **if oil prices remain at current levels, there will be a significant supply response over the coming 12 – 18 months which will generate a global supply surplus/rising oil inventories in 2023.**

Indeed, while we expect small/medium-sized deficits to continue throughout this year, there are four key factors that we expect will drive a **sizeable surplus in the global oil supply-demand balance by mid-2023.**

In particular:

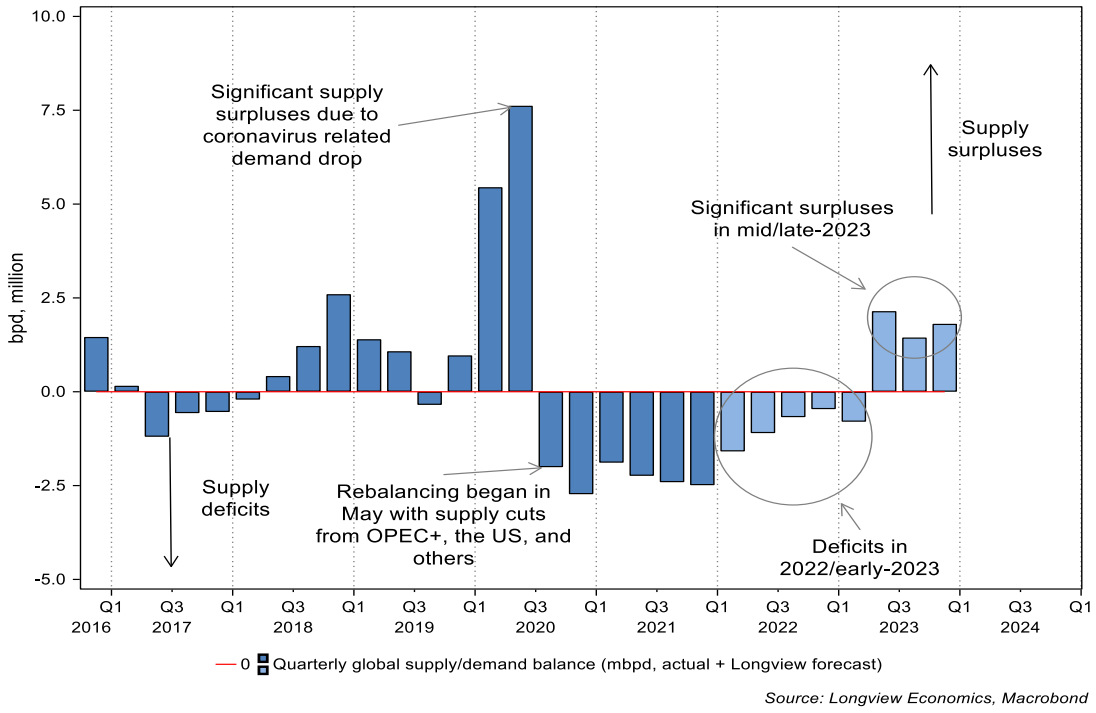
(i) **Russian** oil production/trade flows have remained strong despite sanctions (point 1 below);

(ii) **OPEC+** oil production should continue to increase (albeit at slowing rates, point 2 below);

(iii) **US** oil production growth should continue, driven by rising capex and smaller private producers (driving supply growth of ~1 mbpd in 2022 and 2023), despite concerns about shortages of fracking supplies (point 3); and

(iv) **global oil demand** will continue to grow (by 4.1 mbpd & 3.5 mbpd in 2022/23 respectively), but not enough to offset the expected supply growth (point 4).

Fig 3: Oil supply & demand balance (mbpd), shown with Longview forecast



Source: Longview Economics, Macrobond

For detail on those points, see Section 1 below.

As such, those factors should result in a global supply surplus by Q2 2023 (with relatively small deficits for the remainder of this year, see fig 3). Of note, that doesn't include the extra supply driven by the recently proposed SPR drawdowns in the US (of 1 mbpd, albeit in reality it's more likely to amount to ~0.5 mbpd over the next 6 months[1]). Overall, though, all of that suggests that oil inventories will begin increasing next year, thereby resulting in a period of oil price weakness.

[1] NB while the US announced an SPR drawdown equivalent to 1 mbpd, it's likely that the US only has the capacity to release between 0.4 mbpd – 0.5 mbpd from its reserve. With that, an SPR of such magnitude could result in logistical bottlenecks in pipelines/storage hubs – thereby having counter-productive chain effects on supply from US oil producers.

The key risks to that forecast are numerous. In particular, ongoing tensions between the US/Europe and Russia means geopolitical risk remains high. However, the risk is two-sided (i.e. tensions could worsen or ease from here, and thereby result in higher or lower prices). Likewise, it's possible that OPEC+ change their production policy. The risk, though, would actually be to the upside (i.e. it's likely that OPEC+ increase production quotas[2], thereby resulting in a faster increase in global oil inventories). The same can be said of our global demand forecast. In particular, we assume that oil demand growth is strong relative to history over 2022 and 2023. With that, given growing concerns over recession risk, it's possible that demand growth is weaker than we estimate.

Fig 4: Brent oil price (USD/bbl) vs. Urals oil price (USD/bbl)

Source: Longview Economics, Macrobond

[2] Given that oil prices are significantly higher than members' fiscal breakevens, the incentive for many members is to increase production to improve revenues.

Section 1: Key Points

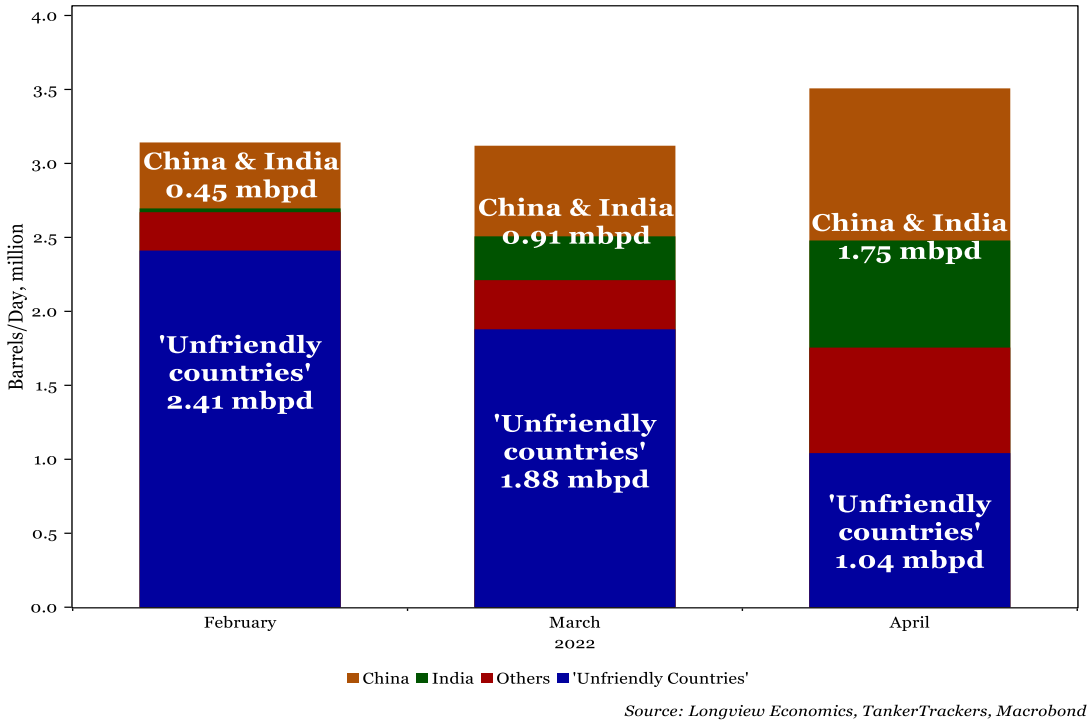
There are three key factors that should drive average global supply growth of 4.6 mbpd and 4.7 mbpd this year and next year respectively. In particular:

(i) **Russian oil production/exports should remain at high levels** (beyond Q2). The general expectation among market commentators is that the impact of western sanctions on the Russian economy (and oil production) will be dramatic: Russia produces over 10% of the world's crude, the loss of which would lead to a sharp fall in global oil

inventories. Given Russia's current trade with 'unfriendly countries' (i.e. the West, which account for ~60% of Russian crude & product exports), a significant portion of Russia's consumer base is, indeed, at risk. The IEA, in particular, expect that sanctions on Russia would result in a fall in production of 35% (3 mbpd) in Q2 this year (vs. Q1). On top of that, it's possible that further impediments are yet to come – especially given Putin's decision to enforce trade in roubles, and that many European countries are aiming to end reliance on Russian crude by year end.

Indeed, given international backlash against Russia as well as 'self-sanctioning' by various trading companies, there's already signs that Russian oil production is falling sharply. Last week, Transneft (Russia's oil pipeline operator) set caps on its oil pipeline flows to avoid overfilling storage capacity (albeit that only applied to companies struggling to find buyers; companies that have no difficulty selling cargoes are not being capped). Likewise, Bloomberg recently reported that Russian oil production fell below 11 mbpd for the first time since late 2021.

Fig 5: Russian oil exports (via tankers, mbpd) per month[3]



Source: Longview Economics, TankerTrackers, Macrobond

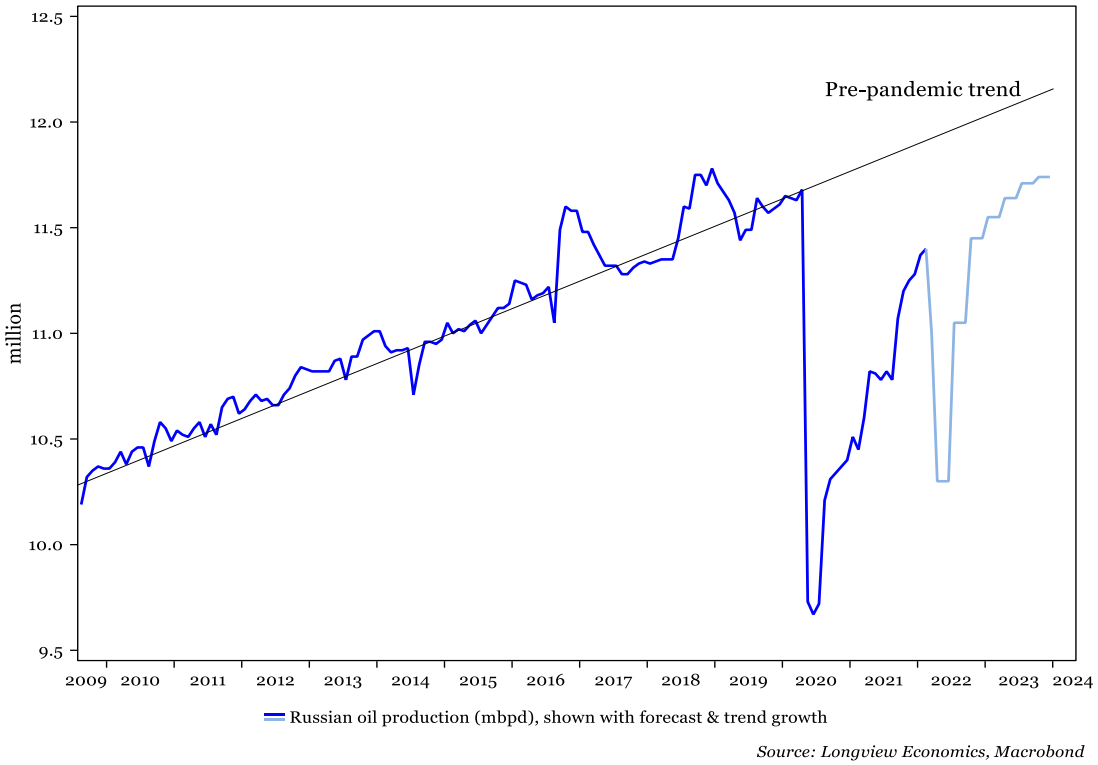
[3] For April, the chart shows total Russian oil exports (via tanker) for the first three days of the month (in mbpd).

On the other hand, however, and despite the vast slew of sanctions thus far, **Russian oil exports have remained relatively robust**. Tanker tracking data suggests that daily Russian oil exports (via tanker) remained stable in March and increased in the first few days of April (fig 5). While exports via tanker to Europe & North America have fallen by 57% (from 2.4 mbpd to 1.0 mbpd), all of that was replaced by buyers in

Asia/elsewhere (see fig 5). Data from Vortexa comes to a similar conclusion – of the 5.5 mbpd of total crude & product exports to 'Unfriendly Countries'[4] pre-invasion, 4.7 mbpd (89%) of it either remained intact or was replaced by Asian buyers during March. With that, many European countries have backed away from immediate/sweeping Russian oil bans in recent weeks (e.g. German Chancellor Scholz recently said that banning Russian energy "would mean plunging our country and the whole of Europe into a recession").

All of that coincides with the change in the Russian oil price since the invasion. While the discount to Brent/WTI prices is now ~$30/bbl, the Urals crude benchmark is still relatively high (currently ~$75/bbl, i.e. near Nov 2021 Brent prices, see fig 4). That therefore suggests that: (i) global demand for Russian crude remains reasonably robust; and (ii) there remains a strong price environment to encourage Russian oil producers to expand production (assuming they retain enough know-how and access to the correct equipment).

Fig 6: Russian oil production (mbpd), shown with Longview forecast



Source: Longview Economics, Macrobond

[4] 'Unfriendly Countries' = Europe, North America, Japan, South Korea, Australia, Singapore, Taiwan, etc.

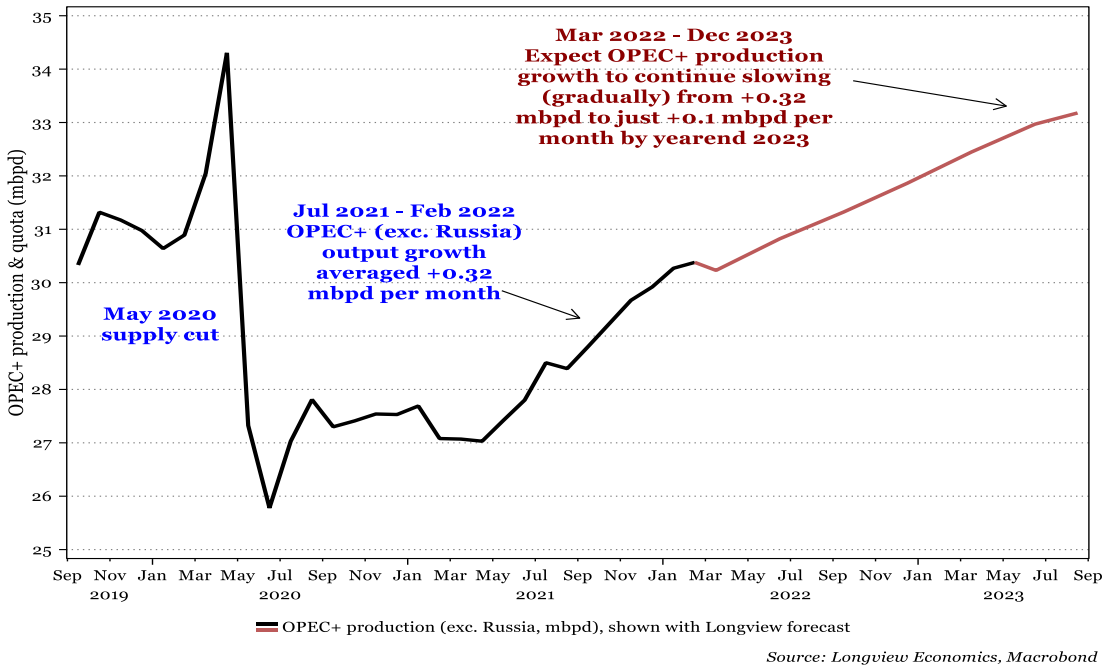
There have also been numerous developments that suggest Russia will increasingly switch its consumer base to its eastern partners. In particular, before the invasion, Russia signed deals with China and India to increase energy relationships over coming years. India agreed to increase energy interdependence with Russia, targeting annual (oil & gas) trade of $30bn by 2025 (from $11bn currently), while Rosneft

signed a deal with China's CNPC to extend their existing oil deal for another 10 years. As such, and while China and India together made up just 30% – 40% of Russian crude & product exports before the invasion, it's likely that those, and similar, countries will replace the West over time as reliable destinations for Russian oil.

Overall, therefore, while there's a possibility of further volatility/sanctions on Russian energy, the largest marginal impact has probably already occurred. Despite that, a stable/strong price environment remains for Russian energy producers. As such, we expect that, following an initial fall in production of ~1.0 mbpd on average in Q2, Russian oil supply should begin to recover, stabilising just above pre-invasion levels by year end, and continue to expand into 2023 (see fig 6).

(ii) **OPEC+ production should continue to increase** (steadily) **through to year end 2023**. Since June last year, OPEC+ oil production has grown by almost 3 mbpd. That was driven by its ongoing policy to increase supply quotas by +0.4 mbpd per month[5] (which will increase to +0.432 mbpd per month as of last week's meeting). Having said that, it's clear that many OPEC+ members are struggling to meet their production quotas. We still, though, expect OPEC+ production to continue rising through to 2023.

Fig 7: OPEC+ production (mbpd), shown with Longview forecast[6]



Source: Longview Economics, Macrobond

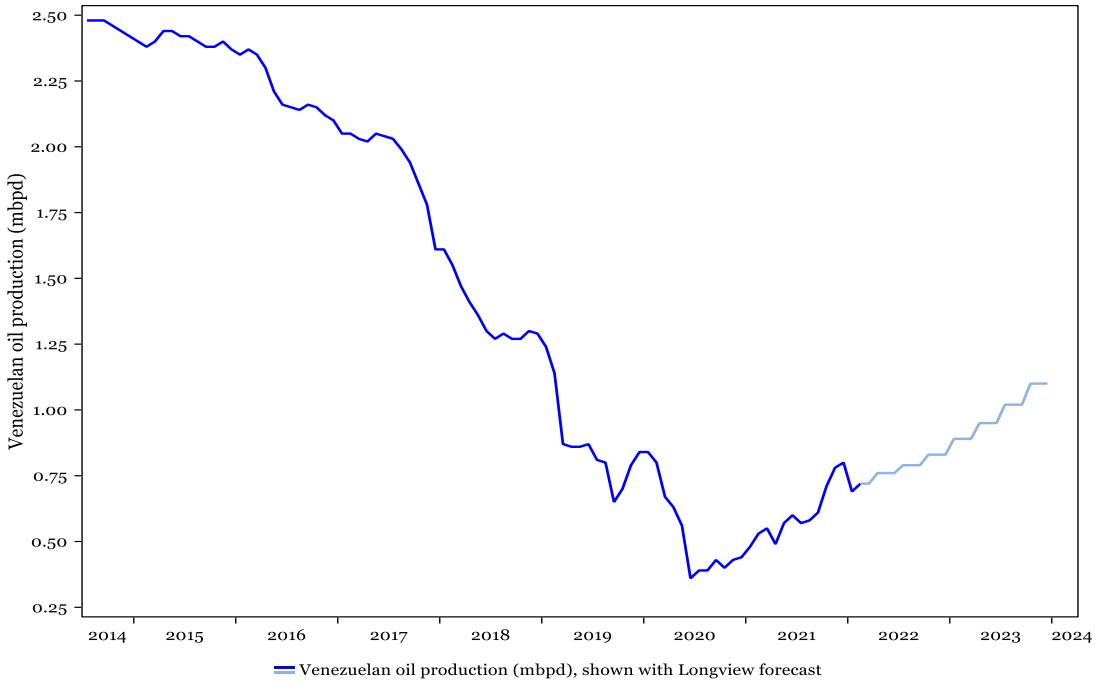
[5] NB The OPEC+ policy refers to production quotas, and not actual supply. Given production problems among many OPEC+ members, actual monthly production growth is likely to continue to fall below that of their monthly quota allowance (+0.432 mbpd).

[6] Our forecast assumes that: (i) OPEC+ retain their ongoing production policy (monthly increases in quotas); and (ii) oil prices remain at high levels throughout forecast period. OPEC+ here refers only to OPEC+ members party to the quota agreement, i.e. it excludes Iran, Venezuela and Libya. **It also excludes Russia.**

In particular, six OPEC+ members still have capacity to increase production (and have continued to do so): Saudi, Iraq, the UAE, Kuwait, Algeria, and Russia. Those six producers have been the drivers of 96% (+2.8 mbpd) of OPEC+'s monthly production growth since June. That policy will likely remain in place until they approach full capacity (or oil prices move significantly lower). We expect Algeria, for example, to reach full capacity in Q4 this year. Saudi, on the other hand, will likely increase production through to Q3 next year (up to ~12 mbpd, from 10.3 mbpd currently – see fig 14 in Appendix 1).

Similarly, **Iran** and **Venezuela**, who have typically suffered from weak production growth, are now recovering. Iranian production is likely to recover sharply assuming an agreement will eventually be signed with the US (fig 15). While an agreement has yet to be finalised, and while there have been numerous hiccups since the Russian invasion, both sides have reiterated their intention to finalise on a deal. Likewise, Venezuelan production has doubled since mid-2020 (i.e. from 0.36 mbpd to 0.72 mbpd last month – see fig 8), driven by increased diluent imports from Russia and Iran (used to blend with its extra-heavy crude to make it saleable). On top of that, given the change in tone from the US in recent weeks, it's possible that an easing of sanctions could accelerate the recovery in Venezuelan production even further (with estimates ranging from an extra 0.2 – 0.3 mbpd above current production levels).

Fig 8: Venezuelan oil production (mbpd), shown with Longview forecast



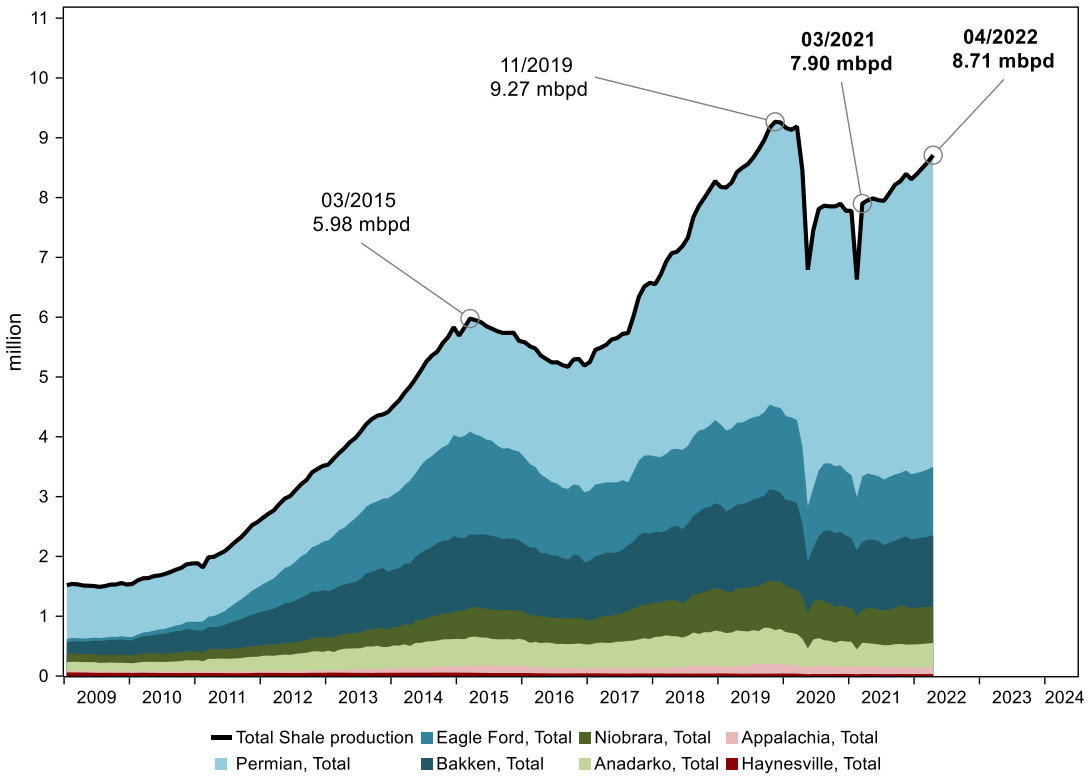
Source: Longview Economics, Macrobond

Overall, therefore, we expect OPEC+ production (inc. Iran and Venezuela, exc. Russia) will continue to expand over coming quarters (by

3.2 mbpd by year end 2022, 2.9 mbpd by year end 2023). With that, should oil prices shift meaningfully to the downside, it's likely that OPEC+ will adjust their policy and reduce production growth (albeit, not until after oil prices have shifted meaningfully downwards).

(iii) **US shale production is already growing rapidly – we expect that to continue.** Between Apr 2020 and Feb 2021, US oil production was largely unchanged (average WTI oil price of ~$40/bbl). Since then, though, US production has grown by 1.1 mbpd (with 80% of that growth driven by shale – see fig 9 below). Many market commentators still, however, point to low enthusiasm for higher US oil production. Indeed, in the latest Dallas Fed Energy Survey (published in March), over half of US producers said that the main reason they weren't expanding production faster was due to investor pressure to maintain capital discipline (see fig 16). Another key issue includes equipment/materials shortages (e.g. frac sand), with a record number of services companies reporting delays in supplies (fig 17).

Fig 9: US shale production (mbpd) by major basin



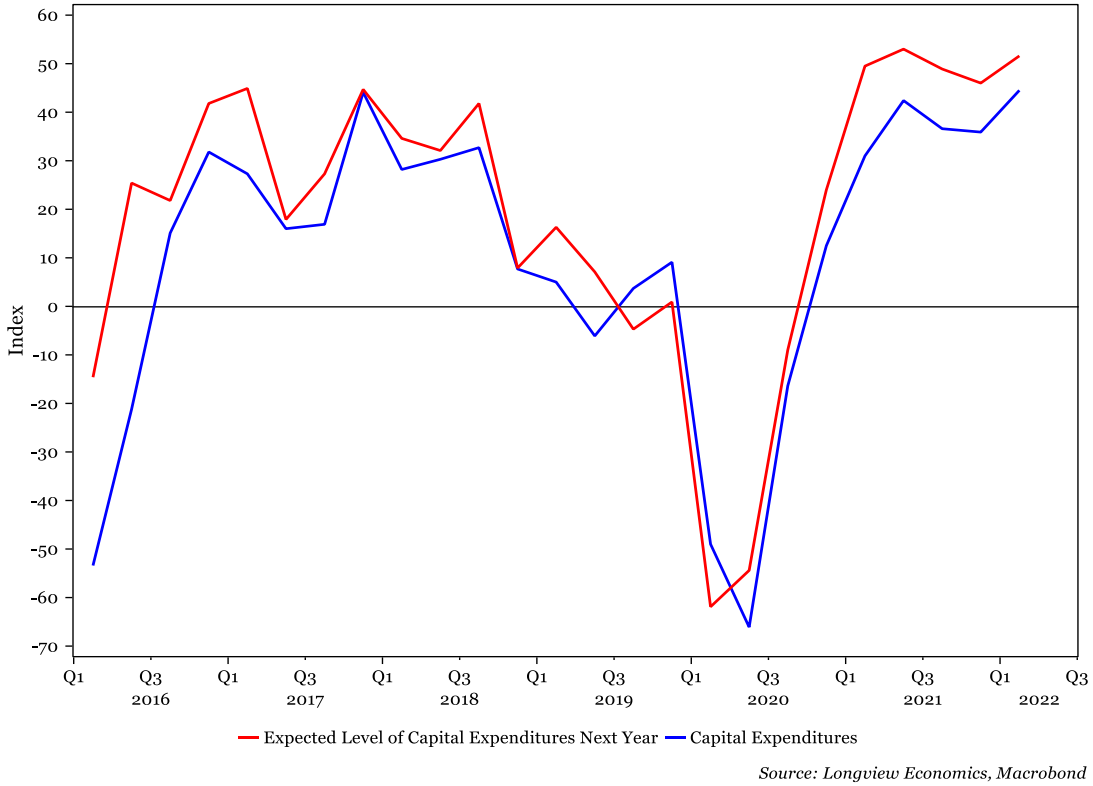
Source: Longview Economics, Macrobond

Now though, with oil prices almost double the levels of 12 months ago, the incentive for US producers to expand production levels has improved dramatically. Given the traditionally quick response time of shale production (i.e. 3 – 6 months), a supply response from the US could be rapid and significant. The question, therefore, is whether US producers

will respond to those high prices or whether they'll continue to be restrained by investors/equipment shortages.

As mentioned above, **US production has already started growing rapidly** (by ~1.1 mbpd in the past year, equivalent to average growth of just below +0.1 mbpd per month). In the same Dallas Fed Energy Survey, for example, producers reported that their average economic breakeven production price was between $48/bbl – $69/bbl (i.e. around half of current prices, see fig 18). Furthermore, despite their concerns over investor pressure, major US shale producers expanded capex by ~20% in Q4 2021 (vs. Q3). Likewise, the number of producers expecting an increase in capex this/next year is close to record levels (fig 10). That has already resulted in increased shale activity. While rig counts have been increasing gradually, they are now just 22% below pre-pandemic levels (fig 19). Frac spreads are just 16% below pre-pandemic levels. The number of wells drilled in February (vs. Jan) rose by the most since before the pandemic (fig 12). Well completions were up by the most since August 2021. All of that supports the case for further gains in US oil production this/next year.

Fig 10: Dallas Fed Energy Survey: E&P companies reporting an increase in capex & expecting an increase in capex next year



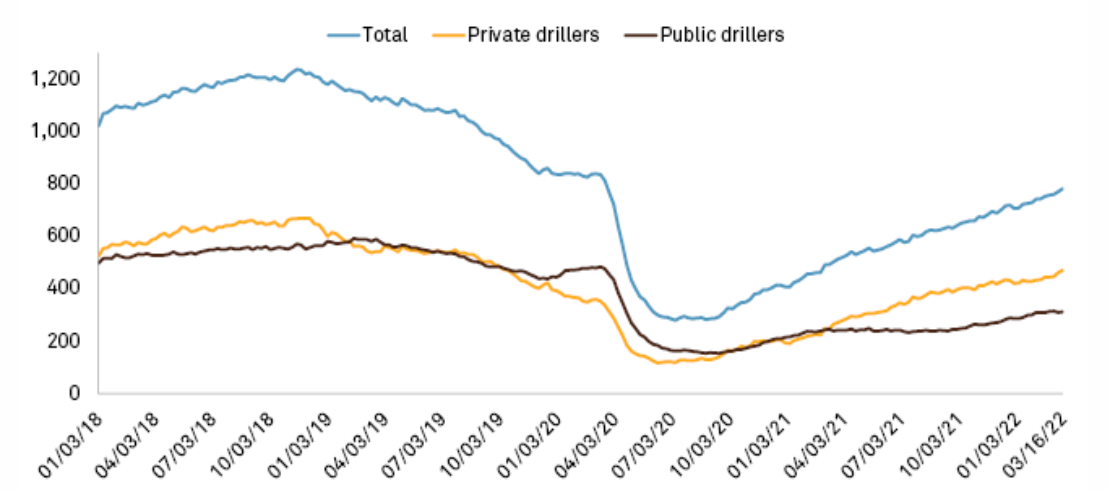
Source: Longview Economics, Macrobond

Likewise, while many oil majors are suffering setbacks from investor pressure and equipment shortages, **small, private producers are expanding rapidly**. 62% of the active oil/gas rigs in the US are now

operated by private companies (up from 49% in 2019). While public drillers rig counts remain 35% below pre-pandemic levels, private drillers rigs are at their highest level in three years (see fig 11 below). Private E&P rigs in the Permian grew by over 100% Y-o-Y in Feb, while public E&P rigs grew by just 19% over the same period. Indeed, while public/major producers are being constrained by investor pressure, private producers (largely backed by private equity funds) have been able to continue expanding operational capacity. With that, three of the largest private producers (Endeavour, SM Energy, and Mewbourne) have all rapidly accelerated shale production in the past 12 – 24 months (growing production by 20% since Mar 2021, see fig 22). Endeavour and Mewbourne together now operate more rigs than Exxon and Chevron combined (33 rigs vs. 27 rigs) and are expected to increase production by another 25% this year (i.e. up ~0.1 mbpd from 2021).

With that, while private producers are growing rapidly, major shale producers are also likely to expand production somewhat in coming quarters. In their latest earnings calls, Exxon and Chevron stated that oil market conditions are improving. They have therefore set strong Permian production growth targets of 25% and 10% respectively this year (i.e. equivalent to total production growth of ~0.2 mbpd).

Fig 11: US oil rig count (public & private drillers)



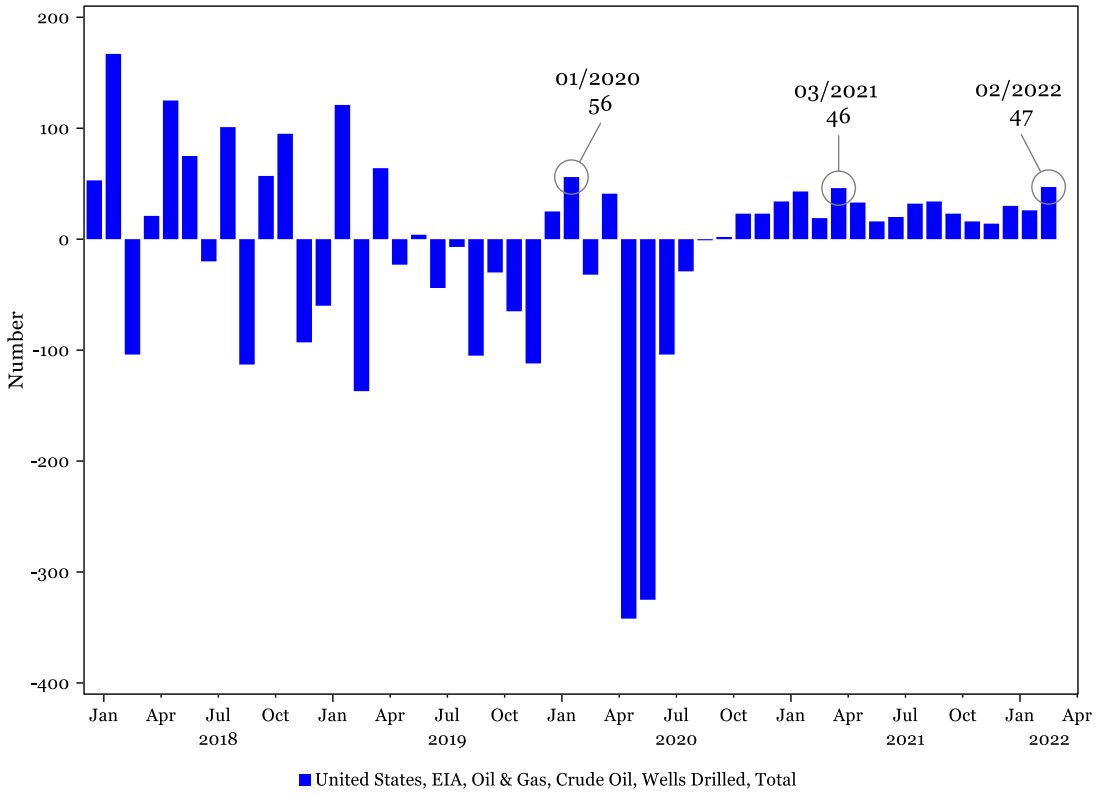
Source: S&P Platts

Equipment/labour shortages are also likely to ease this year. Various E&P/services companies have previously highlighted that shortages of rigs and sand are limiting the ability to expand operations. Now, though, a number of frac sand producers are starting to accelerate activity. Capex levels among the largest sand suppliers have more than doubled since Q2 (US Silica said in their latest earnings call that ~67% of their capex was going to new projects). Likewise, other suppliers have suggested that shortages are limited to truck deliveries/driver shortages – while rail deliveries have suffered no operational setbacks. Smart Sand, for

example, have suggested that they have seen no drag on rail-based volumes, and that they have doubled capacity in the past year.

Overall, therefore, there is a substantial case for continued US oil production strength in coming quarters. As such (should oil prices remain at high levels), we expect US oil production to **continue growing at the pace of the past 12 months**, growing from 17.5 mbpd currently to 18.6 mbpd by year end 2022, and 19.8 mbpd by year end 2023. Should, however, equipment/materials shortages ease, it's possible that US production grows faster than we forecast in our model.

Fig 12: US oil wells drilled (per month)



Source: Longview Economics, Macrobond

Those three factors together therefore account for supply growth of 4.6 mbpd in 2022 (on average vs. 2021), and 4.7 mbpd in 2023 (on average). Accounting also for other, minor producers, total global supply growth should therefore be 5.4 mbpd and 5.6 mbpd in 2022/23 respectively (see table 1 below). Another key factor, though, is our expectation for global oil demand growth.

Table 1: Global oil supply (average per year, mbpd) by major producer, shown with Longview forecast

Producer	2019	2020	2021	2022	2023
Russia	**11.58**	**10.61**	**10.87**	**10.95**	**11.66**
		-0.97	0.26	0.09	0.71
USA	**17.25**	**16.60**	**16.70**	**18.08**	**19.20**
		-0.66	0.11	1.38	1.12
OPEC+ (exc. Russia)	**33.61**	**31.62**	**32.29**	**35.45**	**38.36**
		-2.00	0.67	3.16	2.91
Saudi	9.81	9.21	9.12	10.73	11.87
		-0.59	-0.10	1.61	1.15
Iraq	4.71	4.05	4.03	4.39	4.76
		-0.66	-0.02	0.36	0.37
UAE	3.16	2.87	2.72	3.09	3.44
		-0.29	-0.15	0.37	0.35
Kuwait	2.68	2.43	2.42	2.72	2.92
		-0.25	-0.02	0.30	0.20
Algeria	1.02	0.90	0.91	1.00	1.02
		-0.13	0.01	0.09	0.02
Iran	2.36	1.99	2.41	2.57	3.27
		-0.37	0.42	0.16	0.70
Venezuela	0.88	0.53	0.61	0.78	0.99
		-0.35	0.09	0.16	0.22
Others	38.05	35.17	35.38	36.13	37.01
		-2.88	0.21	0.75	0.88
Global	**100.50**	**93.99**	**95.24**	**100.61**	**106.23**
		-6.51	1.25	5.37	5.63

Source: Longview Economics, IEA

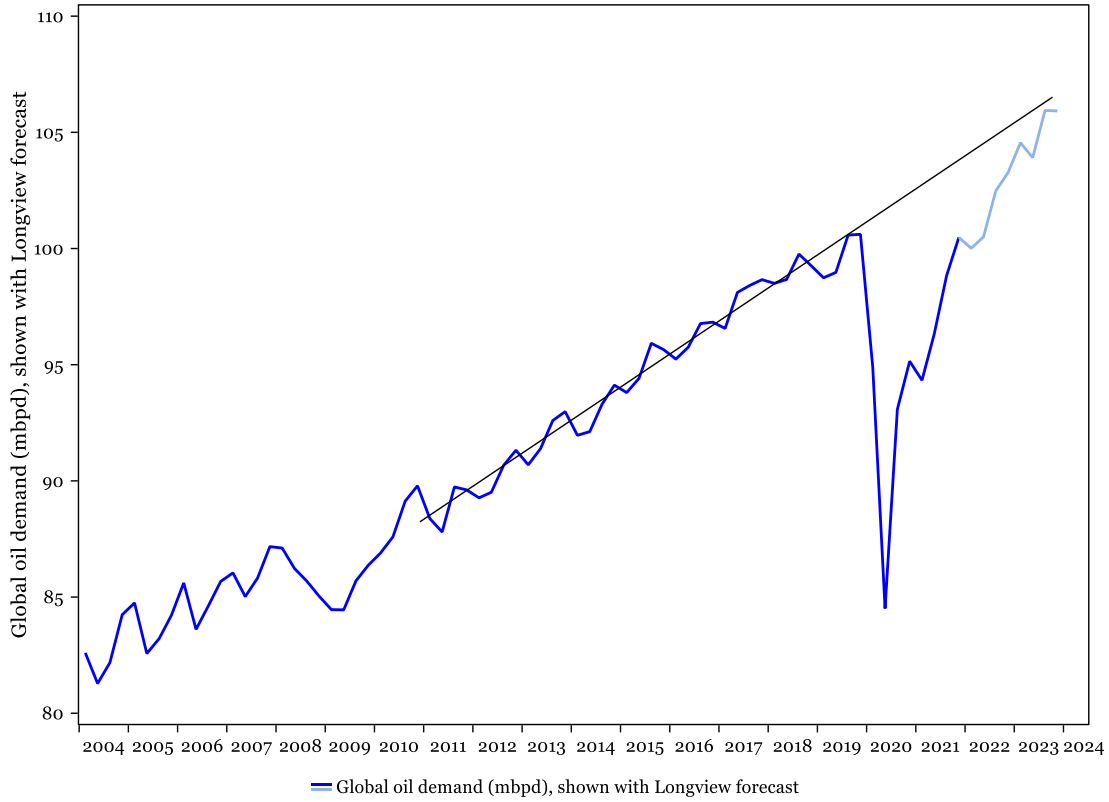
(iv) **Global oil demand growth is strong, albeit not enough to offset supply.** Last year, global oil demand grew by 5.6 mbpd (on average) to recover to 100.5 mbpd by Q4. With that, there are numerous reasons to expect further strong growth over 2022: The drawdown of Covid restrictions[7]; and the economic rebound from the pandemic. In the US and Europe, for example, air travel passengers are back at/close to pre-pandemic levels (e.g. see fig 20); miles driven are high (relative to seasonal norms, see fig 21); and Chinese monetary policy is easing and likely to result in reasonably strong economic growth (see our latest Chinese macro update, 29th Mar 2020, "Chinese Macro: Have Policy Makers Done Enough?"). All of that suggests that the pandemic impact is fading, and that global demand growth is normalising. As such, we expect oil demand growth to be 4.1 mbpd in 2022 (on average, vs. 2021), and 3.5 mbpd in 2023 (see fig 13).

Despite that strong demand forecast, it's unlikely to match global supply growth. While demand should recover to pre-pandemic levels (just above pre-pandemic trend growth, fig 13) the growth in oil production

[7] While China have been locking down a slew of cities in recent weeks, officials have explicitly announced their intention to ease Covid policy (from their previous 'Zero-Covid' approach).

from other producers is set to outpace it. On top of that, our demand forecast doesn't account for rising recession risks. Various indicators are pointing to the possibility of a slowdown in the US/global economy in coming months (e.g. see the 2s/10s UST spread, fig 23). A recession, sparked by tightening monetary policy, would result in a sharper deceleration in global oil demand growth – further adding to the case for lower oil prices in coming quarters.

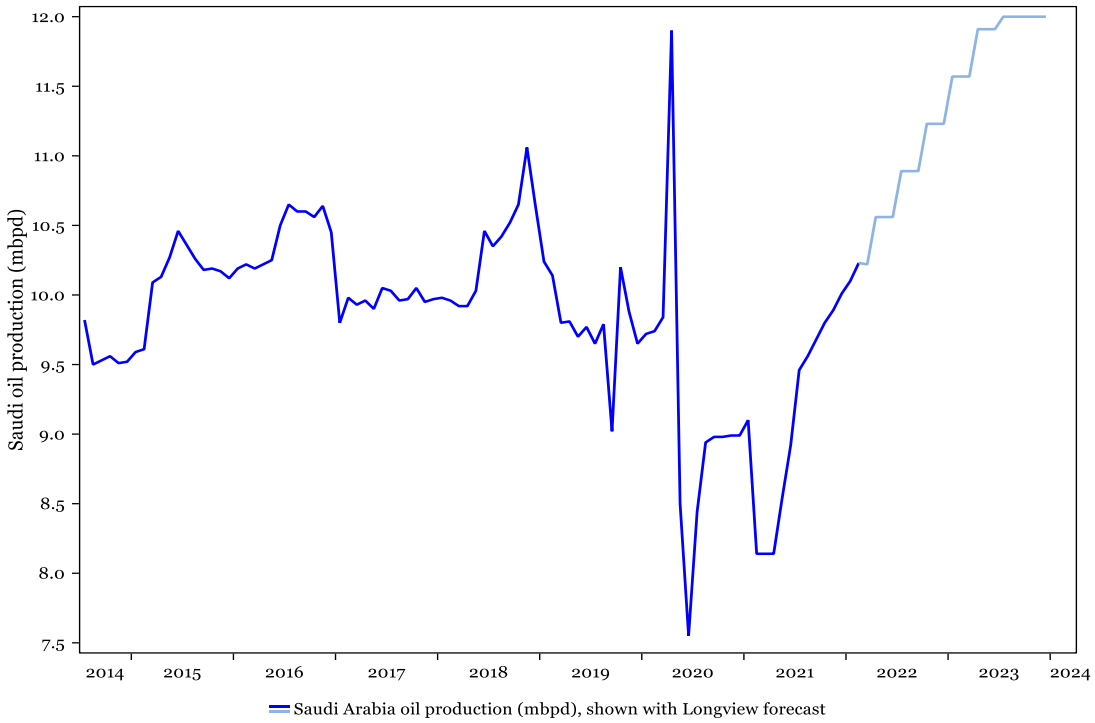
Fig 13: Global oil demand (mbpd), shown with Longview forecast



Source: Longview Economics, Macrobond

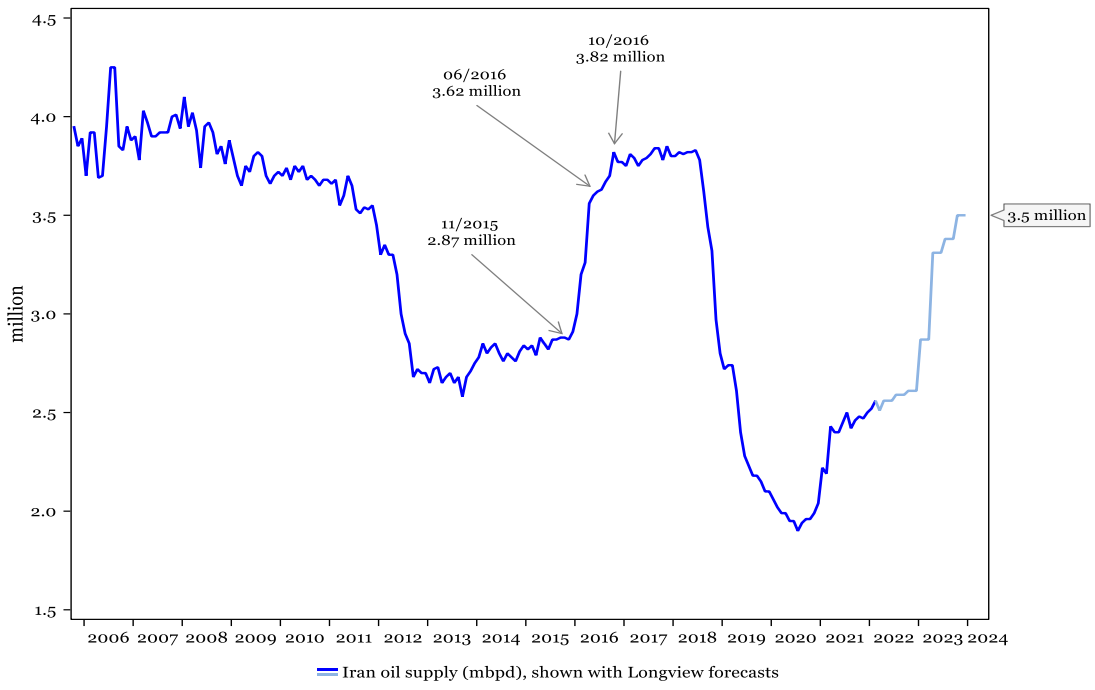
Appendix 1: Key Charts

Fig 14: Saudi Arabia oil production (mbpd), shown with Longview forecast



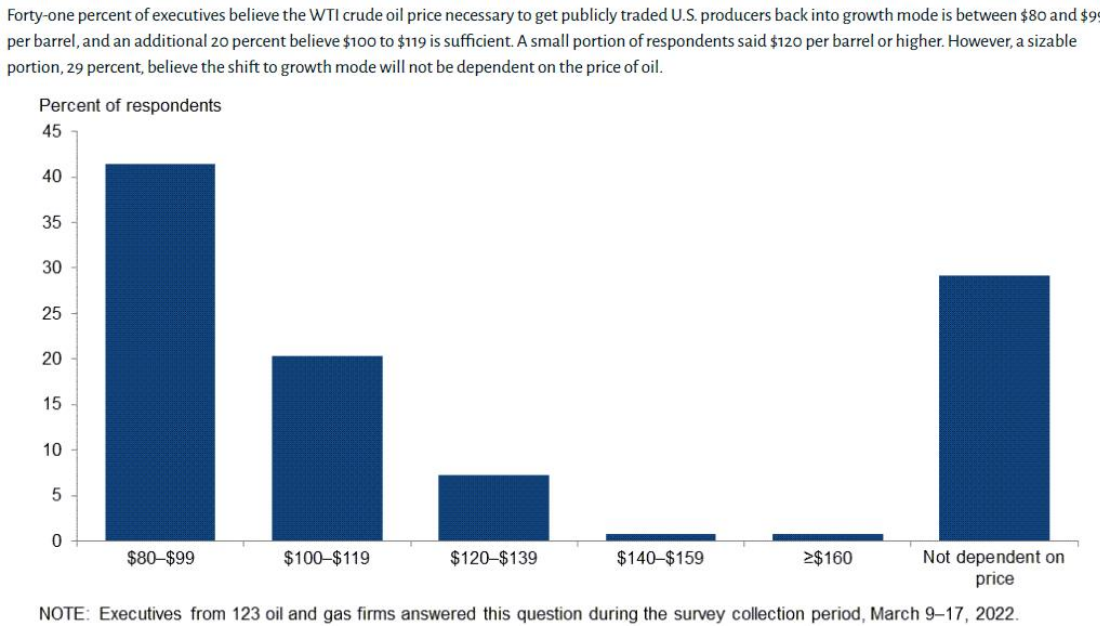
Source: Longview Economics, Macrobond

Fig 15: Iranian oil production (mbpd), shown with Longview forecast



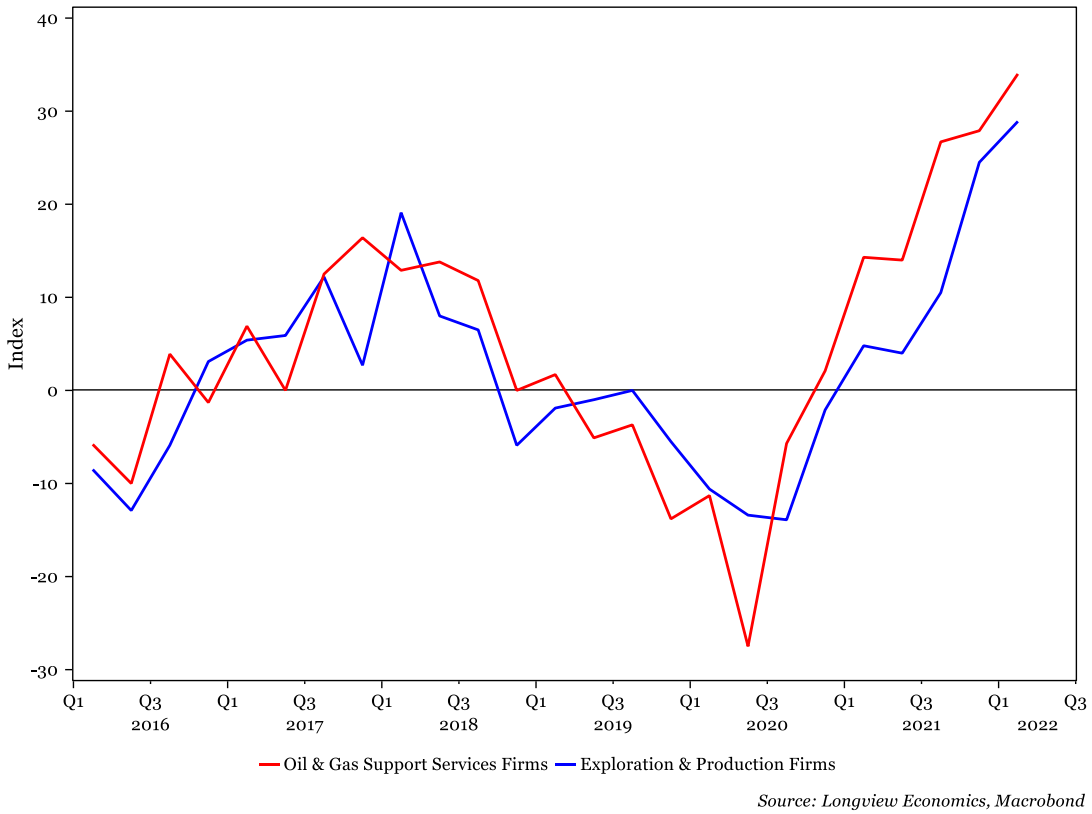
Source: Longview Economics, Macrobond

Fig 16: Dallas Fed Energy Survey: "What is the primary reason for production restraint among public oil producers despite high oil prices"



Source: Dallas Fed Q1 Energy Survey

Fig 17: Dallas Fed Energy Survey: Supplier Delivery Times for E&P firms and Support Services companies

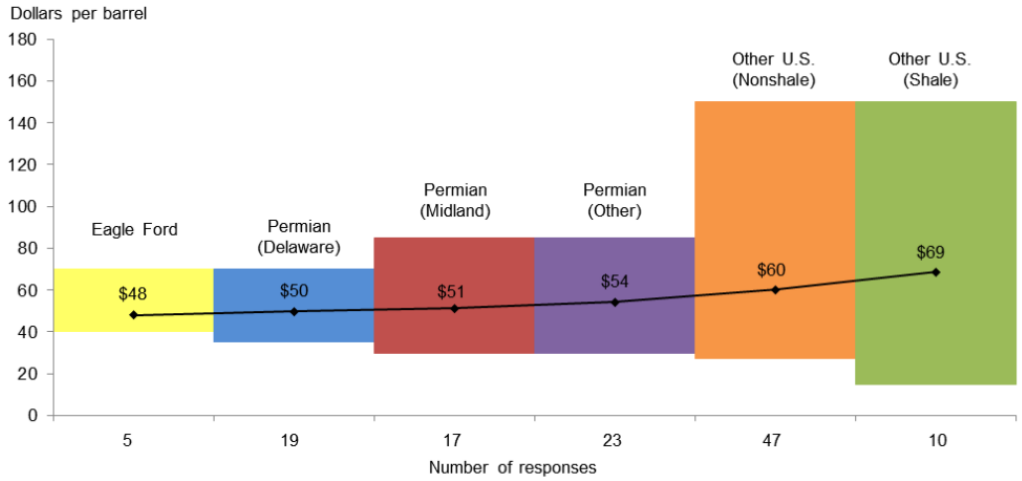


Source: Longview Economics, Macrobond

Fig 18: Dallas Fed Energy Survey: "In the top two areas in which your firm is active, what WTI oil price does your firm need to profitably drill a new well"

For the entire sample, firms need $56 per barrel on average to profitably drill, higher than the $52-per-barrel price when this question was asked last year. Across regions, average breakeven prices to profitably drill a new well range from $48 to $69 per barrel. Breakeven prices in the Permian Basin average $52 per barrel, $2 higher than last year. With the jump in oil prices, almost all firms in the survey can profitably drill a new well at current prices (March 17's WTI spot price was $103 per barrel).

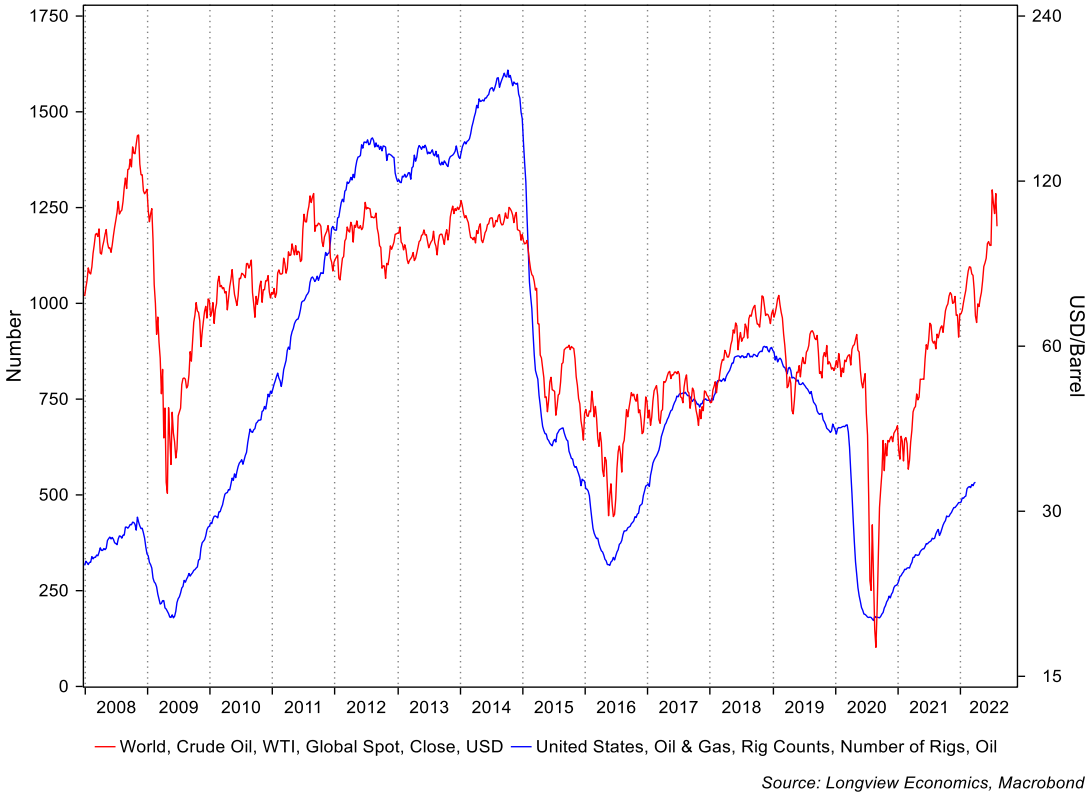
Large firms (with crude oil production of 10,000 barrels per day (b/d) or more as of fourth quarter 2021) need $49 per barrel on average to profitably drill, lower than the $59 for small firms (less than 10,000 b/d).



NOTES: Lines show the average, and bars show the range of responses. Executives from 83 exploration and production firms answered this question during the survey collection period, March 9–17, 2022.

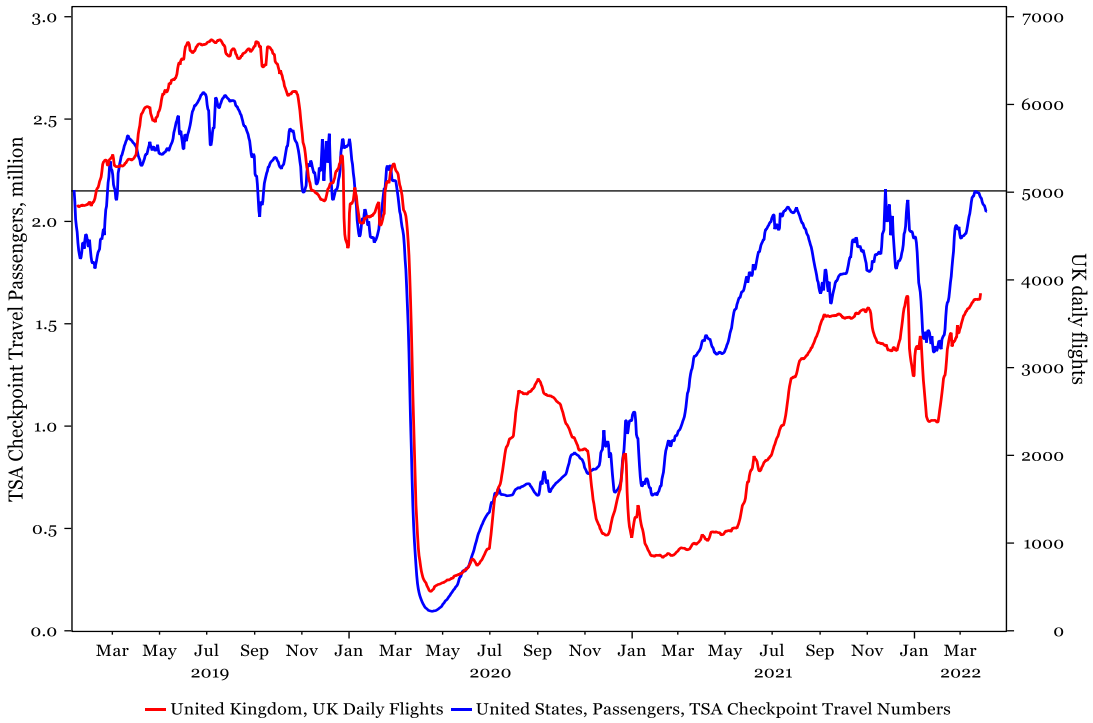
Source: Dallas Fed Q1 2022 Energy Survey

Fig 19: US oil rig count vs. WTI oil price (USD/bbl, advanced 3m)



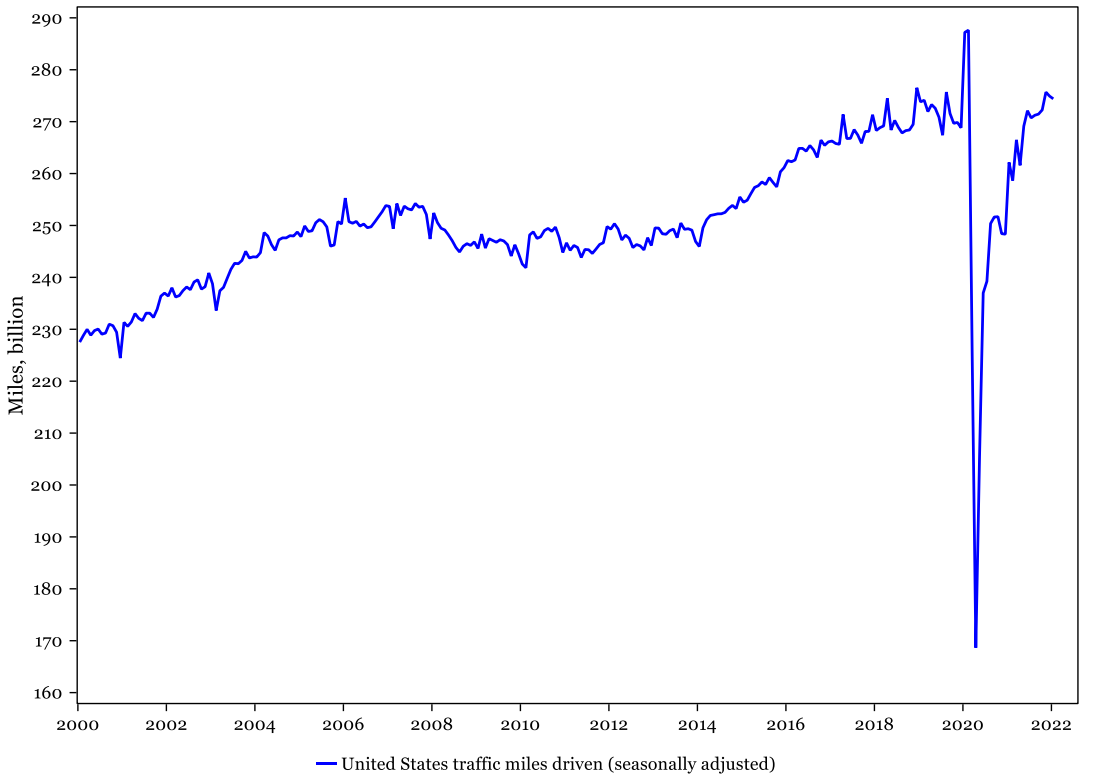
Source: Longview Economics, Macrobond

Fig 20: Daily flight passengers (US & UK)



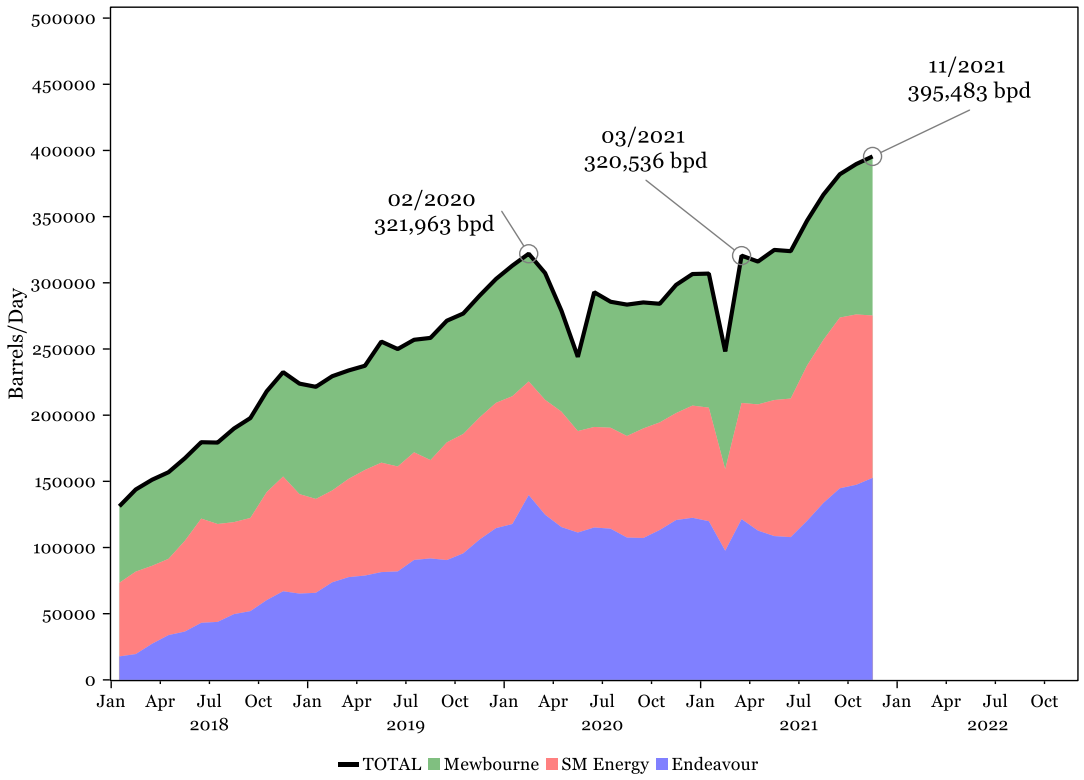
Source: Longview Economics, Macrobond

Fig 21: US miles driven (seasonally adjusted)



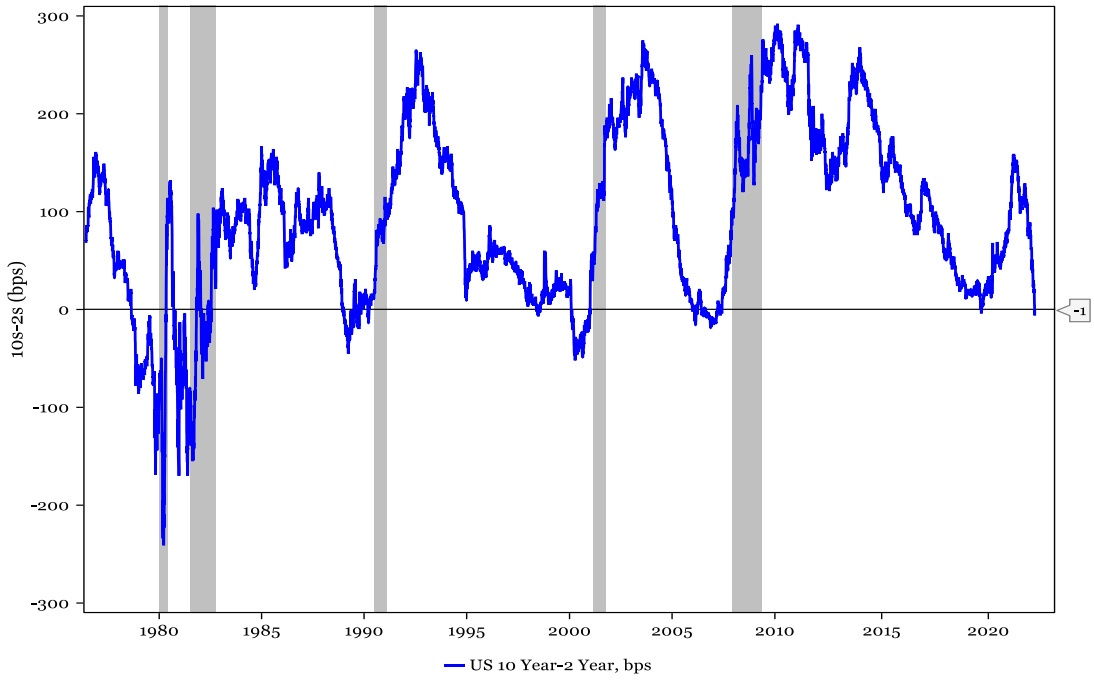
Source: Longview Economics, Macrobond

Fig 22: Oil production (mbpd): Endeavour, SM Energy, and Mewbourne



Source: Longview Economics, Macrobond

Fig 23: US 10s – 2s spread (bps)



Source: Longview Economics, Macrobond

Appendix 2: Supply & Demand Tables

Table 2: Global oil supply (mbpd), shown with Longview forecasts

OPEC	2Q 2021	3Q 2021	4Q 2021	1Q 2022	2Q 2022	3Q 2022	4Q 2022	1Q 2023	2Q 2023	3Q 2023	4Q 2023
Saudi Arabia	8.53	9.57	9.90	10.22	10.56	10.89	11.23	11.57	11.91	12.00	12.00
Iran	2.40	2.47	2.48	2.51	2.56	2.59	2.61	2.87	3.31	3.38	3.50
Iraq	3.94	4.06	4.24	4.23	4.37	4.44	4.53	4.62	4.72	4.81	4.90
UAE	2.64	2.76	2.86	2.97	3.04	3.13	3.21	3.30	3.39	3.48	3.57
Kuwait	2.35	2.44	2.53	2.61	2.69	2.77	2.81	2.86	2.90	2.94	2.97
Venezuela	0.55	0.59	0.76	0.72	0.76	0.79	0.83	0.89	0.95	1.02	1.10
Gabon	0.18	0.18	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Algeria	0.89	0.92	0.96	0.98	0.99	1.01	1.02	1.02	1.02	1.02	1.02
Angola (joined 2007)	1.12	1.11	1.12	1.16	1.05	1.02	0.99	0.97	0.94	0.92	0.90
Ecuador (joined 2007)	0.50	0.49	0.40	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48
E. Guinea (joined 2017)	0.11	0.10	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Congo (joined 2018)	0.27	0.27	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
Libya	1.15	1.16	1.12	1.10	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Nigeria	1.34	1.27	1.24	1.36	1.30	1.40	1.40	1.40	1.40	1.40	1.40
Total	**25.97**	**27.39**	**28.14**	**28.87**	**29.47**	**30.19**	**30.79**	**31.67**	**32.70**	**33.12**	**33.52**
Change	0.20	1.42	0.75	0.73	0.60	0.72	0.60	0.87	1.03	0.42	0.39

Non-OPEC	2Q 2021	3Q 2021	4Q 2021	1Q 2022	2Q 2022	3Q 2022	4Q 2022	1Q 2023	2Q 2023	3Q 2023	4Q 2023
United States	16.85	16.79	17.53	17.48	17.98	18.26	18.61	18.51	19.07	19.43	19.81
Canada	5.42	5.63	5.77	5.85	5.73	5.85	5.95	6.05	5.90	6.07	6.20
Mexico	1.96	1.95	1.96	1.98	1.99	1.97	1.97	1.97	1.97	1.97	1.97
Russia	10.80	10.89	11.24	11.00	10.30	11.05	11.45	11.55	11.64	11.71	11.74
Azerbaijan	0.69	0.71	0.71	0.70	0.69	0.69	0.69	0.70	0.70	0.71	0.71
Kazakhstan	1.84	1.70	1.99	1.87	1.98	1.84	1.84	1.86	1.86	1.88	1.88
Oman	0.96	0.98	1.01	1.05	1.07	1.07	1.07	1.07	1.06	1.06	1.06
Indonesia	0.68	0.68	0.67	0.66	0.66	0.65	0.65	0.65	0.65	0.65	0.65
UK	0.77	0.88	0.88	0.90	0.89	0.80	0.85	0.85	0.85	0.85	0.85
Norway	1.92	2.05	2.06	2.07	1.86	2.15	2.20	2.20	2.20	2.20	2.20
Australia	0.39	0.46	0.47	0.47	0.46	0.46	0.46	0.46	0.46	0.46	0.46
China	4.09	4.08	4.01	4.11	4.14	4.13	4.04	4.11	4.14	4.13	4.04
Brazil	3.04	3.10	2.93	3.10	2.97	3.04	3.08	3.33	3.30	3.27	3.24
India	0.72	0.73	0.72	0.71	0.70	0.70	0.69	0.69	0.69	0.68	0.68
Colombia	0.72	0.75	0.75	0.75	0.74	0.74	0.74	0.73	0.73	0.72	0.72
Malaysia	0.57	0.53	0.55	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
Egypt	0.58	0.56	0.57	0.57	0.57	0.57	0.56	0.56	0.56	0.55	0.55
Argentina	0.63	0.64	0.68	0.69	0.70	0.70	0.70	0.72	0.75	0.76	0.76
Qatar	1.82	1.82	1.83	1.82	1.85	1.86	1.86	1.86	1.86	1.86	1.86
Yemen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Syria	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chile	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Sub Total	**54.46**	**54.94**	**56.34**	**56.36**	**55.86**	**57.11**	**57.99**	**58.45**	**58.97**	**59.54**	**59.96**
Others	3.33	3.32	3.28	3.25	3.29	3.41	3.46	3.44	3.44	3.44	3.44
Total	**57.79**	**58.26**	**59.62**	**59.61**	**59.15**	**60.52**	**61.45**	**61.89**	**62.41**	**62.98**	**63.40**
Change	0.57	0.47	1.36	-0.01	-0.46	1.37	0.93	0.44	0.51	0.58	0.41

Other liquids supply	2Q 2021	3Q 2021	4Q 2021	1Q 2022	2Q 2022	3Q 2022	4Q 2022	1Q 2023	2Q 2023	3Q 2023	4Q 2023
OPEC NGLs	5.18	5.24	5.24	5.33	5.43	5.47	5.41	5.45	5.47	5.53	5.55
Processing Gains	2.22	2.34	2.32	2.29	2.29	2.3	2.31	2.33	2.33	2.33	2.33
Global Biofuels	2.93	3.19	2.67	2.32	3.06	3.32	2.84	2.42	3.16	3.42	2.94

World supply	94.09	96.42	97.99	98.42	99.40	101.80	102.81	103.75	106.06	107.38	107.73
Change	1.65	2.33	1.57	0.43	0.98	2.41	1.00	0.95	2.31	1.32	0.35

Source: Longview Economics, IEA

Table 3: Global oil demand (mbpd), shown with Longview forecasts

	2Q 2021	3Q 2021	4Q 2021	1Q 2022	2Q 2022	3Q 2022	4Q 2022	1Q 2023	2Q 2023	3Q 2023	4Q 2023
US	20.03	20.21	20.41	20.80	21.20	21.40	21.50	21.40	21.70	21.80	21.70
China	15.68	15.68	15.74	15.47	16.09	16.34	16.40	16.54	16.84	17.14	17.35
Core Europe	7.08	7.67	7.82	7.55	7.47	7.65	7.67	8.02	7.99	8.09	7.92
Brazil	2.98	3.19	3.12	2.90	2.95	3.05	3.06	3.02	3.07	3.17	3.18
Russia	3.59	3.79	3.76	3.47	3.10	3.41	3.40	3.82	3.41	3.75	3.74
India	4.45	4.48	4.93	5.07	5.07	4.74	5.17	5.32	5.15	5.30	5.37
Japan	3.08	3.18	3.67	3.93	3.25	3.33	3.66	3.86	3.20	3.30	3.60
Other	37.44	38.13	39.38	41.29	40.88	40.58	41.62	41.30	43.20	41.37	43.08
World Total	**96.33**	**98.83**	**100.48**	**100.01**	**100.50**	**102.48**	**103.27**	**104.55**	**103.91**	**105.94**	**105.92**
Change	2.00	2.50	1.65	-0.47	0.49	1.98	0.79	1.28	-0.64	2.02	-0.02

Source: Longview Economics, IEA

Table 4: Global oil supply & demand (mbpd), shown with Longview forecasts

Supply	2Q 2021	3Q 2021	4Q 2021	1Q 2022	2Q 2022	3Q 2022	4Q 2022	1Q 2023	2Q 2023	3Q 2023	4Q 2023
OPEC	31.15	32.63	33.38	34.20	34.90	35.66	36.20	37.11	38.17	38.65	39.06
Change	0.20	1.48	0.75	0.82	0.70	0.76	0.54	0.91	1.05	0.48	0.41
Non-OPEC	57.79	58.26	59.62	59.61	59.15	60.52	61.45	61.89	62.41	62.98	63.40
Change	0.57	0.47	1.36	-0.01	-0.46	1.37	0.93	0.44	0.51	0.58	0.41
Other supply sources	5.15	5.53	4.99	4.61	5.35	5.62	5.15	4.75	5.49	5.75	5.27
Change	0.88	0.38	-0.54	-0.38	0.74	0.27	-0.47	-0.40	0.74	0.26	-0.48
Total	**94.09**	**96.42**	**97.99**	**98.42**	**99.40**	**101.80**	**102.81**	**103.75**	**106.06**	**107.38**	**107.73**
Change	1.65	2.33	1.57	0.43	0.98	2.41	1.00	0.95	2.31	1.32	0.35

Demand	2Q 2021	3Q 2021	4Q 2021	1Q 2022	2Q 2022	3Q 2022	4Q 2022	1Q 2023	2Q 2023	3Q 2023	4Q 2023
BRICs	26.91	27.21	27.54	28.03	28.69	28.46	29.36	29.64	0.00	0.00	0.00
Change	-0.64	0.30	0.33	0.49	0.66	-0.23	0.90	0.28	-29.64	0.00	0.00
US	18.45	20.03	20.21	20.41	20.80	21.20	21.40	21.50	21.40	21.70	21.80
Japan	3.73	3.08	3.18	3.67	3.93	3.25	3.33	3.66	3.86	3.20	3.30
Core Europe*	6.68	7.08	7.67	7.82	7.55	7.47	7.65	7.67	8.02	7.99	8.09
Other	40.56	41.43	41.88	40.08	39.53	42.10	41.53	42.08	70.63	73.05	72.73
Total	**96.33**	**98.83**	**100.48**	**100.01**	**100.50**	**102.48**	**103.27**	**104.55**	**103.91**	**105.94**	**105.92**
Change	2.00	2.50	1.65	-0.47	0.49	1.98	0.79	1.28	-0.64	2.02	-0.02
Balance	**-2.24**	**-2.41**	**-2.49**	**-1.59**	**-1.10**	**-0.68**	**-0.46**	**-0.80**	**2.15**	**1.45**	**1.81**

Source: Longview Economics, IEA

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