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SPECIAL REPORT – COMMODITY, ACTIVITY AND FISCAL

GLOBAL OIL BALANCE AND ITS EFFECTS ON ACTIVITY AND FISCAL ACCOUNTS

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- The price of oil has become a key variable for the domestic macroeconomic scenario, especially due to its positive effect on public accounts. Last year, we saw a BRL200 billion surprise vs. our revenue projections, which led to the central government's first surplus in eight years (0.6% of GDP). About ~62% of the surprise was related to oil. For this year, we continue to forecast (structurally) higher oil prices, although at lower levels compared to 2022.
- Our forecast for Brent oil is at USD 85/bbl for YE2023 and USD 95/bbl for YE2024. Our call hinges on potential factors which we expect would effectively "put a floor" on oil prices: supply cuts from key producing countries, and China and the U.S. replenishing stockpiles by buying oil price dips.
- We are also including an overview of the oil impact on domestic activity in this report. The main aspect was to analyze the effects of oil prices on our proprietary financial conditions index (FCI). We concluded that oil price (per se) does not have a major effect on the FCI and hence we do not expect it to impact the domestic activity at least until mid-2024. According to our sensitivity analysis on oil prices, the likelihood of a GDP recession could reach 0.51 in a bull case scenario and 0.43 in a bear case scenario. Therefore, even with the lowest simulated prices, the probability would still be above the false positive threshold. As an alternate exercise, if we see some easing in the other components of the FCI – especially the ones linked to rates – the probability of a recession would be much lower by 2Q24.
- We continue to explore the impact of oil prices on fiscal accounts. After being responsible for 2.8% of GDP in total revenues for the Central Government, we expect this value to reduce to something close to 2.4% of GDP this year. We see the commodity shock causing a permanent increase in revenue of around 0.8 p.p. The strong impulse from commodities should continue in the short term, yet we believe that this effect will gradually diminish in the medium term.
- We analyzed some scenarios for oil prices and public revenues and observed that the commodity price will be an important parameter to observe going forward. This, especially considering the fact that the government needs at least 1.5% of GDP in new net revenues to comply with the new fiscal framework's ambitious primary targets. The oil prices could help with fiscal consolidation, in our view. In a scenario where oil prices drop to an average of USD65/bbl next year, this would imply 0.7% of GDP reduction in revenues, meaning that the necessity for closing the budget gap would be much higher. For the medium-term, we believe that oil revenues could increase with greater federal share in pre-salt, even with a reduction in prices in medium-term (USD65/bbl). The lower price will be compensated with more production—one of the key assumptions to reach a sustainable primary surplus by the end of the decade, in our scenario.

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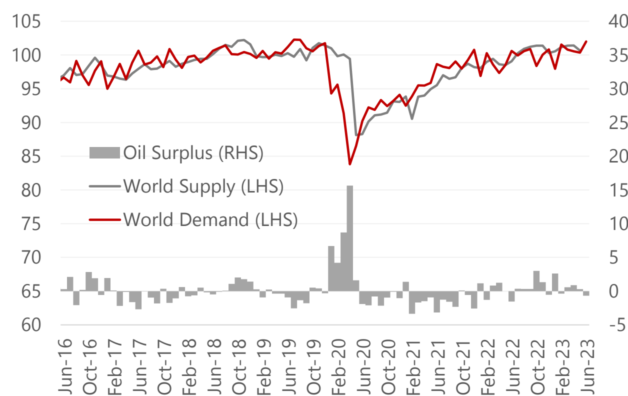
In this report, we briefly explore our oil outlook and the recent impact of oil prices on domestic activity (through the FCI) and on public accounts. Our forecast for Brent oil is at USD 85/bbl for YE2023 and USD 95/bbl for YE2024, and we factor these values in our Brazilian scenario. In the fundamentals of supply and demand, we observe production/exports cuts from key countries, low inventories, and resilient demand following the recovery of the economy post-COVID. Adding to this bullish scenario for oil, the conflict between Russia and Ukraine still lingers. While we recognize the massive uncertainty regarding this geopolitical shock, it has a significant impact on our inflation and fiscal scenario. From the point of view of Brazilian public accounts, we have seen a boost in revenue from commodities and also from the inflation-effect. Thus, oil revenues have been important in improving the fiscal result, and we expect this effect to continue going forward.

i) Global Oil Balance

Our forecast for Brent oil is at USD 85/bbl for YE2023 and USD 95/bbl for YE2024. Our call hinges on factors that would effectively "put a floor" on oil prices: supply cuts from key producing countries, and China and the U.S. replenishing stockpiles by buying oil price dips.

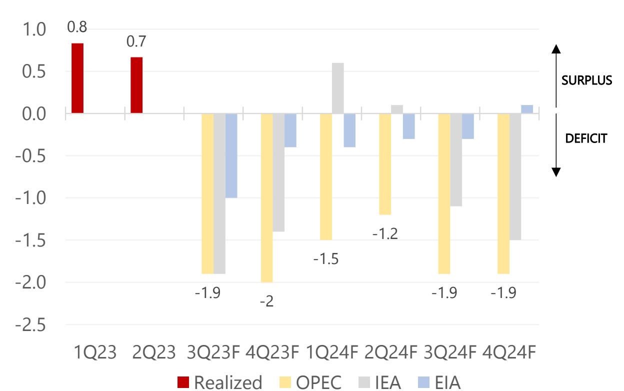
Supply cuts from Saudi Arabia and Russia. Russian oil flows to Asia surprised the market players which expected a tighter global oil balance earlier this year. At the margin, however, these flows have been reducing, with Russia announcing plans to cut oil exports in September by 300k barrels per day. In addition, Saudi Arabia extended its unilateral 1-million-barrels a day (bpd) oil supply cut into September, while also signaling that deeper reductions could be on the way as it sought to support stability and balance in oil markets. We see this as a key factor in putting a floor to oil prices going forward.

Figure 1 – World Oil Supply x Demand (mbd)



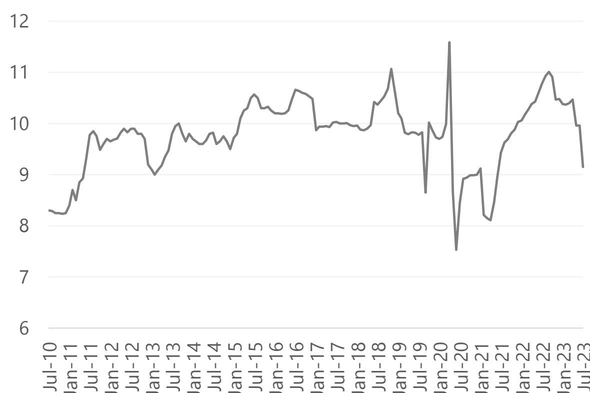
Sources: Bloomberg, Santander.

Figure 2 – Global Oil Balance Forecast (million barrels)



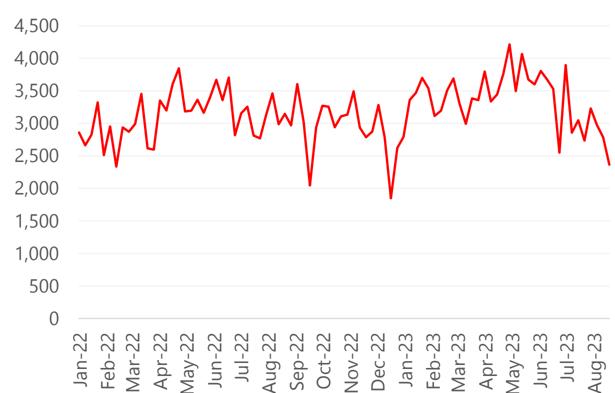
Sources: OPEC, IEA, EIA, Santander.

Figure 3 – Saudi Arabia Crude Production (million bpd)



Sources: Bloomberg, Santander.

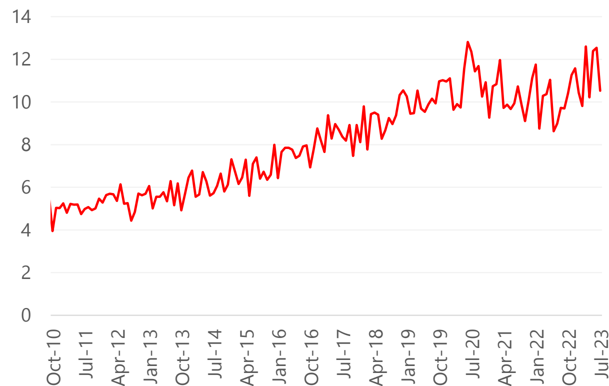
Figure 4 – Russian total crude oil seaborne exports weekly (kb/d)



Sources: OPEC, IEA, EIA, Santander.

China oil imports are running above previous year's levels. According to China's customs figures, China's crude imports fell and met 10.3 million barrels a day in July - following strong figures in recent months given the low oil prices – but are still running above previous years. From now on, we expect China to have less incentive to stockpile even with a seasonal increase in demand in 4Q23. As is the case with supplies from Saudi Arabia and Russia, we see this factor also supporting a floor in oil prices: if the prices drop too low, China could return to the market and add barrels to its stockpiles.

Figure 5 – China Crude Oil Import (million barrels)



Sources: Bloomberg, Santander.

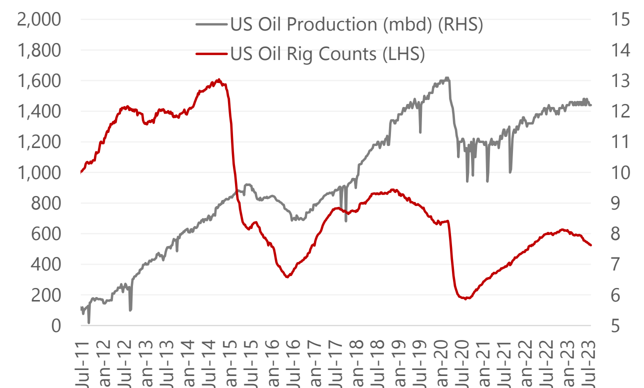
U.S. delays the replenishment of its Strategic Petroleum Reserves (SPRs). In the aftermath of the Russia-Ukraine conflict, the U.S. drained a historic 180 million-barrel of its Strategic Petroleum Reserves (SPRs) bringing its level to about half of its capacity. The administration has said that it wants to buy back oil for the reserve when it costs US$67-72 per barrel. Once again, we see another factor supporting a floor in oil prices. Recently, the U.S. pulled back an offer to buy 6 million barrels of oil, a decision made due to "market conditions".

U.S. shale oil production has likely peaked. According to EIA, U.S. shale oil production fell for the first time this year to 9.4 million barrels a day and is expected to decline over the next two quarters. After seeking production growth over the last decade, companies in the sector have shifted their strategy towards limiting capital spending, cutting debt and boosting shareholder value. Currently, we do not see the U.S. shale industry as the marginal producer of oil, a role they held in the last decade. This means more market power for OPEC+.

Figure 6 – U.S. Total Oil Crude Stocks[1] (million barrels)

Sources: Bloomberg, Santander.

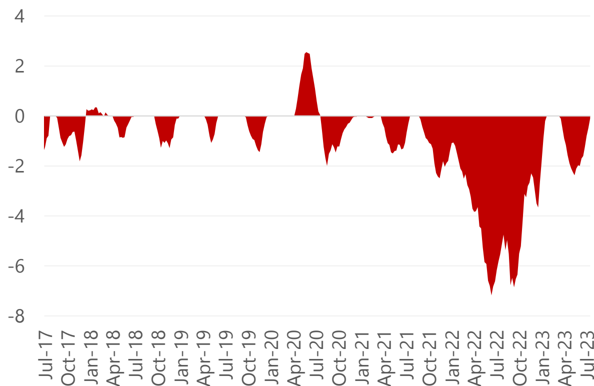
Figure 7 – US Oil Production



Sources: Bloomberg, Santander.

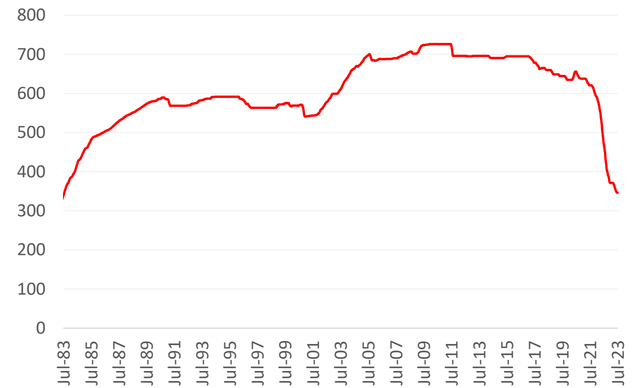
[1] Strategic Petroleum Reserves + Commercial Stocks.

Figure 8 – Weekly U.S. Change in Crude Oil in SPR (Million Barrels)



Sources: Bloomberg, Santander.

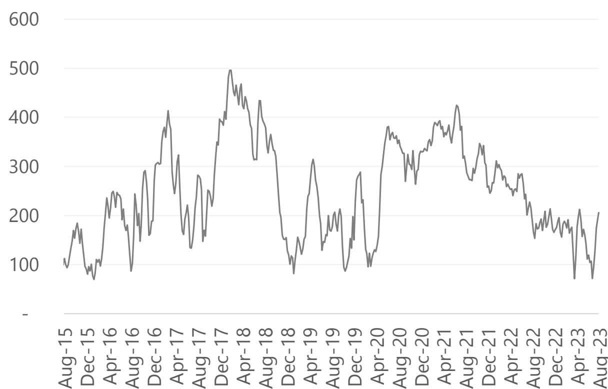
Figure 9 – US Strategic Petroleum Reserves (Million Barrels)



Sources: Bloomberg, Santander.

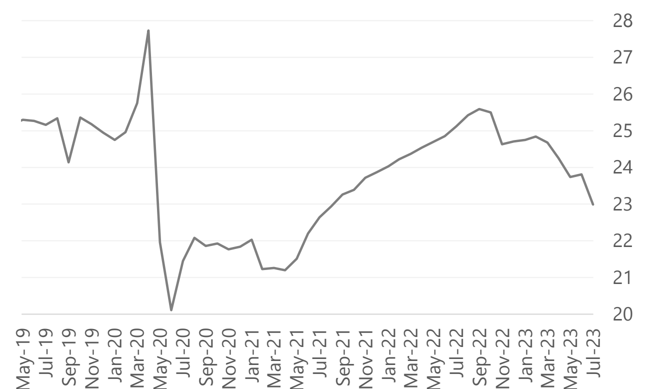
Global market deficit. The global balance of supply and demand for oil is expected to run a deficit from 3Q23 onwards, according to key agency report forecasts, as world oil demand scales to record high levels and supply cuts persist. Yet, they have all raised their global supply forecasts for 2024, even with restrictive monetary police expected to sap global economy growth next year.

Figure 10 – CFTC Crude Oil Managed Money Net Position (thousand)



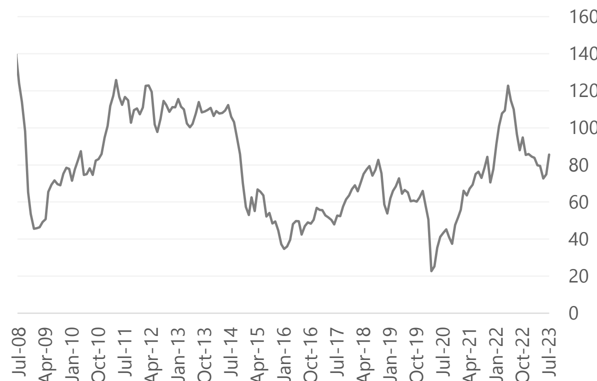
Sources: Bloomberg, Santander.

Figure 11 – OPEC Production (members with quota) (mbd)



Sources: Bloomberg, Santander.

Figure 12 – Brent Crude Oil (USD/bbl)

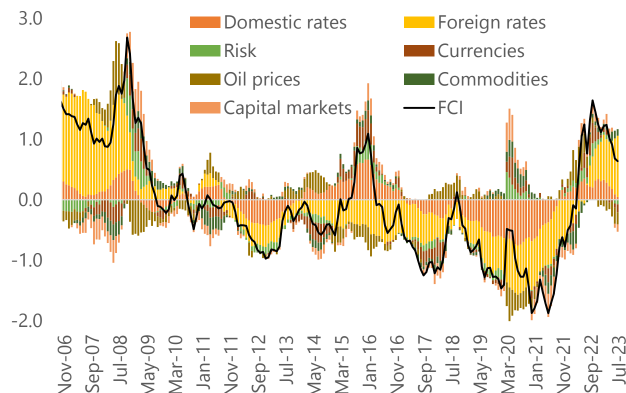


Sources: Bloomberg, Santander.

ii) Oil and Economic Activity

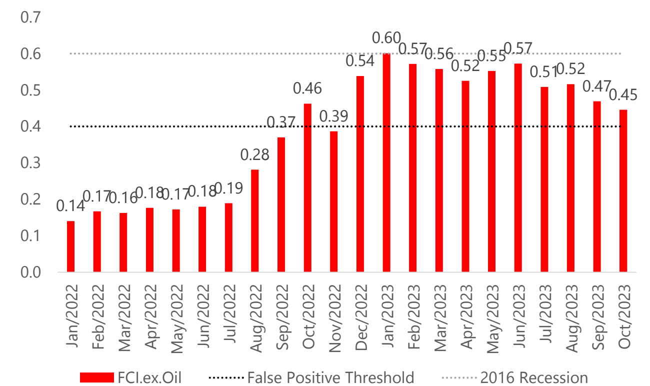
Evidence suggests that higher oil prices tend to negatively impact broad economic activity in Brazil, despite heterogenous effects among sectors. The most straightforward way to measure the potential impact of changes in oil prices is through its impact on financial conditions. Our Financial Conditions Index (FCI), based on the Brazil Central Bank (BCB) methodology, indicates that oil prices have a positive weight on financial conditions, meaning that an increase in oil prices would lead to tighter financial conditions. In addition to that, we use the FCI to calculate the probability of a recession based on a logit model[2]. Not only has our financial conditions index indicated significantly tight levels since mid-2022, but also our recession probability tracker remains above the false positive threshold since December 2022.

Figure 13 – Santander's FCI Proxy



Sources: Bloomberg, BCB, FGV, Santander.

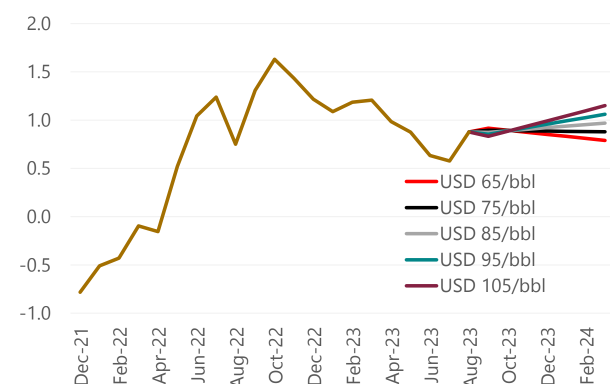
Figure 14 – Recession Probability Tracker Based on FCI



Sources: Bloomberg, BCB, FGV, Santander.

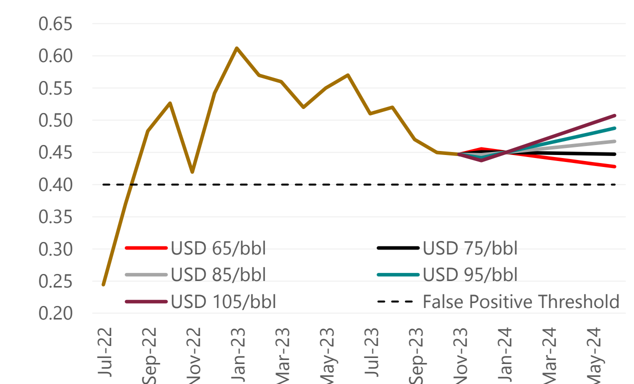
The oil component of our FCI index considers both WTI and Brent oil prices. Since December, this component has gone into negative territory, showing that oil prices have been contributing to easing financial conditions. Looking at our current scenario, as we expect Brent prices to stay close to current levels, we do not see further financial easing coming from oil. Still, we simulated some trajectories for oil prices until 1Q24, and measured the impact of each of them on both financial conditions and our recession probability tracker. Using the USD 85/bbl as our baseline scenario, we proposed four other price levels for Brent prices by the end of 1Q24 (USD 65/bbl, USD 75/bbl, USD 95/bbl and USD 105/bbl). In each of them, we made a monthly linear interpolation for the price trajectory and estimated the equivalent prices for WTI, using the historical correlation between Brent and WTI prices. For each scenario, we estimated the equivalent trajectories for the FCI, considering that commodity prices will follow our baseline scenario and that all other components will remain at August 2023 levels. Finally, we estimated the recession probability for each scenario.

Figure 15 – Santander's FCI Proxy – Oil Scenarios



Sources: Bloomberg, BCB, FGV, Santander.

Figure 16 – Recession Probability Tracker Based on FCI – Oil Scenarios



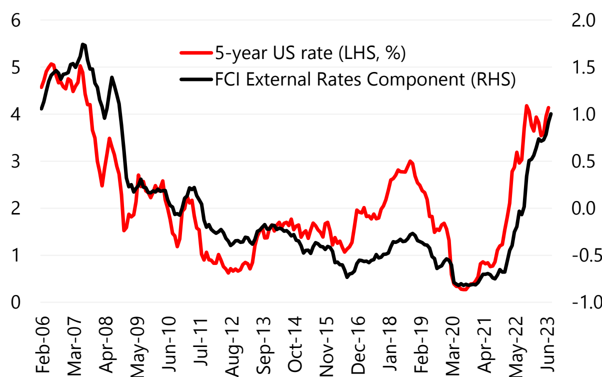
Sources: Bloomberg, BCB, FGV, Santander.

[2] **Santander Brazil Special Report: "*Forecasting Probability of Recession in Brazil with Financial Conditions*"** – January 04, 2023 – Available on: https://bit.ly/Std-special-010423

Figures 17 and 18 show that, even for the largest deviations from our baseline oil trajectory, the changes for both the FCI and recession probability are relatively small. The FCI remains within its recent fluctuation range, as simulations fell between 0.79 and 1.15. Therefore, our recession probability tracker ranged between 0.43 and 0.51 by June 2024. It is important to note that every simulation resulted in a recession probability above the false positive threshold (0.40). Therefore, we can conclude that, even if Brent prices vary as much as USD 20 in this period, this should not significantly boost or drag domestic economic activity until mid-2024.

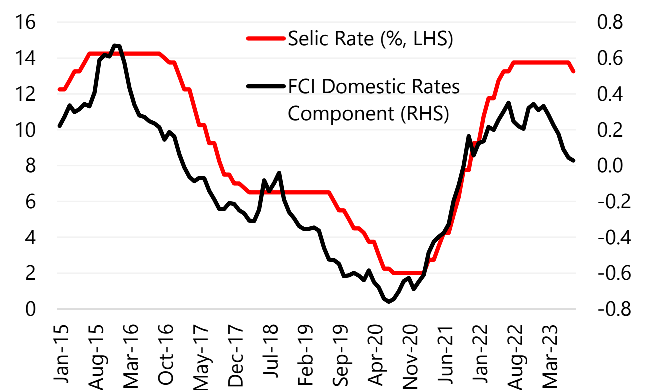
In our view, the main components that can drive a drop in the FCI from now on are the ones linked to rates, both domestic and external. Figure 17 shows that the external rates component remains at high levels, in line with the behavior of 5-year U.S. rates. As for domestic rates, pictured in Figure 18, although there was already some easing in the FCI, we still see some room for additional decreases.

Figure 17 – Santander's FCI Proxy – External Rates



Sources: Bloomberg, BCB, Santander.

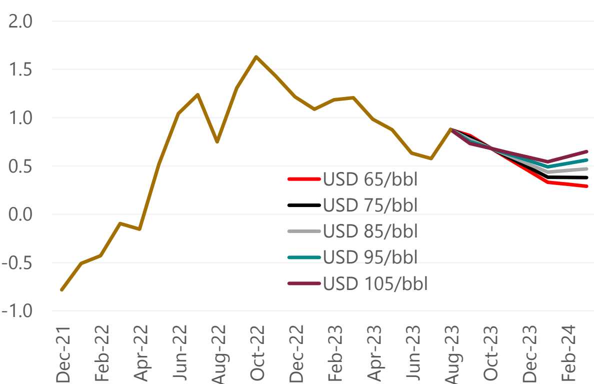
Figure 18 – Santander's FCI Proxy – Domestic Rates



Sources: BCB, Santander.

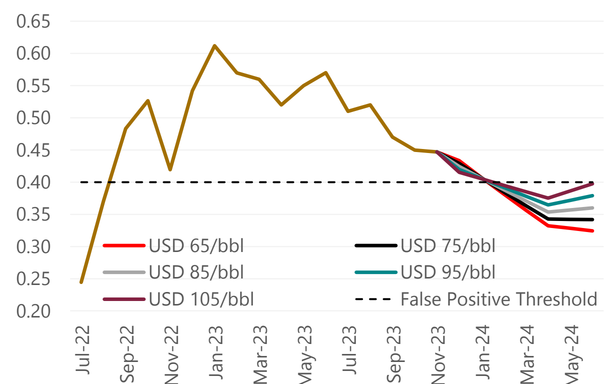
Considering the room for improvement in the rates components of the FCI, we estimate the recession probability tracker with the same scenarios for oil prices, but now considering a gradual 0.5 points reduction in the FCI from September 2023 to January 2024. This reduction was chosen arbitrarily and is only meant to present an illustration of how much rates still weigh on the FCI. Although we expect easing both domestically and abroad, this reduction could have a different magnitude or timing compared to what we present in the exercise, depending on market prices and the next steps in the monetary policy. Still, we find that, for all scenarios, the recession probability falls below the false positive threshold, as highlighted in Figure 20.

Figure 19 – Santander's FCI Proxy – Alternative Scenarios with -0.5 p.p. in FCI



Sources: Bloomberg, BCB, FGV, Santander.

Figure 20 – Recession Probability Tracker Based on FCI – Alternative Scenarios with -0.5 p.p. in FCI



Sources: Bloomberg, BCB, FGV, Santander.

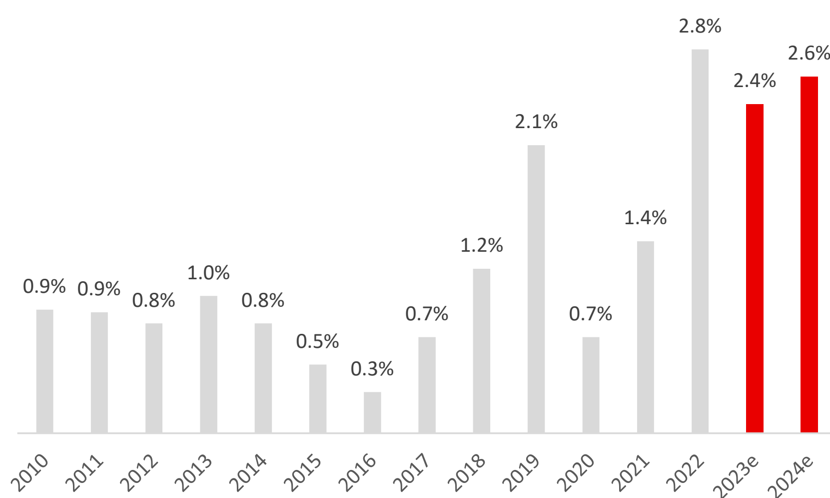
All in all, we evaluate that oil prices should have a limited impact on economic activity at least until 2Q24 – especially considering how much rates can still improve financial conditions ahead and the already high recession probability for the following quarters.

iii) Oil and Fiscal Accounts

For public accounts, oil revenues have been a notably positive factor, especially in 2021-22, and we expect this revenue to continue to support government revenue ahead, especially with the increase in oil production in the pre-salt area. For the short-term, we observed oil procedures playing an important role in public accounts. Last year, we had a BRL200 billion revenue surprise in our initial estimate for January 2022, compared to the final result. About 62% of this surprise was due to the increase in oil prices. We calculate that of the total rise of BRL380 billion in total revenues for the central government, about ~40% was from the jump in oil prices. We can observe in the Figure 21 that the oil sector revenues reached 2.8% of GDP in 2022, compared to an average of 0.9% of GDP between 2011-19.

Our numbers are close to the FGV calculation[3]. FGV also argued that the oil sector was responsible for 83% of the increase in primary revenue in 2022, compared to 68% of the increase in revenue as a proportion of GDP in 2021.

Figure 21 – Central Gov. Primary Revenues Related to Oil Sector



Sources: National Treasury, Brazilian IRS, Santander.

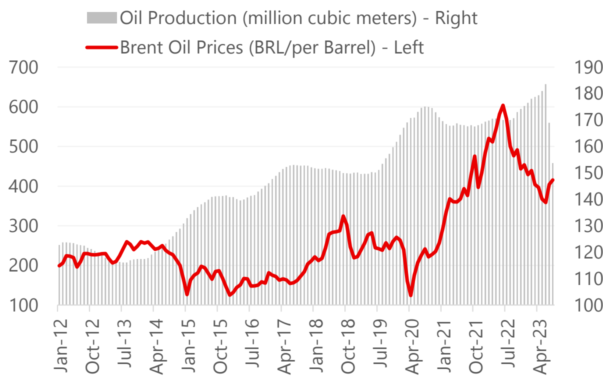
As shown in Figure 22, oil production in Brazil has been increasing, especially pre-salt oil production. In 2021, a depreciated FX rate coupled with higher international oil prices (Brent) led to a robust rise in revenue. For 2022, owing to the factors mentioned above, the revenue from oil continued to increase. For 2023, we observed a softening in the growth, despite the high level and we expect the oil revenues to be an important factor for the fiscal consolidation ahead.

Currently, according to the national oil agency (ANP), Brazil has 14.9 billion barrels of oil equivalent in proved reserves and a daily production of 3.4 million barrels, a number that could rise by ~60% by the end of the decade. We have already included this forecast in our fiscal revenue projections, and this should help the country reach a primary surplus by around 2027-28, according to our estimates.

As we already pointed out last year the fiscal result was better than expected due to the price effect (inflation, commodities, and terms of trade). Figure 23 shows that revenue related to the exploitation of natural resources is close to an all-time high (5.73% registered in December 2022), with a share of 5.3% of total revenue by June 2023, rising more than the total revenues. In addition, the government began to receive more dividends from state-owned companies, and a good part of this was from industries associated with the oil sector.

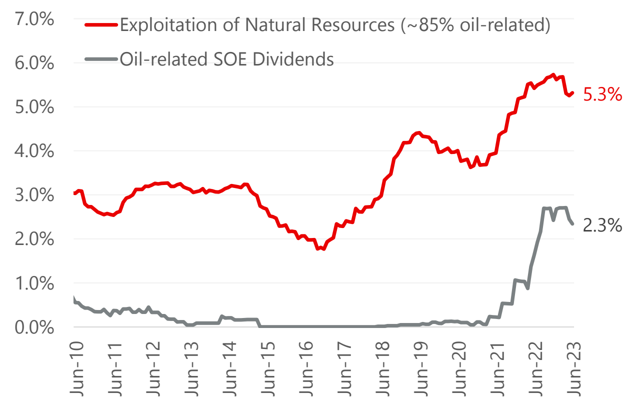
[3] Gobetti (*2022). Os desafios da política fiscal e o impacto do petróleo* (In Portuguese): https://tinyurl.com/zbp334wr

Figure 22 – Brazilian Oil Prices and Production



Sources: MCM, ANP, Bloomberg, Santander.

Figure 23 – Federal Tax Revenues (% of total Revenues)



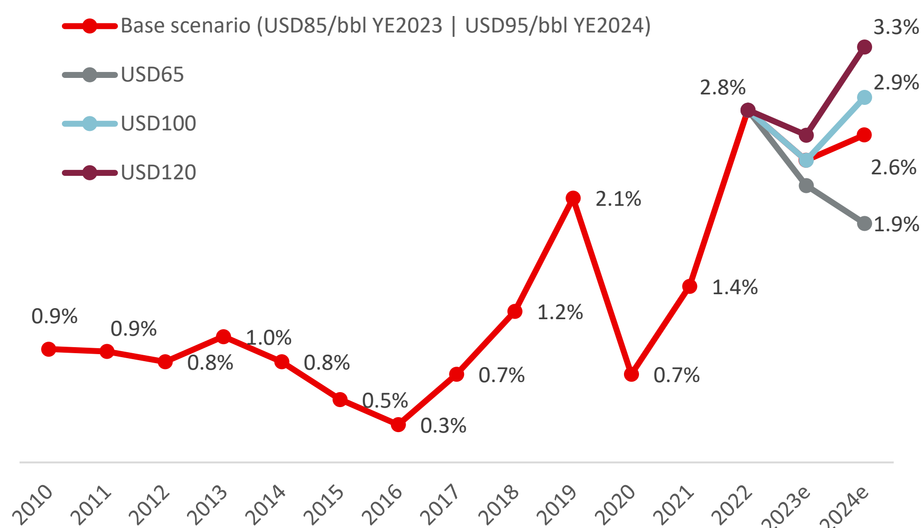
Sources: National Treasury, Santander.

Oil-related SOE dividend income recorded BRL21 billion in 2021, and amounted to BRL56 billion in 2022. For 2023, we estimate close to BRL30 billion in SOE dividend income related to the oil sector. The government included in the 2024 Budget proposal (PLOA) BRL41.5 billion in total dividends from SOE companies. In addition, revenue from the exploration of natural resources, of which ~85% is related to oil royalties, could end the year close to BRL105 billon, after peaking at BRL132 billion last year. PLOA considers this revenue reaching BRL113 billion in 2024, with the oil price at USD74/bb. We estimate it at BRL125 billion for 2024.

Considering the importance of the oil revenues, we estimated the elasticity of the net revenues of the Central Government to the oil prices. As per our calculations, each USD1.0 rise in Brent prices would mean BRL2.3 billion in revenues for the government. Of this, almost ~46% will be transferred to subnational entities. This result is close to the values estimated by the National Treasury in their fiscal forecasts report[4].

In Figure 24, we ran a sensitivity analysis of the oil prices and its impact on the Central Government's primary revenues. As we can observe, if the oil prices drop to USD65 per barrel, despite the increase in production the revenues could drop by 0.7% of GDP. We believe that the oil prices could be an important parameter to observe in the next few years, special considering that the government needs at least 1.5% of GDP in new revenues to comply to the new fiscal framework primary targets.

Figure 24 – Central Gov. Primary Revenues Related to Oil Sector



Sources: National Treasury, Santander.

[4] "For every $1.00 increase, or a 1.3% rise in Brent projected, it would be possible to raise R$ 2.1 billion more, in gross terms, or R$ 1.1 billion more for the Central Government, considering the legal and constitutional transfers."
National Treasury (2023): *Relatório de Projeções Fiscais.* Access it here (In Portuguese): https://tinyurl.com/3mm8uv4y

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