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Oil's extended reign? Adapting to a new era in oil markets

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Allison Nathan: Is the world really moving away from oil? We've seen widespread efforts toward electrification and renewable energy, but oil continues to drive the global economy. And it may retain that role for longer than most people expect. I'm Allison Nathan, and this is Goldman Sachs Exchanges.

Joining me to discuss supply and demand drivers shaping the oil market and what they mean for investors and consumers are my colleagues in Goldman Sachs Research, Nikhil Bhandari and Daan Struyven. Nikhil is the co-head of APAC natural resources and clean energy, and Daan is the head of oil research. Nikhil is joining us remotely from Hong Kong, and Daan is here in the New York studio with me.

It's good to have you back in the studio, Daan. And Nikhil,

good to have you on the program I think for the first time, correct?

Nikhil Bhandari: That's correct. Thank you for having me.

Allison Nathan: So Daan, let's speak with you first. We recently had a conversation with you where we talked about the fact that oil prices weren't responding to the tension in the Middle East and the geopolitical landscape as we would normally expect them to, but we've been on a somewhat wild ride since then. So talk us through the drivers of the recent oil price volatility and the implications for your forecast.

Daan Struyven: Great. And it's great to be on, Allison. So we started the year with brent crude oil prices basically around $75 per barrel. Then we rallied just above $90 per barrel as the market gained confidence in the outlook for global GDP and global oil demand and as the market started to price in some probability of geopolitical supply disruptions.

But then from mid April onwards until the start of this month, we sold off and brent moved back to the $70s,

following unexpected inventory builds following an OPEC meeting we came back to and actually a drop in speculative positioning to the lowest level since 2016. But taking a step back, we have been swinging in our $75 to $90 OPEC range for brent crude oil prices.

Allison Nathan: Just to clarify, when you say "inventory build," you mean basically we have just seen the abundance of oil continuing despite demand growth, despite some concerns about supply disruptions, and that's what really drives oil prices.

Daan Struyven: That's right. Taking a step back, over the last two years, the market has been roughly balanced because OPEC has been aligning OPEC supply with how much demand has been growing and how much non-OPEC supply has been growing. But in the spring, indeed, we did see rises in oil inventories that were somewhat larger than what we, the market, and also seasonal patterns had expected.

Now that we're moving into the summer season, which is a travel season and also the season where oil is used to generate power to cool down houses and offices in places

like the Middle East, we're turning back into a deficit. But the big picture in the market is pretty balanced, and that's precisely what OPEC is intending to do.

Allison Nathan: And so despite this recent volatility in prices, as you just said, prices have remained relatively rangebound. What's keeping it in this tight sort of range between $70, $75 let's say, and $90?

Daan Struyven: Yeah, so I do think that's the main reason why $90 is sort of a ceiling in most economic and geopolitical scenarios is that there is a lot of spare capacity. Basically oil production that's not actually being turned into production, roughly 6% of global crude production capacity is currently not used. That is roughly in the top 20% of historical looseness, if you want. A big contrast with refining where we're in the top 20% of historical tightness.

And so that means that, if the market were to tighten -- for instance, geopolitical supply disruptions -- in most scenarios, countries such as Saudi Arabia and the UAE can step in and fill in the shortfall and keep the market balanced and keep prices under $90.

Allison Nathan: So we might get back to that, but I want to dig in a bit on the demand side because you had mentioned global GDP growth supporting demand. But obviously there's longer-term structural drivers of demand, and, Nikhil, you just recently released some research doing a deep dive into long-term demand. And you predicted that the peak demand for oil is still about a decade away, which is actually a bit more bullish, in a sense. Many forecasters seem to think that peak in oil demand, because of some of the structural trends, is actually going to happen sooner. Talk us through how you came to your conclusion.

Nikhil Bhandari: Thank you, Allison. So we have indeed raised 2030 oil demand forecast to 108.5 million barrels per day from 106 before. And we expect peak in oil demand to occur by 2034, as you said, and a long plateau there after rather than a decline. The driver for the upward revision is we've enhancements to our proprietary road model to more accurately assess the non-linearity of the oil demand growth to GDP growth.

So let me elaborate that more. It is commonly assumed that every dollar GDP increase leads to a fixed amount of

oil demand increase. However, when we look at it from a long-term perspective and analyze the oil demand growth pattern in the developed market over the last few decades, there is an S curve relationship between income growth and oil demand growth. So when the income reaches a certain level, oil demand growth accelerates faster than GDP growth.

For example, when a country is below $2,000 to $3,000 GDP per capita, we are consuming more staples or basic metals. We go higher up, get wealthier, we start consuming more appliances and white goods. These are made of petrochemicals, which are predominantly made of oil. We are richer, people consume more cars and more flying demand thereon. So this is why the relationship looks like an S curve between oil demand growth and income growth. We believe it is increasingly becoming important to capture this S curve relationship in the oil demand outlook because emerging markets like India are entering this acceleration phase over the next 10 years.

Allison Nathan: But even if we've seen that S curve pattern historically and, as you said, there are some big drivers of growth, again, we have these structural drivers in terms of

more use of renewables, there's so much focus on electric vehicles these days. Are the historical models really useful in this context where we have potentially a structural shift? How are the models accounting for that?

Nikhil Bhandari: Sure. So in a normal GDP growth environment and assuming there is no substitution away from oil, oil demand can grow between one and a half to two million barrels per day per year. However, as you mentioned, there's rising electrification, especially across passenger fleet and also the commercial fleet. And as such, our models then suggest, after accounting for both income growth and the oil demand growth relationship, but against that we weigh the fleet increase for electrification, we still believe oil demand growth can be a million barrels per day on average for the remainder of this decade.

Every one million ICE, internal combustion engine, car replacement with one million EV cars is about 20,000 barrels per day. So when we reflect that impact as well, we do still think oil demand can grow at about a million barrels per day on average through this decade. Now, this is already based on our quite bullish EV penetration forecast.

Allison Nathan: So your models are attempting to account for the shift towards renewables and increasing penetration of EV vehicles. What evidence are we seeing of those shifts taking place today?

Nikhil Bhandari: Sure. So globally, we saw nearly 10 million EV cars were sold last year. In our base case, this number will nearly triple to over 30 billion EV car sales in 2030 in our base case forecast. However, there has been a stagnation in sales this year. We had a very limited growth in EV sales in US and Europe year to date. Also, policy risks are top of mind with the election coming in the larger global economies like US and Europe. And as such, a possibility of a more slower EV penetration adoption scenario is also top of mind for investors.

For instance, if in our model we run a 10% lower EV penetration in 2030, which is still calling for more than doubling of the EV sale run rate from last year by 2030 but not tripling like in our base case, it does shift the peak in oil demand beyond 2040. And oil demand in that scenario could keep continuing to grow towards 113, or 113 million barrels per day, by 2040.

Allison Nathan: China is expected to be a big driver of that EV sales penetration. Are we seeing China oil demand broadly, which has been one of the largest, if not the largest consumers of oil, decline at this point?

Nikhil Bhandari: Yes, you're right. So we're still quite bullish in China's EV penetration growth. We forecast the internal combustion engine car sales penetration will drop to around 10% in 2030 and the rest of the 90% sales will be predominantly electric vehicle, plug-in EV vehicles, and also hybrids. Even then, we estimate China to contribute positively to global oil demand growth in the medium term. And we're seeing in our model the peak in China's oil demand only by late 2020s.

This is driven, firstly, as I mentioned, about the income growth and the oil demand growth relationship. Also, we are expecting continued oil demand growth in China from the petrochemical sector and jet fuels. Especially for jet fuel, we expect China will contribute over 50% of the global demand increase for jet fuel during our forecast period to 2040. This is because, as the country advances to a higher income economy, its GDP per capita will progress towards

the demand acceleration phase of the jet fuel, the same S-shaped curve that I talked about earlier.

Allison Nathan: Interesting. And when we take a step back and think about global growth, clearly India is in focus. To what extent do you expect demand for oil from India to increase and potentially offset some of the eventual declines from China even if you think China will hold up reasonably well over the next several years?

Nikhil Bhandari: We believe India will be the fastest-growing oil demand growth region among the large economies globally, both this decade and the next decade. Our auto team expects a fast electrification of India's motorbikes. And motorbikes account for more than 50% of India's gasoline consumption. And our auto team also expects a rapid fast electrification of cars over the next decade.

However, the robust expansion of India's passenger fleet could offset the impact of electrification leading to a continued growth in India's transportation fuel demand in our forecast period. Also, India's penetration of appliances and white goods is also set to expand as the per capita

income rises beyond $2,500 GDP per capita.

Allison Nathan: Daan, we've heard Nikhil's view of demand over the medium to longer term. Do you agree with that view?

Daan Struyven: Yes. And actually on sort of the dynamics where an acceleration in Indian growth is sort of offsetting for a loss of momentum in China, we're already seeing that today. If I look at our forecast for oil demand growth this year, we have the same number for China and India, roughly 0.3 million barrels per day of growth, which is the first year in history where China oil demand is not growing more than in India, except 2022, when China went through very severe lockdowns.

More broadly, we also did similar work to Nikhil's team focusing on road transportation there and specifically, which is roughly 50% of total oil demand, and we also estimated a peak roughly in 2032 with really quite fascinating offsets between, on the one hand, a 60% increase in global GDP and in the number of cars in the world by 2040 but an ongoing decline in how much oil you need per car. And again, very interesting offset in regional

dynamics with declines in developed markets and increases in emerging markets, excluding China.

Allison Nathan: So you would agree that we are still a ways away from peak oil demand?

Daan Struyven: I think it's a very reasonable base case, but I also want to emphasize the very large uncertainty. If you, for instance, look at forecasts from OPEC or the US Department of Energy, you don't see a peak until 2040 or later. But then if you look at the projections for global oil demand from the International Energy Agency, they expect road oil demand to peak next year.

Allison Nathan: And so of course demand is only one side of the equation. You've already talked about some of the near-term supply dynamics, Daan, but if you think about a bit longer term on the crude oil production side, will there be sufficient crude oil production even if we have excess capacity today to meet that increase in demand over the next decade that you and Nikhil both expect?

Daan Struyven: So I think it's a great question because investment in the sector has been quite low. And if you, for

instance, look at the oil reserve life, basically how many years of production have we left in our reserves, that number has come down by 25 years over the last decade. That said, I think that the supply picture will remain quite comfortable through at least 2026. The starting point is a starting point of quite high spare capacity.

Allison Nathan: That's two years from now only.

Daan Struyven: Yeah.

Allison Nathan: Okay, to be clear.

Daan Struyven: That's fair. But the further out you go, the less visibility we have. But quite comfortable that the market will be very well supplied over the next few years. Looking further out, especially from the latter part of the decade, there is more uncertainty. Because investment is low, the oil reserve life has dropped and we have seen this big shift in investment away from long-cycle projects that deliver oil for decades to short-cycle projects such as US shale or investments in so-called brownfield developments that help to limit decline rates over the next few years but don't help you to support production capacity further down

the road.

And I think taking a step back, the reason why we have seen this big shift in investment away from long-cycle to short-cycle projects is precisely this very elevated uncertainty about oil demand that Nikhil has identified.

Allison Nathan: But the other part of the supply equation is it's just not about crude oil production. It's also about refinery capacity because we don't consume crude oil, we consume, as we've been discussing, gasoline and jet fuel and these other refined petroleum products. And you mentioned earlier that refinery capacity is actually tight. So talk to us about what's happening in that industry and the implications for consumer prices of oil products.

Daan Struyven: Yeah, so the refining system, in sharp contrast with crude production, we think is structurally tight and structurally vulnerable. We have seen a very large number of closures, permanent closures, of refineries. We have seen a very sharp dropoff in investment because refining is long cycle. And one striking statistic is that the median age of a refinery in developed markets is 53 years

old. And finally, turning back to geopolitics, we have actually seen disruptions to refining output, in Russia for instance, as a result of Ukrainian attacks. So in our view, in sharp contrast with our range-bound view for crude oil prices for the next couple of years, we think that refined oil product margins -- basically the difference between what you pay at the pump or what you pay for diesel -- on the hand and crude prices on the other hand will be structurally higher and structurally more volatile than crude prices themselves.

Nikhil Bhandari: And just to add some numbers to what Daan mentioned about the refining closures and upcycle, we have closed nearly 4% of global refining capacity since the pandemic started. However, oil demand has returned 1% to 2% above pre-COVID levels last year, so we don't have any spare capacity left in the system. And we are not solving for this spare capacity either through 2027 because incremental refining capacity additions is at or below the incremental demand growth in the medium term. So we believe the refining system will indeed remain quite stretched.

And just to add, within refining, we believe diesel and jet is

where we expect the deficit market for the next three years. Diesel and jet, we believe the demand will continue to grow until its peak levels by mid-2030s. However, the newer capacities that are getting added in the refining system are a lot more gasoline heavy. So there is a mismatch in the supply demand for diesel and jet, while for gasoline we expect a relatively more balanced market.

Allison Nathan: And just to be clear, there is very little incentive to build new refinery capacity globally now, I mean, especially in the developed market economies, given the environmental issues, correct?

Nikhil Bhandari: I totally agree. I think refining is a relatively more stranded asset in the age of climate change. If I have a portfolio of oil, gas, refining, chemicals, and gas station, as a big oil company, petrochemical is a decarbonization story for the big oils. It's the way to compose the carbon, keep it in the gas station. If you're not selling oil, you'll sell hydrogen or battery charging in the future. If it's gas, it's still an important fuel before the world is ultimately renewables.

Between oil and refining, oil has geological decline rates in

production every year, so refining is more stranded in a slowing, longer term demand growth against a tighter feedstock dynamic of crude. So again, it's really challenging for energy companies to build new refineries.

Allison Nathan: Interesting. When we think about our longer-term expectations for demand, peak demand not happening for the next decade, and the supply situation becoming more uncertain and certainly the refinery situation looking like it's not going to turn around, what are the implications for oil prices, broadly speaking, down the road?

Daan Struyven: Yeah, so our assumption for long-run oil prices is around $80 per barrel, but I want to emphasize that the uncertainty dramatically increases with the horizon. And if we're going to continue to see relatively low investment and if US shale matures. US shale has basically been, together with OPEC, the mechanism to balance the market because US shale can adjust its production quickly to changes in prices. If those trends continue, you could see significantly more oil price volatility down the road, especially if you look at the prices from refined oil products.

But for the next two years, non-OPEC supply will continue to perform and OPEC's spare capacity will remain abundant. But further down the road, I think that we see more significant risks of volatility.

Allison Nathan: If we think about the next couple of years, obviously there's a lot of policy uncertainty with the US election coming up. A lot of policies that could have implications for things like tariffs. How are you thinking about the implications of that for the energy complex?

Daan Struyven: Yeah, starting with oil, I do think that the potential effects from the potential reelection of former President Trump on the supply side would be neutral to slightly bullish for oil prices. We don't think that you would see a significant increase in US production because we don't think US production has been constrained significantly by regulatory constraints. But it's possible that we could see a retightening in sanctions on supply from Iran, which is what happened under the prior Trump presidency. And if that were to happen -- and Iran has been the second-largest source of supply growth globally after the US of the last few years -- and if, for instance,

Saudi Arabia and the UAE don't step in to fill in the shortfall, you could see a tightening in oil markets and a rise in prices.

On the demand side, I do think that a potential cut of taxes and fiscal easing could support demand. And you could also see a pickup in demand for gasoline if you see a pullback of tax credits for EVs.

One last point is more on the macro side. If we were to see a rise in interest rates and a stronger dollar, which is generally what our colleagues expect in the case of a Republican sweep, that could actually weigh on oil prices through macro channels.

Allison Nathan: So what is the net of that then? So if we do have a Republican sweep, the risks are skewed to the upside or to the downside for oil prices?

Daan Struyven: I think modestly to the upside because of the Iran channel, which is quantitatively the biggest.

Allison Nathan: Okay, understood. But if we think about commodities today -- energy and the broader

commodity complex -- a lot of people are looking at them as a hedge for this type of political risk and broadly geopolitical risk. Are they an effective hedge at this point?

Daan Struyven: So traditionally, oil and energy, more broadly, is a very effective hedge against high inflation, which is the situation which tends to weigh on returns of bonds and equities because oil typically does well when you have positive demand shocks or negative supply shocks, which both boost inflation but actually boost commodity prices.

I think in this current situation, in contrast to history, I actually see the greatest hedging value against policy risks for higher inflation in gold. Because if you think about the key risks to the upside for inflation, we're thinking about tariffs, we're thinking about the risk that there would be pressure on the Fed to keep policy loose, and last but not least, potential geopolitical escalations. And in all those situations, typically gold tends to perform quite well. So I think if you want to hedge against inflation risk from the upcoming US elections with commodities, I would say gold is probably your best pick and then probably paired with energy and oil in the second spot.

Allison Nathan: Because if I remember from my commodity days, energy historically has been a great inflation hedge because it's often the source of the inflation.

Daan Struyven: Exactly.

Allison Nathan: And if you have an inflationary scenario, given the political and geopolitical backdrop, but you're not in a shortage of oil and oil isn't leading the way, then its effectiveness to hedge is lower.

Daan Struyven: That's right, yes. I think one key reason why oil is a good hedge is because, if oil itself causes inflation, it's a perfect hedge. But if you see rises in inflation driven by stronger demand or by perhaps losses in the credibility of central banks to fight inflation, those are also situations where commodities do well but more indirectly.

Allison Nathan: Okay, great. Daan, Nikhil, thanks very much for joining me.

Daan Struyven: Thank you.

Nikhil Bhandari: Thank you.

Allison Nathan: This episode of Goldman Sachs Exchanges was recorded on Thursday, June 20th, 2024. I'm your host, Allison Nathan. If you enjoyed this show, we hope you subscribe on your platform of choice and tune in next week for another episode. And if you want more insights from Goldman Sachs, make sure to visit GS.com and sign up for Briefings, a weekly newsletter from Goldman Sachs about trends shaping markets, industries, and the global economy. Thank you for listening.

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