Box 3.1

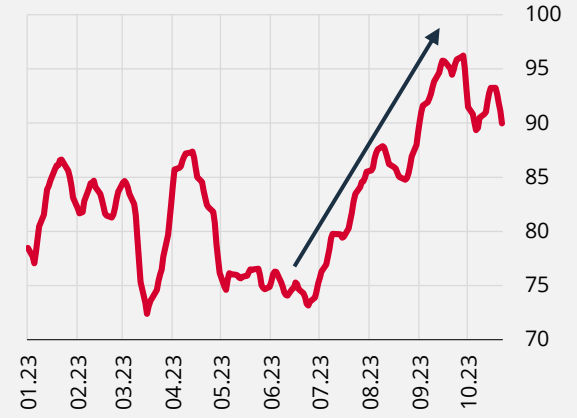
Risks and Uncertainty Band

While generating the medium-term forecasts, various shocks to the economy, external factors, economic policies and the dynamic interactions of macroeconomic quantities are examined in detail. Although the shocks and external factors that will affect the economy in the future cannot be predicted completely, assumptions regarding these factors are made in the light of data and expert judgements. While generating the forecast path for the 2023-IV Inflation Report period, it was considered that uncertainties were high on the assumed paths regarding oil prices, global financial conditions, taxes, administered prices and wage adjustments, which are outside the monetary policy domain. This box discusses the sources of these risks and their impact on forecasts and the range of uncertainty around those forecasts.

Since oil is a physically traded commodity, oil prices are affected by supply and demand conditions, the level of oil stocks and the change in stocks. In this regard, the decisions taken by oil oligopolies such as OPEC+, national strategies, and global policies may create fluctuations in oil prices through supply and demand conditions. On the other hand, oil is not only a physically traded commodity but also a financial commodity that market participants trade in futures markets with a different set of motivations. The increasing financialization of the oil market may cause prices to react more quickly to news flow and geopolitical risks, leading to sudden movements in prices. As a historical phenomenon, numerous oil crises in the past show that oil markets strongly reflect their sensitivity to geopolitical uncertainties (Qin et al., 2020; Zhang et al., 2009). Jiao et al.'s (2023) study also supports the idea that speculative behavior increases in periods when geopolitical risk is high and its impact on the level and volatility of oil prices comes to the fore.

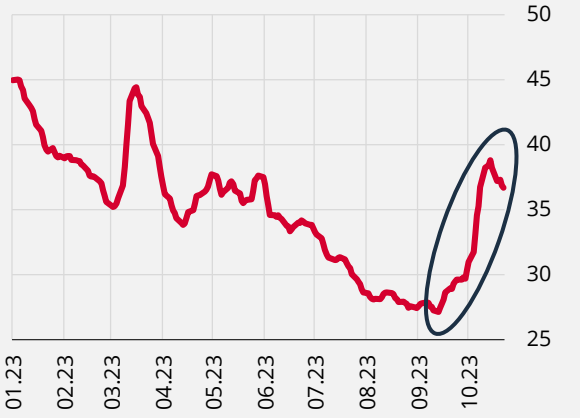
In this context, the tightening in supply conditions resulting from the decisions taken by OPEC+ member countries to reduce production in 2023 and the increase in geopolitical risks lead to a volatile course in oil prices. The price of Brent oil, which was traded around USD 83 per barrel in January 2023, dropped below USD 75 in June. With the effect of developments in supply conditions after this date, prices increased above USD 90 as of September (Chart 1). With the influence of recent geopolitical developments, indicators give signals that the volatile course of oil prices will continue in the coming period (Chart 2).

Chart 1: Brent Oil Prices
(USD Per Barrel, 5-Day Moving Average)



Source: Bloomberg.

Chart 2: Three Month Implied Brent Oil Price Volatility (5-Day Moving Average)



Source: Bloomberg.

The dual structure in the oil market mentioned above and the weak defense of the market against speculative and geopolitical risks, which has become evident recently, make it difficult to achieve satisfactory performance for traditional statistical-based forecasting methods. As a matter of fact, recently the 2024 oil forecast paths of international institutions and organizations are diverging from one another and their forecasts move in a wide range (Table 1). Uncertainties about the course of oil prices in the coming period pose a risk for inflation forecasts. The possibility that oil prices will continue to rise due to geopolitical developments has increased the uncertainty in the forecasts. On the other hand, in an environment where geopolitical developments fade quicker than expected, oil prices may converge to their historical averages, that is, prices may decrease in the coming period.

Table 1: Oil Price Forecasts * (Annual Average)

	2023	2024
EIA	84.1	94.9
Consensus	84.0	87.8
ECB	82.7	81.8
IMF	80.5	79.9

* While EIA, Consensus and ECB forecasts show Brent oil prices per barrel, IMF forecasts show the average of Brent, Dubai and WTI oil forecasts. EIA forecasts are taken from the October "Short-Term Energy Outlook" bulletin, Consensus forecasts are taken from the October Consensus bulletin, ECB forecasts are taken from the European Central Bank's September macroeconomic projections and IMF forecasts are taken from the October "World Economic Outlook".

In addition to oil prices, recent uncertainties regarding global financial conditions remain important. Global financial cycles, the main determinant of which is the monetary policies of advanced economies (Rey, 2015), are of great importance for economies that are commercially and financially connected to the rest of the world, such as Türkiye. The global financial cycle determines capital flows from advanced economies (AE) to emerging market economies (EMEs), the relative position of EME currencies, the course of country risk premiums, and trade and inflation developments through the exchange rate channel. Studies contributing to the literature show that EMEs' interest rates move together with the policy rate in the USA and the contagion in interest rates (Georgiadis, 2016, Caceres et al. (2016) and Dedola et al. (2017)). In this respect, the course of the US bond interest rates through which the US Federal Reserve (Fed) sets policy rates and expectations, which are the fundamental determinants of the global financial cycle, are of great importance for the macroeconomic and financial indicators of a small-open and oil-importing economy like Türkiye. Recent research on the Turkish economy has demonstrated that an external monetary policy shock seen in the Fed policy rates has a significant impact on the Turkish lira, inflation and growth (Tüzün, 2021).

In parallel with the findings and historical realizations, the course of the US bond market in the coming period is important in terms of risk appetite for Turkish lira-denominated assets and therefore the disinflation process. Tightening global financial conditions and deteriorating risk appetite, together with the tight monetary policies implemented by other central banks, make the Turkish lira more sensitive to US interest rates. In addition, this situation creates an environment suitable for an additional capital outflow shock unless the relative situation of an EME such as Türkiye improves, and may also cause an increase in the foreign exchange demand of domestic residents. The increase in borrowing costs from abroad negatively affects firms' balance sheets and causes additional increases in the exchange rate. When these situations are evaluated together and the high exchange rate pass-through in the Turkish economy is taken into consideration, these developments feed the cost channel and keep upside risks on inflation forecasts alive. In addition, fluctuations in global liquidity conditions and risk perceptions cause volatility in the exchange rate, increasing the uncertainty around forecasts. On the other hand, it is considered that as long as Türkiye improves its relative situation with the tight monetary policy implemented and continues to do so with determination, the effects of the deterioration in the global risk appetite on the value of the Turkish lira may be limited. Under a scenario where US bond interest rates will remain tight for a shorter period than expected, it is considered that external inflationary pressures such as foreign monetary policy shocks in the economy will decrease and may also create a downward risk to inflation.

Another element that has recently come to the fore outside the control of monetary policy is administered price, tax and wage adjustments. Uncertainties regarding the timing, frequency and amount of these regulations pose risks to inflation forecasts. Shocks that are considered temporary during normal inflationary periods of the economy, such as tax and administered price increases and minimum wage regulation, may have longer-lasting negative effects than expected through expectations and inflation inertia in a high inflation environment. In addition to their direct effects on the inflation level, administered price and tax adjustments may also negatively affect expectations and pricing behavior by increasing the volatility of inflation. In addition, it becomes difficult to identify the effects of wage regulations on inflation due to cost and demand increases during high inflation periods.

Additionally, during periods of high inflation, an effect that we can call 'mathematical' or mechanical also occurs. Volatility in monthly inflation for any given month may have a larger impact on annual inflation through a multiplier effect if inflation in the other months are high. Therefore, volatilities in monthly inflation create uncertainty in both directions on annual inflation. Estimates are based on a framework in which the monetary policy stance will respond not to the primary effects of these external factors on consumer inflation, but to their possible secondary effects that may be observed in inflation expectations or pricing behavior. In addition, since increases in oil prices and uncertainties regarding global financial conditions may negatively affect the current account balance and its financing, macro financial risks are also considered when making a policy response. Scenario analyses that include all these risks show that uncertainties regarding the inflation path have increased temporarily for reasons specific to 2024. Considering all these effects, it was decided to expand the uncertainty range on medium-term forecasts.

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