Global Energy Weekly

Energy is hot again

15 August 2023

Commodities
Global

Global Commodity Research
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Peak rates mark a macro shift back into commodities

Peak interest rates have marked a macro shift back into commodities, with CTAs and multi-asset allocators turning long the asset class in recent weeks. Meanwhile, micro energy sector fundamentals have improved too, with supply dynamics triggering a rally in energy prices from crude oil to refined products (see Oil wants to break free) to global natural gas to thermal coal (see Thermal coal looks for a floor). Within the oil complex, crude has tightened on Russian exports coming down and Saudi Arabia continuing to deliver deep crude oil production curtailments. Meanwhile, petroleum fuel markets have moved higher too due to lower-than-expected refinery runs and low inventories. In global gas, LNG imports into Europe had already come down materially on the back of the earlier collapse in TTF prices. But in the past two weeks, fears of supply disruptions in Australia have sparked global gas prices higher. So, supply reductions (real, announced, or potential) and peak rates have pushed energy prices higher in the past three months.

Supply disruptions have also pushed up energy prices

Yet cyclical energy demand trends remain very soft, particularly for European gas and anything industrial globally, even if a continued recovery in global services demand and air travel, especially in Asia, supported transport fuels. While last week's deflationary print in China may nudge Beijing to stimulate its ailing economy, there is no guarantee that President Xi will pull the trigger or that any package will be large enough to create a new virtuous commodity demand cycle. Net, we still see 1.9mn b/d of global oil demand growth in 2023 and 1.06mn b/d in 2024, led mostly by China. With inventories set to fall on 5.3mn b/d of announced OPEC+ supply cuts since 3Q22, prompt oil prices started to rally and 1m-3m spreads in Brent and WTI crude moved firmly into backwardation. Yet we believe demand conditions need to improve materially for a sustained move above $100/bbl in Brent or above $20/MMBtu in JKM/TTF. Thus, owning deferred oil spreads offers a better risk-reward than an outright long oil position at this point, in our view.

Yet a sustained rally from here needs better demand

While better global energy demand trends in 2024 could further extend the upward momentum in energy prices, we see limits. Our economics team recently upgraded their global GDP forecast and now expects growth of 3% in 2023 and 2.8% in 2024. Yet, oil betas to GDP are not as strong as they used to be and OPEC+ now has more spare capacity due to the deep cuts it just implemented. On this point, to offset a partial unwind of the Saudi "lollipop cut" next year would likely require global GDP growth of 3.5% to 4% in 2024, 0.7% to 1.2% higher than BofA expectations. Also, recession risks have faded but not disappeared and high nominal and real interest rates globally will increase refinancing risks in the next year. Thus, we opt to maintain our Brent and WTI forecasts of $90/bbl and $85/bbl for next year. With oil supply and demand likely to remain roughly balanced in 2024, a sustained run up in Brent oil prices above $100/bbl would thus depend on deeper oil supply cuts by OPEC+ (unlikely), unplanned supply disruptions (uncertain), or much better demand conditions (unexpected).

Glossary
Bbl – barrel
Boe – barrel oil equivalent
CTA – Commodity Trading Advisor
JKM – Japan Korea Marker
JKM – Japan Korea Marker
LNG – liquefied natural gas
MMBtu – Million British thermal units
MMT – million metric tonnes
MWh – megawatt hour
NBP – UK National Balancing Point
NWE – Northwest Europe
OPEC – Organization of Petroleum Exporting Countries
TTF – Dutch Title Transfer Facility

Refer to important disclosures on page 16 to 17.
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Timestamp: 15 August 2023 06:56AM EDT

Exhibit 1: BofA Commodity Research Themes and Outlook
Key takeaways

	View	Recent reports
Macro outlook	■ Our economists see world GDP rising 3% in 2023 and expanding by 2.8% in 2024.	
WTI and Brent crude oil	■ We project Brent and WTI to average $80/bbl and $75/bbl, respectively, in 2023. ■ The global oil balance should stay tight in 2023, supported by additional OPEC+ cuts starting in May, slower non-OPEC growth, and rebounding Asia demand, ■ We forecast global demand growth to slow to 1.9mn b/d YoY in 2023 and 1.06mn b/d in 2024. ■ Non-OPEC supply should grow roughly 1.95mn b/d YoY in 2023 and 1.2mn b/d in 2024. ■ We project total US crude and NGL supply to rise 1.24mn b/d in 2023 and 520k b/d in 2024. ■ OPEC crude oil supplies are set to fall 480k b/d in 2023 and rise 50k b/d in 2024 as OPEC+ actively manages balances.	• Money breaks oil's back 08 May 2023 • OPEC+'s whatever it takes moment 05 April 2023 • Global Energy Paper: Medium-term oil outlook 26 February 2023 • $80 is the new $60 for oil 16 September 2022 • Oil demand has a supply problem 27 May 2022
Atlantic Basin oil products	■ Refined product markets face risks from OPEC+ cuts, a looming recession, and rising global refining capacity. ■ We forecast RBOB-Brent to average $20/bbl in 2023, and we see ULSD-Brent cracks averaging $26/bbl over the same period. ■ OPEC+ cuts, rising complex refining capacity, lower gasoline and diesel cracks create upside for 3.5% fuel oil cracks, which we see averaging -$15/bbl this year.	• Oil takes a vacation 21 April 2023 • Gasoline still has fuel in the tank 06 March 2023 • Heat poised to cool down 10 January 2023
US natural gas	■ US gas supply and demand growth should hit 2.4Bcf/d and 0.2Bcf/d YoY in 2023, pushing stocks above +3.9Tcf by October. ■ We forecast $2.70/mmbtu US gas on average in 2023 and see a recovery to $4/mmbtu in 2024.	• US nat gas rollercoaster nears the bottom 17 February 2023
LNG	■ LNG supply growth is manageable from historical view at 13MMT in 23, 4MMT in 24, leaving demand to dictate future price path ■ Several factors may prevent a 2020 redux: warmer summer, revival of Asian spot demand, fuel switching, poor hydro/nuclear gen ■ TTF to grind lower in 2Q/3Q unless demand shifts, but beyond summer storage worries, we see a tightening LNG balance this winter and into 2024	• LNG is now a buyer's market 17 April 2023
Thermal coal	■ Thermal coal prices surged to record highs as Russia, the world's 3rd largest coal exporter, invaded Ukraine. ■ We expect Newcastle coal to average $184/t in 2023 and $160/t in 2024.	• King coal loses its crown 31 March 2023

Source: BofA Global Research estimates

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Exhibit 2: BofA Commodity Price Forecasts
(period averages)

	units	1Q23F	2Q23F	3Q23F	4Q23F	2023F	2024F
WTI Crude Oil	($/bbl)	76.00	72.00	75.00	77.00	**75.00**	**85.00**
Brent Crude Oil	($/bbl)	82.00	76.00	80.00	82.00	**80.00**	**90.00**
US NY Harbor ULSD (HO) Cracks to Brent Crude Oil	($/bbl)	40.62	24.00	20.00	18.00	**25.66**	**18.00**
US RBOB Cracks to Brent Crude Oil	($/bbl)	23.13	28.00	20.00	10.00	**20.28**	**12.00**
NWE Low Sulphur Gasoil Cracks to Brent Crude Oil	($/bbl)	31.30	16.00	12.00	10.00	**17.34**	**10.00**
NWE Eurobob Cracks to Brent Crude Oil	($/bbl)	15.00	18.00	12.00	2.00	**11.75**	**2.25**
NWE 1% Residual Cracks to Brent Crude Oil	($/bbl)	-13.40	-10.00	-7.00	-6.00	**-9.10**	**-5.00**
NWE 0.5% Residual Cracks to Brent Crude Oil	($/bbl)	2.50	0.00	2.00	2.00	**1.62**	**2.00**
NWE 3.5% Residual Cracks to Brent Crude Oil	($/bbl)	-23.20	-13.00	-12.00	-11.00	**-14.79**	**-10.00**
US Natural Gas	($/MMBtu)	2.65	2.25	2.75	3.25	**2.73**	**4.00**
Thermal coal, Newcastle FOB	($/t)	253	160	159	164	**184**	**160**
Aluminium	$/t	2,401	2,260	2,250	2,500	**2,353**	**2,875**
Copper	$/t	8,941	8,461	8,250	9,500	**8,788**	**9,750**
Lead	$/t	2,131	2,118	2,050	2,050	**2,087**	**2,000**
Nickel	$/t	25,973	22,277	20,000	20,000	**22,063**	**21,250**
Zinc	$/t	3,122	2,539	2,250	2,500	**2,603**	**2,375**
Gold	$/oz	1892	1977	1925	1900	**1923**	**1963**
Silver	$/oz	23	24	23	23	**23**	**23**
Platinum	$/oz	995	1,027	1,000	1,250	**1,068**	**1,100**
Palladium	$/oz	1,568	1,445	1,300	1,250	**1,391**	**1,100**

Source: BofA Global Research estimates

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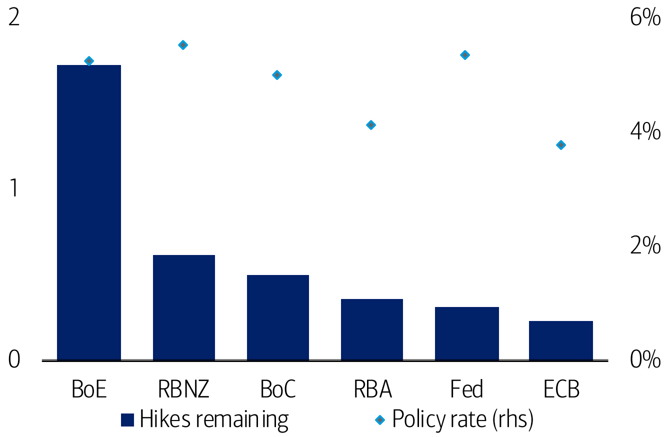
Energy is hot again

Peak rates mark a macro shift back into commodities...

Fixed income markets around the world are increasingly pointing to the end of the interest rate hiking cycle (Exhibit 3), with only the Bank of England deemed to still have more than one hike potentially in the pipeline. In broad terms, interest rate markets are pricing in that most major G-10 central banks have less than one hike left before the most aggressive monetary tightening cycle in decades comes to an end. In turn, peak rate expectations and an increased chance of a soft landing have triggered a rotation into oil (Exhibit 4), with speculative positions in trend following funds back to 1H22 levels.

Exhibit 3: Monetary policy rates and end of year swaps pricing
Fixed income markets around the world are increasingly pointing to the end of the interest rate hiking cycle



Source: BofA Global Research, Bloomberg

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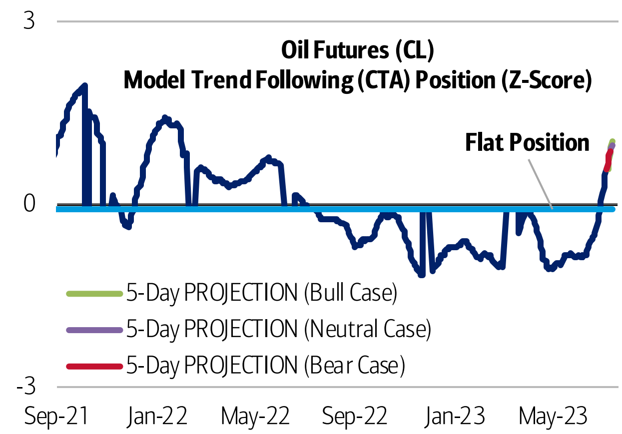
Exhibit 4: BofA Model Trend Following (CTA) Oil Position
Peak rate expectations and an increased chance of a soft landing have in turn triggered a rotation into oil



Source: BofA Global Research. Data as of 4-Aug-2023.

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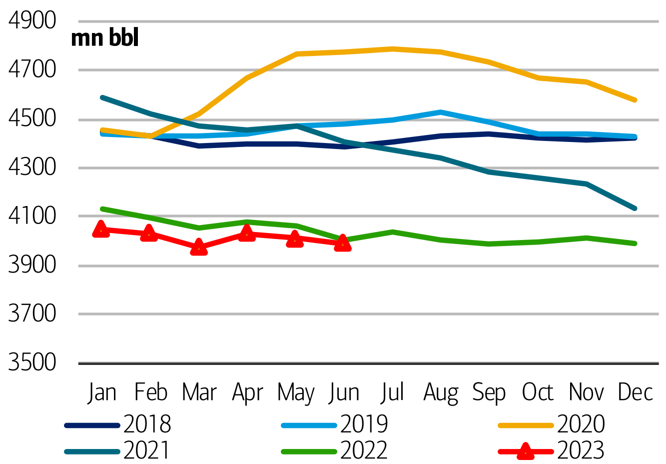
...while micro fundamentals are starting to improve too

A few months back, we argued that micro speculators and macro allocators/trend followers were pulling in different directions as the Fed and OPEC+ locked horns (see note: The battle royale between oil and money). While macro monetary headwinds are now fading with the Fed poised to end the rate hiking cycle, micro fundamentals remain constructive with total OECD oil stocks at the bottom of the range (Exhibit 5). Importantly, the OPEC+ production increases of 2021 and early 2022 are reversing and setting the stage for further stock draws (Exhibit 6).

Exhibit 5: OECD total inventories (commercial and government)
While macro monetary headwinds are fading, micro fundamentals remain constructive with total OECD oil stocks at the bottom of the range



Source: IEA

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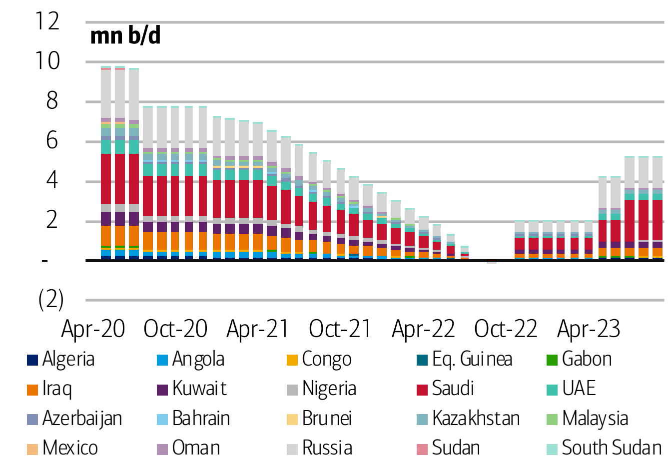
Exhibit 6: OPEC+ production cuts
Importantly, the OPEC production increases of 2021 and early 2022 are reversing and setting the stage for further stock draws



Source: OPEC, BofA Global Research estimates

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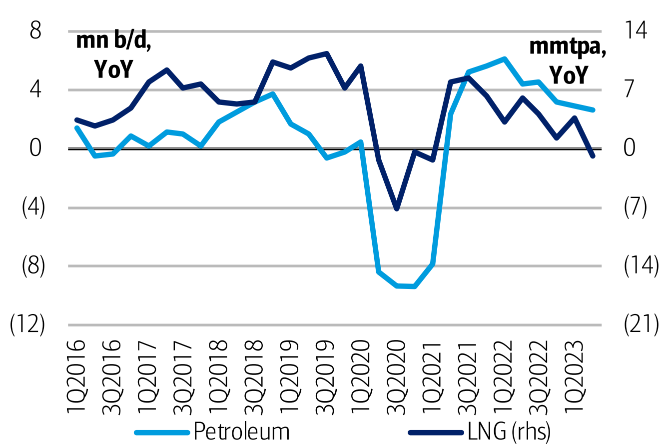
Supply dynamics have fueled a rally in energy prices…

Looking at the broader supply picture, we note that global energy supply growth rates have slowed down materially in the recent past (Exhibit 7), with YoY growth rates in oil supply coming down from a post covid peak of 6.1 mn b/d to a current level of 2.7 mn b/d and LNG YoY supply changes turning negative. Meanwhile, LNG imports into Europe have also come down materially on the back of the earlier collapse in TTF prices to EUR20/MWh (Exhibit 8), but in turn, lower netbacks relative to Asia set the stage for the recent material readjustment higher back to EUR35/MWh or $10/MMBtu.

Exhibit 7: Global petroleum liquids and LNG supply growth
Looking at the broader supply picture, we note that global oil supply growth rates have slowed down materially in the recent past…



Source: IEA, Woodmac

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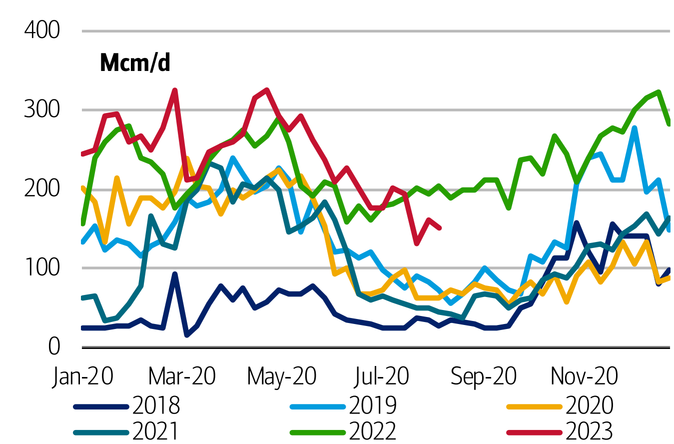
Exhibit 8: NWE LNG imports
…while LNG imports into Europe have also come down materially on the back of the earlier collapse in TTF prices to EUR20/MWh



Source: Bloomberg

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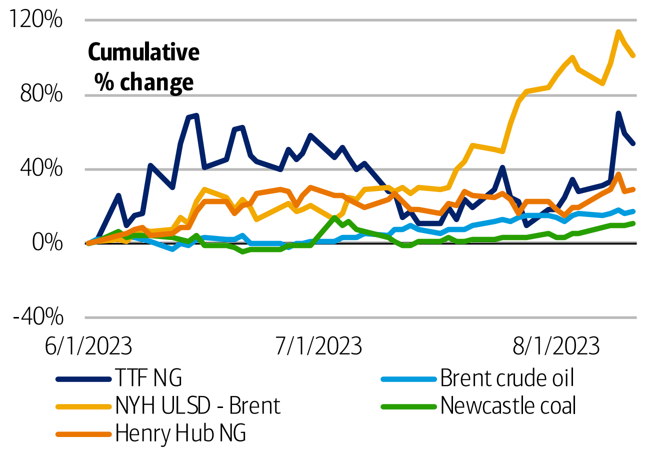
…from crude oil to petroleum products to global nat gas

The rally in energy has been relatively broad based, with crude oil, petroleum product cracks, coal, and natural gas prices all moving higher since June 1st (Exhibit 9). By far, diesel has experienced the strongest run up in prices, with ULSD diesel cracks against Brent nearly doubling, although TTF flat prices have also surged by 50% or so from the lows. The petroleum complex has been squeezed higher due to both supply-driven crude oil tightness and heat-related refinery bottlenecks that have resulted in lower-than-expected petroleum product output (Exhibit 10). Plus, thermal coal has formed a floor too in the past three months.

Exhibit 9: Cumulative change in energy prices since June 1, 2023

The rally in energy has been relatively broad based, with crude oil, petroleum product cracks, coal, and natural gas prices all moving higher since mid-July



Source: Bloomberg

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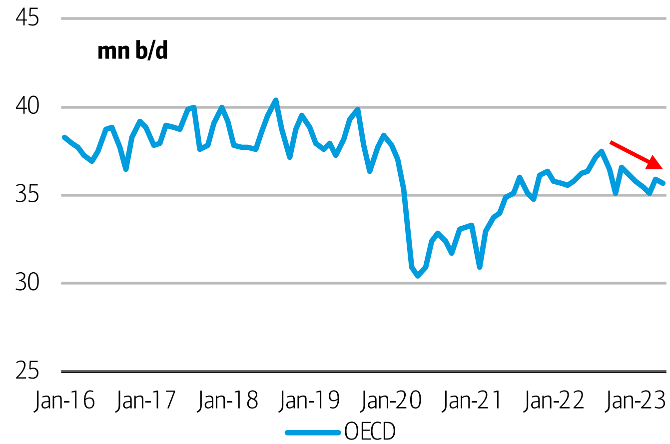
Exhibit 10: OECD refinery runs (through May 2023)

Oil has led the run up due to both supply-driven crude oil tightness and heat-related refinery bottlenecks that have resulted in lower-than-expected petroleum product output



Source: IEA

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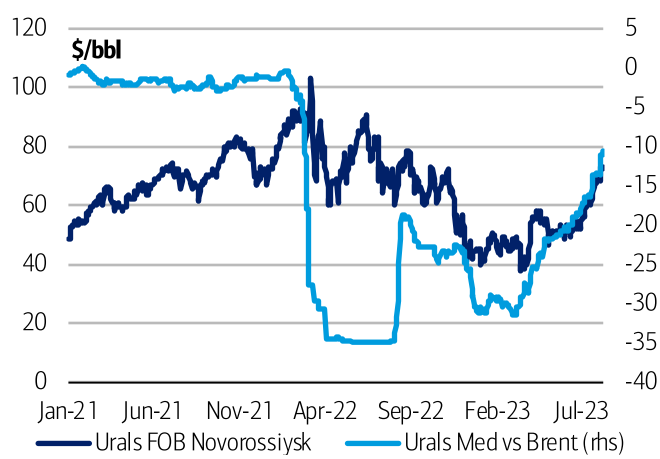
Oil has tightened with Russian exports coming down…

Why has oil moved up so much in such a short window of time? From a macro standpoint, the oil market is mostly driven by the Fed, China demand, Russian exports, and Saudi supply. In our view, the run up in Urals crude oil prices has been perhaps the most important factor driving Brent crude oil prices higher as of late (Exhibit 11). Following three quarters where Russia did not really align itself with Saudi Arabia's aggressive production curtailment policies, the move up in Russian Urals above the price cap set by the US and Europe is the result of a reduction in seaborne exports (Exhibit 12).

Exhibit 11: Urals spot price and differential

In our view, the run up in Urals crude has been perhaps the most important factor driving Brent crude oil prices higher as of late



Source: Platts

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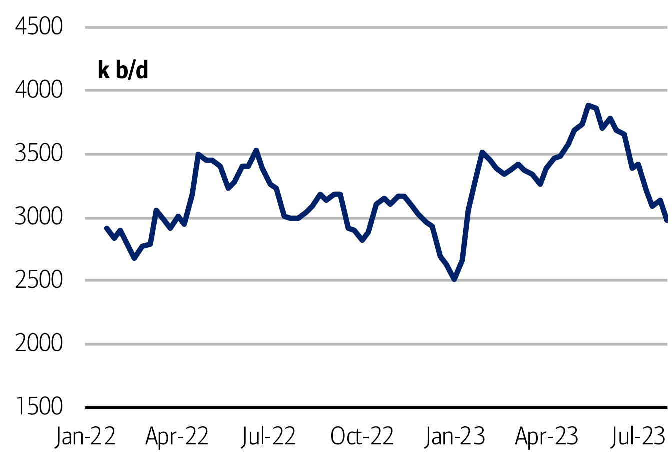
Exhibit 12: Russian waterborne crude oil exports

The move up in Russian Urals above the price cap set by the US and Europe is the result of a reduction in seaborne exports



Source: Bloomberg

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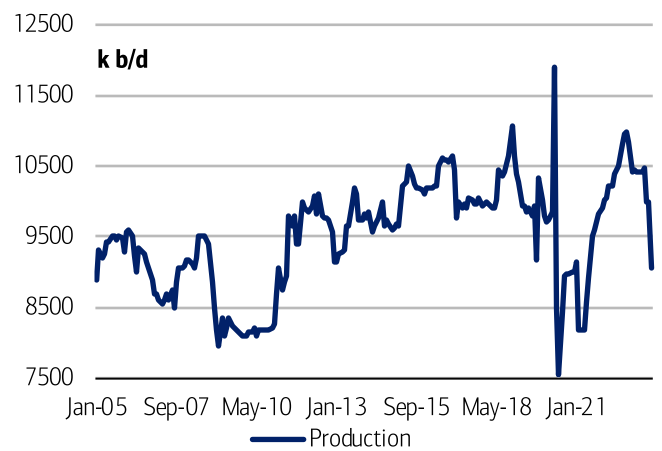
…and deep Saudi crude oil production curtailments

The Russian move to prioritize price over volume in oil markets (see note: Oil wants to break free) is likely the result of the internal financial pressures facing both the economy and the military, with the Russian ruble recently crossing 100 against the USD and a war effort stagnating. In contrast, Saudi Arabia has been very active reducing supply and has so far done most of the heavy lifting to balance the global market (Exhibit 13). Even then, not everyone across the OPEC organization has been committed to reducing crude production (Exhibit 14) and Iran and Venezuela output has been up for 6 months running.

Exhibit 13: Saudi Arabia crude oil output

Saudi Arabia has been very active reducing supply and has so far done most of the heavy lifting to balance the global market



Source: IEA

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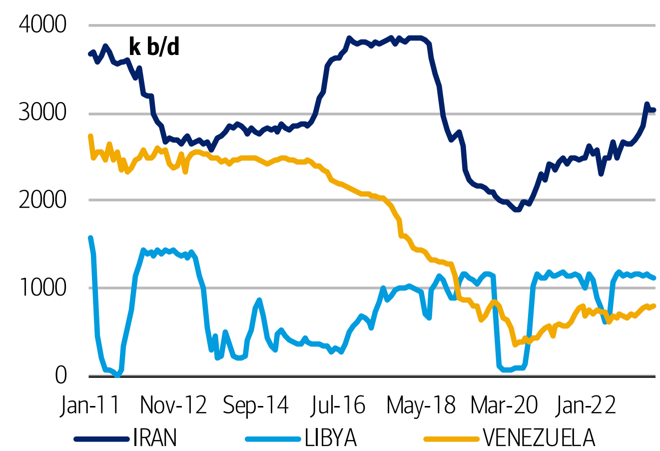
Exhibit 14: Iran, Venezuela, and Libya oil production

Even then, not everyone across the OPEC organization has been committed to reducing crude production



Source: IEA

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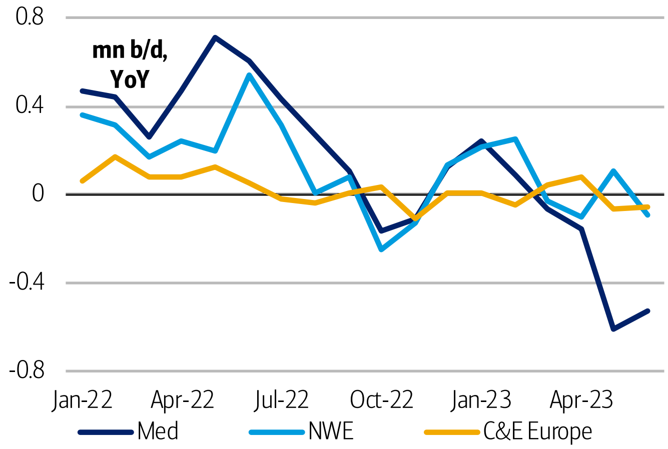
Petroleum fuels are tight too on low runs, low stocks…

Partly driven by weak weather conditions, refinery runs across different parts of the world have been rather low (Exhibit 15), with refineries in the Mediterranean alone experiencing an estimated 0.42 mn b/d YoY reduction in runs during 2Q23, partly as a result of record temperatures. The impact of heat on refining crude runs is somewhat of a new phenomenon that the market had not really discounted and has fueled the fast and furious move in diesel. More worryingly, it has kept inventories at very low levels, exacerbating tightness in petroleum product markets across the board (Exhibit 16) as we head into winter.

Exhibit 15: European refinery input growth

Partly driven by weak weather conditions, refinery runs across different parts of the world have been rather low...



Source: Woodmac

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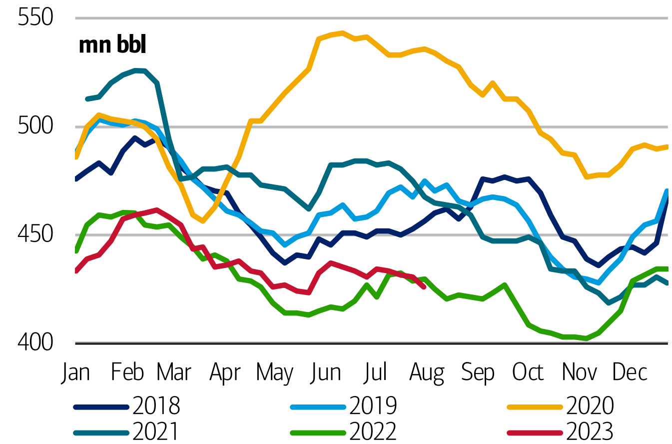
Exhibit 16: Gasoline, diesel, and jet fuel inventories in US, ARA, and Singapore...

...which in turn has kept inventories at very low levels and exacerbated tightness in petroleum product markets



Source: Bloomberg

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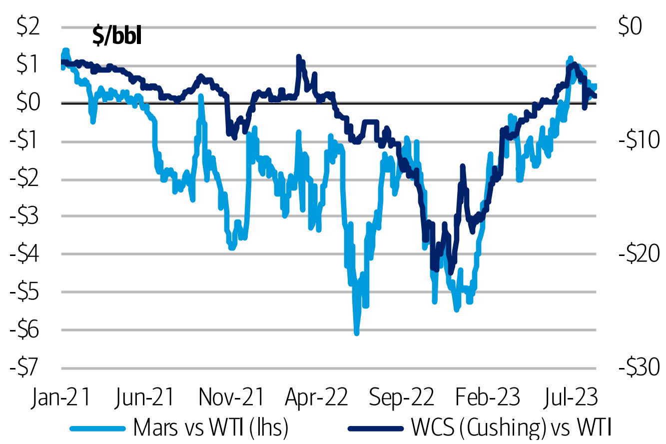
...although cyclical demand trends remain very soft

A key factor supporting gasoline and diesel cracks has likely been the steep compression in heavy oil spreads (Exhibit 17), with both Western Canada Select (WCS) and Mars crude in North America narrowing their usual discounts against light West Texas grades. Of course, tightness in heavy oil is not a surprise given the deep OPEC+ oil cuts and the very strong Official Selling Prices of Saudi Heavy crudes. Even then, the run up in diesel is somewhat counterintuitive given how weak cyclical demand indicators have been as of late (Exhibit 18).

Exhibit 17: US crude oil quality differentials

A key factor supporting gasoline and diesel cracks has likely been the steep compression in heavy oil spreads...



Source: Bloomberg

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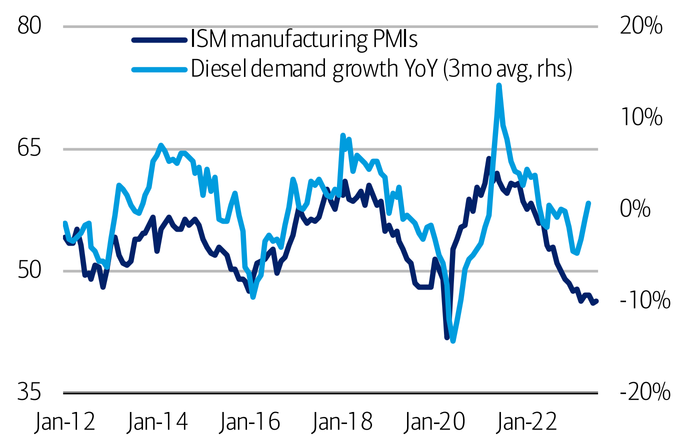
Exhibit 18: US manufacturing PMIs and diesel demand

...although the run up in diesel is also counterintuitive given how weak cyclical demand indicators have been as of late



Source: Bloomberg

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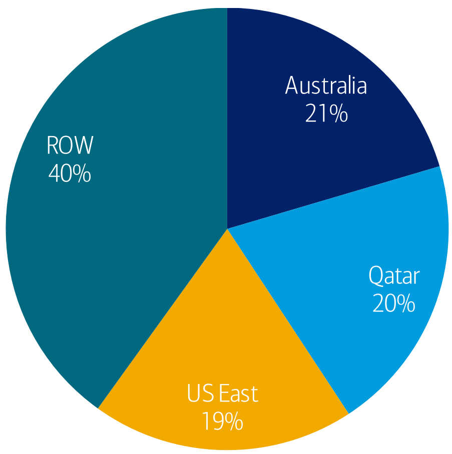
An Australian strike has triggered a global gas rally...

While LNG supplies to the global market have continued to grow in recent years, the loss of Russian natural gas volumes has permanently dislocated global energy markets (see note: Mind the Russian energy gap). As such, potential LNG strikes in Australia have scared market participants and triggered a short covering rally (Exhibit 19), resulting in a very sharp run up in European TTF natural gas prices and lent support to Asian JKM (Exhibit 20). After all, Australia was the world's biggest LNG exporter in 2022, with 21%

of the volumes. The quick compression of Asia-Europe gas netbacks is symptomatic of the highly competitive nature of this market.

Exhibit 19: 2022 LNG supply by country in 2022

LNG supplies to the global market have continued to grow, but now potential strikes in Australia have put some at risk...



Source: Woodmac

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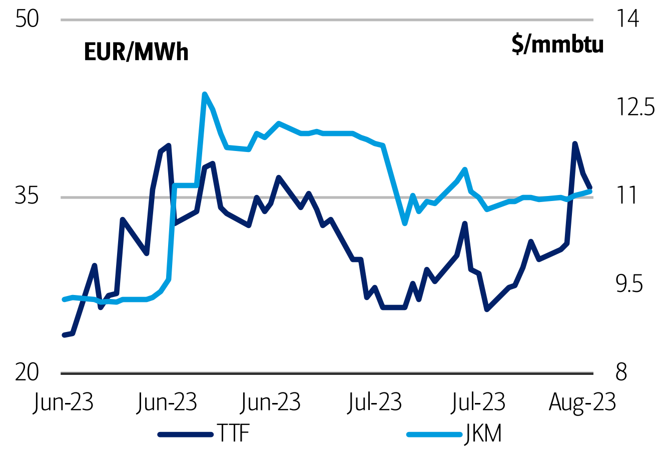
Exhibit 20: TTF and JKM natural gas prices

...resulting in a very sharp run up in European TTF natural gas prices



Source: Bloomberg

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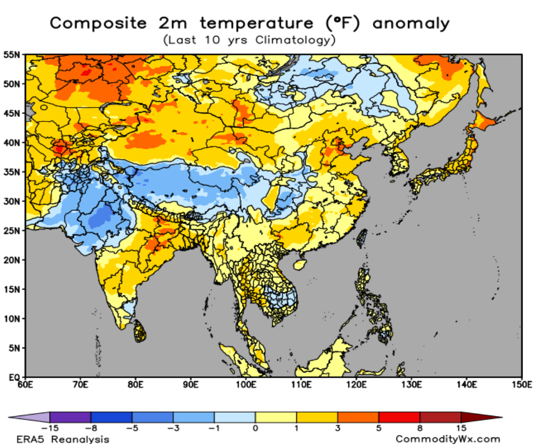
...with winter weather uncertainty around the corner...

Hot weather has affected refining capacity availability this summer, but demand is also being impacted across the board by record-breaking heat. Looking forward, hot temperatures this summer across different parts of the world and the weather pattern known as El Niño (Exhibit 21) suggest that this winter could be warmer-than-normal and thus come to provide some relief to energy consumers. Yet, drought conditions create other problems too (Exhibit 22), with both hydroelectric and nuclear power generation at risk as low rainfall in Europe has constrained energy supplies.

Exhibit 21: June and July temperature anomaly to 10-year average

Record hot temperatures this summer across different parts of the world and the weather pattern known as El Niño...



Source: Commodity Weather Group

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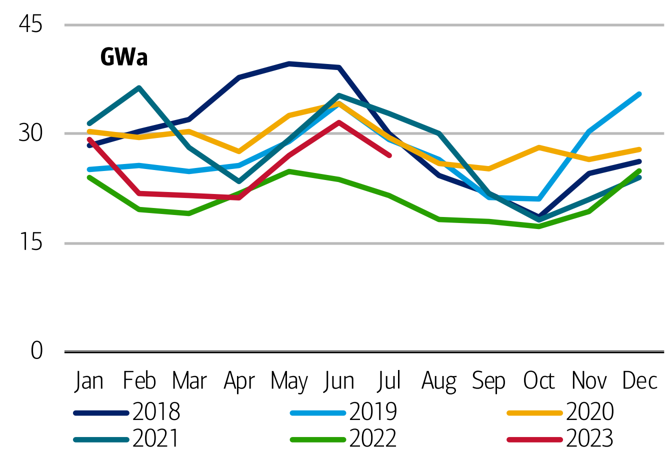
Exhibit 22: Western Europe hydro power generation

...suggest that this weather with winter could be warmer-than-normal, but drought conditions create other problems too



Source: Platts

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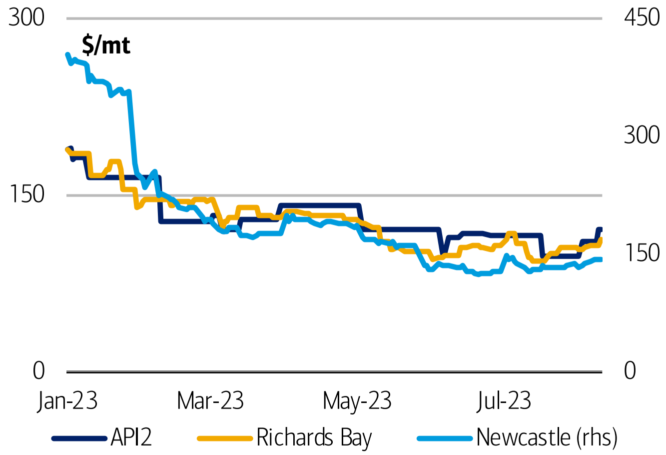
...while global coal prices have been finding a floor

Beyond natural gas and oil, thermal coal prices have also been finding a floor in the recent past (Exhibit 23) and are now poised to continue to move higher, in our view. Richards Bay in South Africa is back to $112/mt after bottoming out earlier this year at just over $90/mt, while Newcastle in Australia is also up slightly to $146/mt from a low point of roughly $124/mt. Helped by record thermal power generation in China, in part a result of exceptionally weak hydroelectric power generation conditions (Exhibit 24), Chinese coal demand has been another major source of price support for the global coal market.

Exhibit 23: Global coal prices
Beyond natural gas and oil, thermal coal prices have also been finding a floor in the recent past...



Source: Bloomberg
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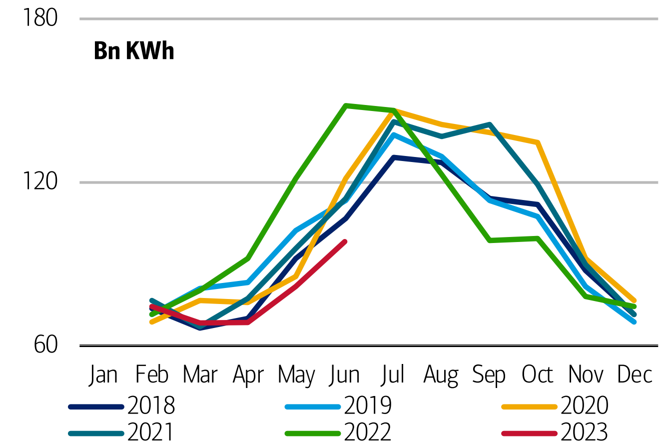
Exhibit 24: China hydroelectric power generation
...helped by record thermal power generation in China, in part a result of exceptionally weak hydro conditions



Source: Bloomberg
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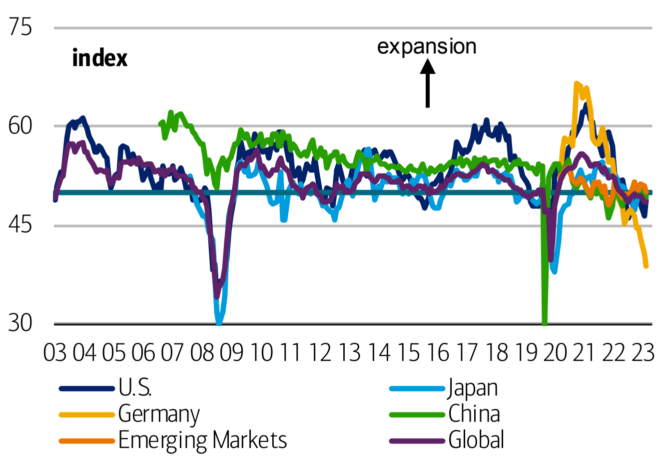
Yet demand conditions have to improve for a sustained...

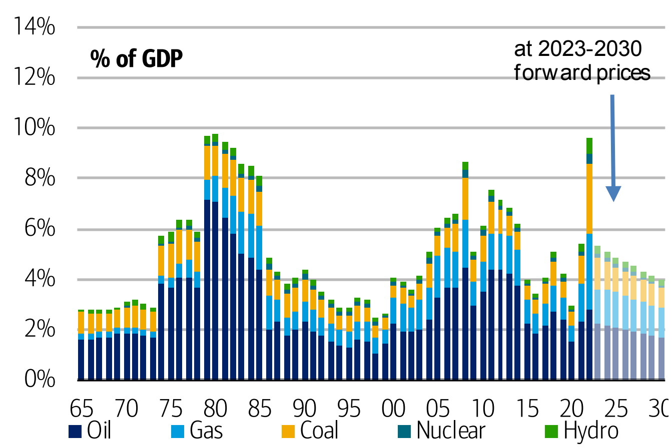
While most of the recent run up in energy prices has been macro-positioning and supply-driven, demand conditions could yet improve. Looking at Manufacturing PMIs around the world (Exhibit 25), we note that leading economies like Germany are experiencing a major contraction with others nearing contractionary territory too. In particular, energy prices as a share of GDP are now a fraction of what they were last year at the peak (Exhibit 26) and are more consistent with the average of the past 20 years. Thus, an improvement in the demand for durable goods and other industrial products on the back of a more constructive macro backdrop could lift global energy demand.

Exhibit 25: Manufacturing PMIs
While most of the recent run up in energy prices has been macro-positioning and supply-driven, demand conditions could yet improve...



Source: Bloomberg
BofA GLOBAL RESEARCH

Exhibit 26: Global energy demand as a % of GDP
...particularly because energy prices as a share of GDP are now a fraction of what they were last year at the peak



Source: IMF, BP, Bloomberg, BofA Global Research estimates
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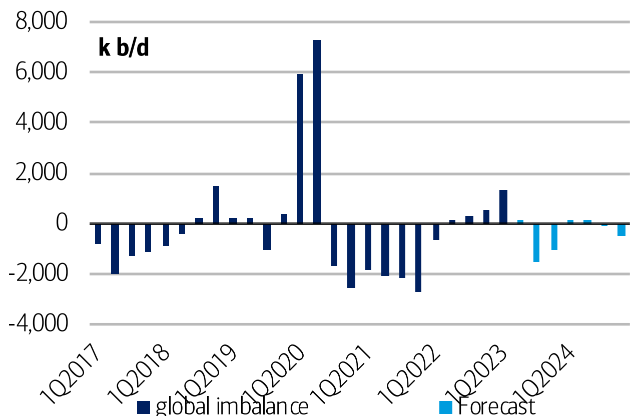
...rally to $100+/bbl in Brent, to $20/MMBtu in JKM/TTF

While better energy demand conditions could trigger a rally in both oil and gas prices over the coming months, we also note that there are buffers that could eventually cap the ongoing rally in energy prices. For starters, our updated oil balances assume that

Saudi production reverts back to 9.5mn b/d in 2024 as the "lollipop" cut is unwound over the coming months and we see a relatively balanced market in 2024 (Exhibit 27) following a sustained deficit in 2H23 of 1.3mn b/d. Historically, a 500kb/d upward revision to oil demand, other things being equal, would trigger a $10/bbl move up in average prices (Exhibit 28).

Exhibit 27: Global oil balance

Our updated oil balances assume that Saudi production reverts back to 9.5mn b/d in 2024, so deficits would require stronger demand



Source: IEA, BofA Global Research estimates

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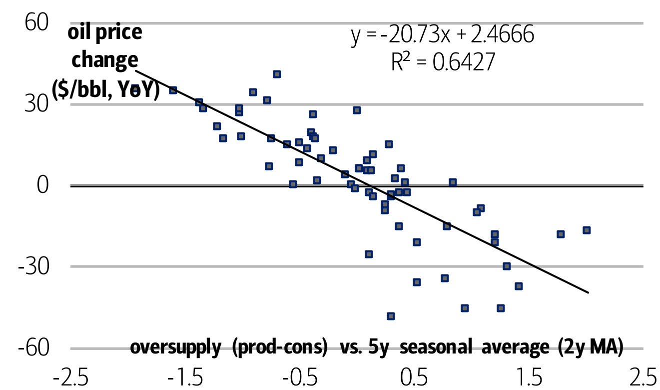
Exhibit 28: Brent crude oil price changes vs. global oil oversupply

Historically, a 500kb/d upward revision to oil demand, other things being equal, would trigger a $10/bbl move up in average prices



Source: Bloomberg, IEA, BofA Global Research estimates

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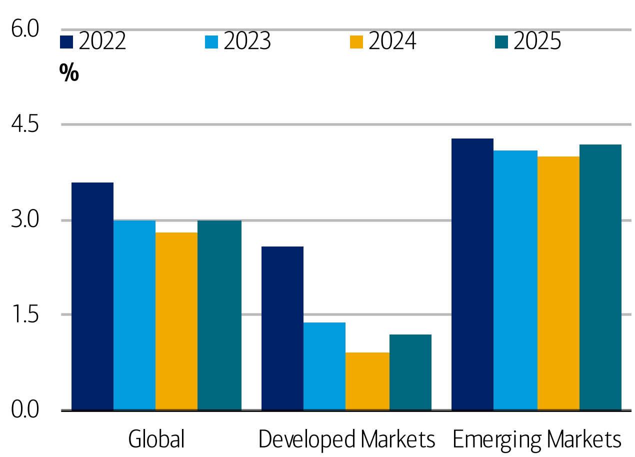
Our economics team recently upgraded GDP forecasts…

Could macro-linked global oil demand improve to keep pushing oil higher? Our economics team has recently upgraded their global GDP forecast and now sees growth of 3% in 2023 and 2.8% in 2024 (Exhibit 29). These new figures are supported by an expected soft-landing in the US economy that will keep growth in positive territory in the world's biggest economy (Exhibit 30). Still, oil betas to GDP are not as strong as they used to be and to offset a potential Saudi oil production increase of 500 thousand b/d via demand increases alone would require global GDP growth in 2024 of 3.5% to 4%, or 0.5% to 1% higher than current expectations.

Exhibit 29: Global real GDP growth

Our economics team has recently upgraded their global GDP forecast and now sees growth of 3% in 2023 and 2.8% in 2024…



Source: BofA Global Research estimates

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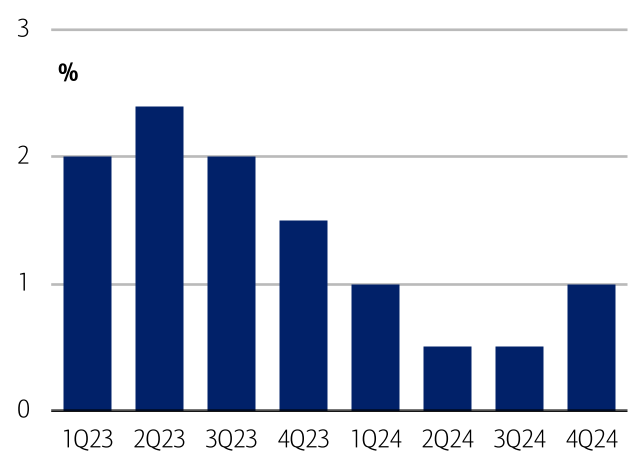
Exhibit 30: US real GDP growth by quarter

…supported by an expected soft-landing in the US economy that will keep growth in positive territory in the world's biggest economy



Source: BofA Global Research estimates

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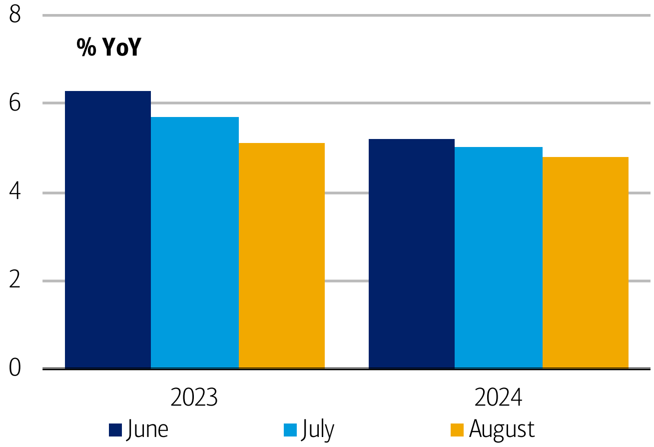
…and China is reviewing fiscal and monetary stimulus

In contrast to the more buoyant outlook reflected in our latest global revisions, our economics team has been pushing their China GDP growth forecasts lower for some time now (Exhibit 31). Has the downward drift in negative growth revisions come to an end in China? In some ways, the deflationary print this past week could trigger Beijing into action to stimulate the ailing economy (Exhibit 32) and all eyes are now on any hints of monetary or fiscal policy support. Even then, there is no guarantee that President Xi will pull the trigger on it or that any package will be large enough to create a new virtuous cycle in China.

Exhibit 31: BofA China GDP forecasts by publication month
In contrast, our economics team has been revising their China GDP growth forecasts lower for some time now...



Source: BofA Global Research estimates

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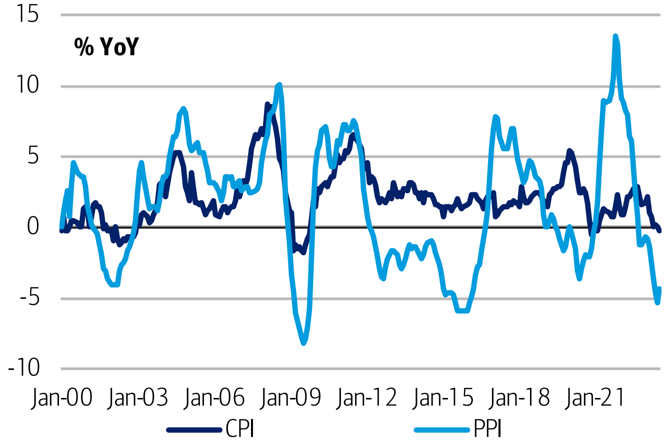
Exhibit 32: China CPI and PPI
...although the deflationary print this past week could trigger Beijing into action to stimulate the ailing economy



Source: Bloomberg

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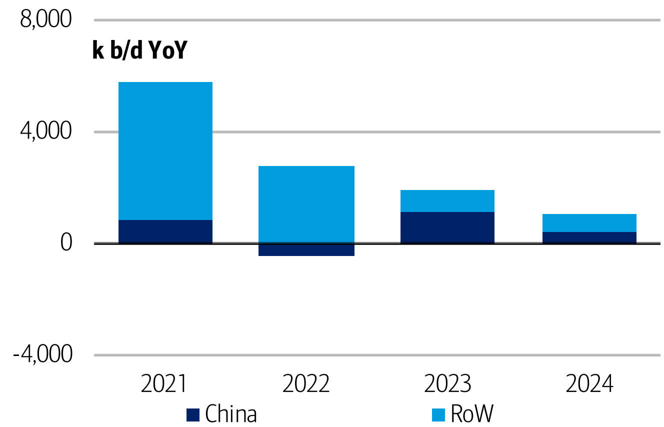
In turn, better global energy demand trends in 2024...

In sum, energy supply trends have deteriorated in recent months and triggered a rally in energy prices. Better global energy demand trends in 2024 could further extend the upward momentum in energy prices, although we see limits. At the moment, we expect 1.9mn b/d in terms of global oil demand growth YoY this year and 1.06mn b/d next year, led mostly by China (Exhibit 33). With inventories set to come down, front to third month spreads in Brent and WTI crude are back into backwardation. While still far from last year's levels (Exhibit 34), any improvement in demand would allow for higher spot crude prices.

Exhibit 33: Global oil demand growth forecasts
We expect 1.9mn b/d in terms of global oil demand this year and 1.06mn b/d next year, led mostly by China



Source: IEA, BofA Global Research estimates

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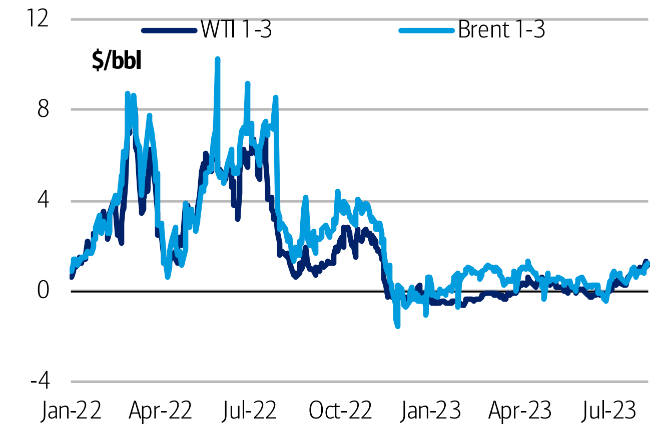
Exhibit 34: Brent and WTI 1-3 month timespreads
Front to third month spreads in Brent and WTI crude are back into backwardation, but are still far from last year's levels



Source: Bloomberg

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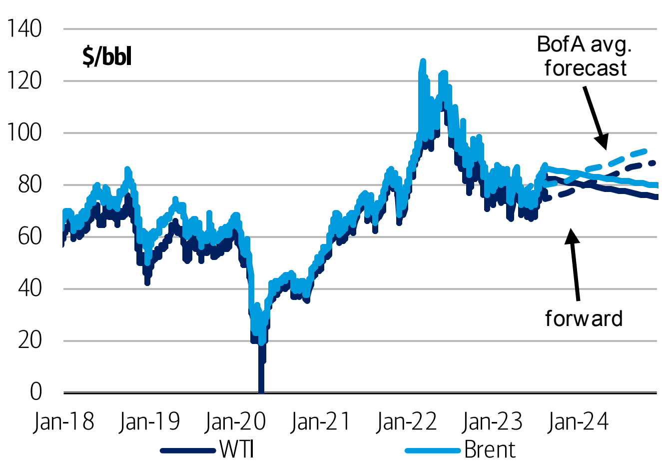
…could create upside risks to our oil, gas forecasts…

We currently project Brent and WTI crude oil to average $9 and $8/bbl respectively above the curve in 2024 (Exhibit 35), with our Brent forecast standing at $90/bbl and our WTI projection sitting at $85/bbl next year. With the market likely to remain roughly balanced, higher oil prices would likely require deeper oil production cuts by OPEC+, unexpected supply disruptions, or better demand conditions, in our view. In any case, we do acknowledge that industry is at a cyclical low point and that peak rates and a strong dose of China stimulus could pull global oil and gas prices higher (Exhibit 36).

Exhibit 35: Crude oil price forecast versus forwards
We currently project Brent and WTI crude oil to average $9 and $8/bbl respectively above the curve in 2024…



Source: Bloomberg, BofA Global Research estimates

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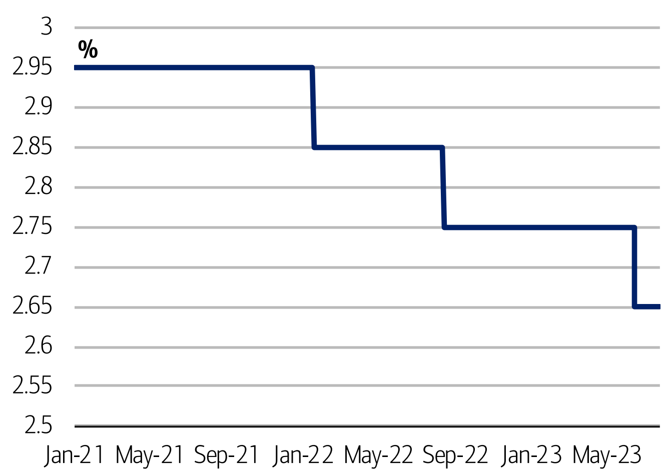
Exhibit 36: China 1 year lending rate
…but acknowledge that industry is at a cyclical low point and that peak rates, China stimulus could pull prices higher



Source: Bloomberg

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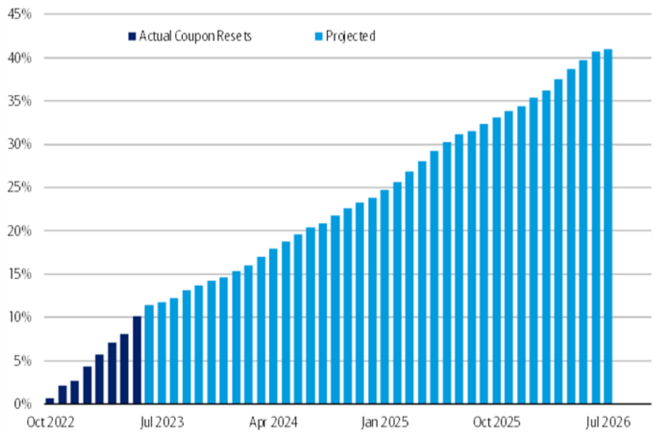
…but equally high rates can still trigger a recession

Even then, recession risks have not disappeared completely, and high interest rates can trigger refinancing risks (Exhibit 37) over the coming months. After all, it is not unusual for the economy to flip into recession when interest rate yield curves invert (Exhibit 38). Inaction in China is also a major downside risk to the global energy markets, even if Beijing has trained the market to expect big stimulus packages for decades. As such, we maintain our Brent and WTI forecasts for this year and next.

Exhibit 37: Coupon resets in global corporate bonds ($16trln)
Even then, recession risks have not disappeared completely, and high interest rates can trigger refinancing risks



Source: BofA Global Research estimates

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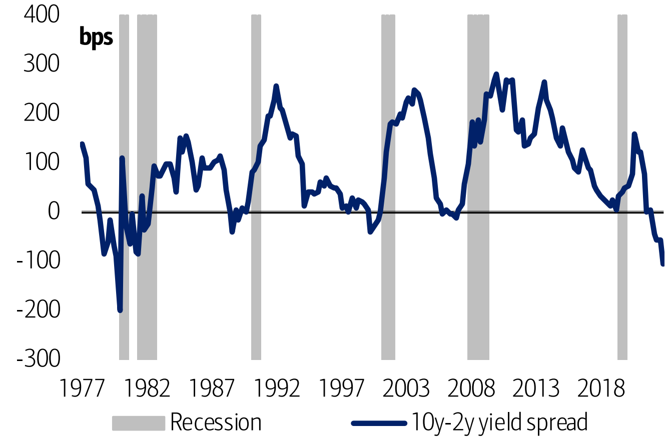
Exhibit 38: US 2y10y yield spread and recessions
It is not unusual for the economy to flip into recession when interest rate yield curves invert



Source: Bloomberg

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Exhibit 39: BofA global oil supply forecast (in thousand b/d)
Quarterly and annual averages

	2022	1Q2023F	2Q2023F	3Q2023F	4Q2023F	2023F	1Q2024F	2Q2024F	3Q2024F	4Q2024F	2024F
OECD Americas	25,650	26,680	26,710	27,380	27,310	27,020	27,280	27,410	27,960	28,010	27,660
United States	17,880	18,720	19,150	19,390	19,230	19,120	19,220	19,550	19,980	19,800	19,640
-Crude	*11,910*	*12,630*	*12,700*	*12,780*	*12,910*	*12,750*	*12,960*	*12,910*	*13,160*	*13,290*	*13,080*
-NGL	*5,880*	*6,010*	*6,360*	*6,520*	*6,240*	*6,280*	*6,180*	*6,540*	*6,740*	*6,430*	*6,470*
Canada	5,760	5,840	5,420	5,880	5,980	5,780	5,950	5,800	5,880	6,100	5,930
Mexico	2,010	2,100	2,140	2,100	2,100	2,110	2,100	2,050	2,100	2,100	2,090
OECD Asia Oceania	480	460	450	440	460	450	470	470	450	450	460
Australia	410	390	370	380	400	380	400	400	390	390	390
OECD Europe	3160	3280	3190	3100	3310	3,220	3350	3220	3280	3360	3,300
Norway	1,900	2,000	2,000	1,950	2,080	2,010	2,130	2,030	2,080	2,130	2,090
United Kingdom	830	840	760	730	810	780	810	780	790	820	800
Non-OECD Europe	110	100	100	100	100	100	100	90	90	90	90
Former Soviet Union	13,900	14,140	13,720	13,560	13,610	13,760	13,650	13,550	13,700	13,740	13,660
Russia	11,090	11,190	10,840	10,700	10,700	10,860	10,700	10,700	10,700	10,700	10,700
Azerbaijan	670	640	620	640	640	630	640	630	630	630	630
Kazakhstan	1,820	1,990	1,950	1,900	1,950	1,950	2,000	1,900	2,050	2,100	2,010
Non-OPEC Africa	1,290	1,230	1,270	1,310	1,280	1,270	1,270	1,270	1,270	1,270	1,270
Egypt	600	590	600	600	590	600	590	590	590	590	590
Sudan	200	170	200	220	200	200	190	190	190	190	190
Non-OPEC Asia	6,880	7,030	6,990	6,950	6,950	6,980	6,950	6,940	6,940	6,930	6,940
India	700	680	690	690	700	690	700	710	710	710	710
Malaysia	560	580	550	560	550	560	550	550	540	540	550
China	4,180	4,340	4,340	4,300	4,300	4,320	4,310	4,310	4,320	4,320	4,320
Non-OPEC Latin America*	5,640	5,960	6,000	6,040	6,150	6,040	6,260	6,420	6,440	6,500	6,410
Argentina	710	750	760	760	770	760	780	790	800	810	790
Brazil	3,120	3,300	3,320	3,380	3,430	3,360	3,480	3,530	3,550	3,600	3,540
Colombia	760	780	790	790	790	790	780	770	770	760	770
Non-OPEC Middle East	3,160	3,130	3,150	3,160	3,170	3,150	3,170	3,170	3,170	3,180	3,170
Oman	1,072	1,072	1,059	1,064	1,069	1,066	1,072	1,069	1,074	1,079	1,074
Qatar	1,801	1,813	1,812	1,810	1,810	1,811	1,810	1,810	1,810	1,810	1,810
Processing Gains	2,310	2,310	2,350	2,380	2,370	2,350	2,440	2,440	2,440	2,440	2,440
Global Biofuels	2,940	2,650	3,250	3,530	3,140	3,140	2,770	3,390	3,680	3,270	3,280
Non-OPEC** (incl. processing gains)	65,530	66,970	67,180	67,940	67,840	67,480	67,700	68,360	69,430	69,240	68,680
OPEC crude	29,080	29,360	28,850	27,820	28,370	28,600	28,570	28,640	28,700	28,710	28,650
Saudi Arabia crude	10,530	10,420	10,140	9,000	9,500	9,770	9,500	9,500	9,500	9,500	9,500
Kuwait	2,700	2,680	2,600	2,550	2,550	2,590	2,550	2,550	2,550	2,550	2,550
UAE	3,340	3,440	3,260	3,200	3,200	3,280	3,300	3,300	3,300	3,300	3,300
Iraq crude	4,440	4,390	4,140	4,250	4,250	4,260	4,300	4,300	4,300	4,300	4,300
Iran crude	2,550	2,700	3,000	3,000	3,050	2,940	3,100	3,150	3,200	3,200	3,160
Libya crude	990	1,150	1,150	1,150	1,150	1,150	1,150	1,150	1,150	1,150	1,150
Nigeria crude	1,150	1,270	1,150	1,300	1,300	1,250	1,300	1,300	1,300	1,300	1,300
Venezuela crude	700	710	790	800	850	790	880	900	930	950	910
other OPEC crude	2,680	2,590	2,620	2,570	2,520	2,570	2,500	2,490	2,470	2,460	2,480
Total OPEC NGLs + Non-conventional	5,400	5,450	5,490	5,450	5,450	5,460	5,500	5,500	5,500	5,500	5,500
Total OPEC	34,470	34,810	34,340	33,270	33,820	34,060	34,070	34,140	34,200	34,210	34,150
Total World Supply	100,010	101,780	101,520	101,210	101,660	101,540	101,770	102,500	103,630	103,450	102,840

Source: IEA, EIA, BofA Global Research estimates

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Exhibit 41: BofA global oil demand forecast (in thousand b/d)
Quarterly and annual averages

	2022	1Q2023F	2Q2023F	3Q2023F	4Q2023F	2023F	1Q2024F	2Q2024F	3Q2024F	4Q2024F	2024F
TOTAL OECD Demand	46,000	45,620	45,870	46,800	46,270	46,140	45,350	45,530	46,260	46,110	45,810
OECD Americas Demand	25,110	24,710	25,470	25,500	25,290	25,240	24,650	25,010	25,340	25,180	25,050
United States	20,430	20,110	20,770	20,680	20,520	20,520	20,020	20,270	20,500	20,390	20,290
Canada	2,380	2,340	2,450	2,450	2,390	2,410	2,360	2,480	2,470	2,410	2,430
Mexico	1,930	1,890	1,860	2,010	2,020	1,940	1,890	1,870	2,010	2,020	1,950
OECD Europe Demand	13,520	13,090	13,470	13,880	13,230	13,420	12,930	13,330	13,630	13,170	13,260
OECD Pacific Demand	7,380	7,810	6,930	7,430	7,750	7,480	7,760	7,200	7,290	7,760	7,500
TOTAL NON-OECD Demand	53,940	54,870	55,490	55,970	56,440	55,690	56,250	56,800	57,420	57,850	57,080
China	14,660	15,440	15,920	15,750	16,040	15,790	15,870	16,140	16,160	16,570	16,190
India	5,280	5,570	5,520	5,280	5,680	5,510	5,810	5,880	5,630	5,910	5,810
Other Asia (ex. China & India)	8,780	8,830	8,860	8,860	9,100	8,910	9,050	9,040	9,090	9,300	9,120
Middle East	8,970	8,820	8,980	9,590	9,050	9,110	9,080	9,330	9,760	9,210	9,340
Latin America	6,210	6,180	6,320	6,390	6,310	6,300	6,180	6,300	6,450	6,380	6,330
FSU	4,940	4,860	4,890	5,020	5,000	4,940	4,890	4,920	5,060	5,030	4,970
Africa	4,310	4,400	4,240	4,310	4,480	4,360	4,580	4,420	4,490	4,660	4,540
Non-OECD Europe	780	780	770	780	780	780	800	780	790	790	790
TOTAL Demand	99,940	100,480	101,360	102,780	102,710	101,830	101,600	102,340	103,680	103,960	102,890
Market imbalance (supply - demand)	70	1,300	160	-1,570	-1,050	-290	170	160	-50	-510	-50

Source: IEA, EIA, BofA Global Research estimates

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