

Box 2.2

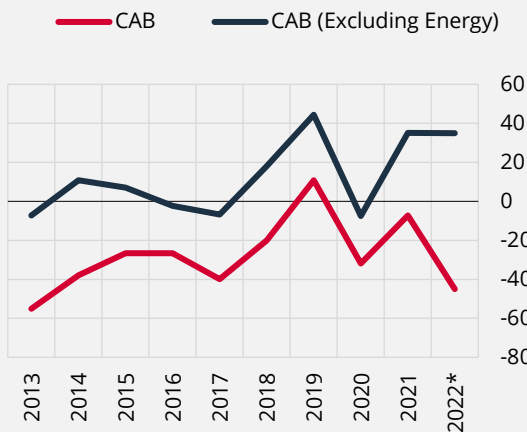
Recent Developments in Energy Imports and Diversification Policies for Energy Supply

It is important for price stability that the current account balance is maintained at sustainable levels. The rapid increase in energy imports in 2022 was the main factor behind the increase in the current account deficit. This box examines the developments in energy trade last year and discusses the possible impacts of energy supply diversification policies, which will be launched in the near term and planned to be implemented in the medium term, on the current account balance.

Looking at the last decade, it is seen that the current account balance posted a deficit except for 2019, while, excluding energy, it recorded a surplus in general, displaying a more positive outlook (Chart 1). Although this stylized fact is a natural consequence of Türkiye's being a net energy importer, 2022 marks a year in which the negative impact of the energy balance on the current account balance was much higher than it was in previous years. As of November 2022, the 12-month cumulative current account balance excluding energy stood at a level similar to the end of 2021, however including energy, the current account deficit rose from USD 7.2 billion in 2021 to USD 45 billion in November 2022. Therefore, it is important to understand the sudden rise in the energy trade deficit when evaluating the current account developments of 2022.

The energy trade deficit reached its historically highest level of USD 81.1 billion in 2022 up from USD 42.4 billion in 2021 (Chart 2). This increase in the energy deficit was a result of the almost doubling of energy imports, despite the significant increase in energy exports. While the ratio of energy imports to national income was 5% on average between 2013 and 2021, it rose to a historical high of 11% in annualized terms, as of the third quarter of 2022.

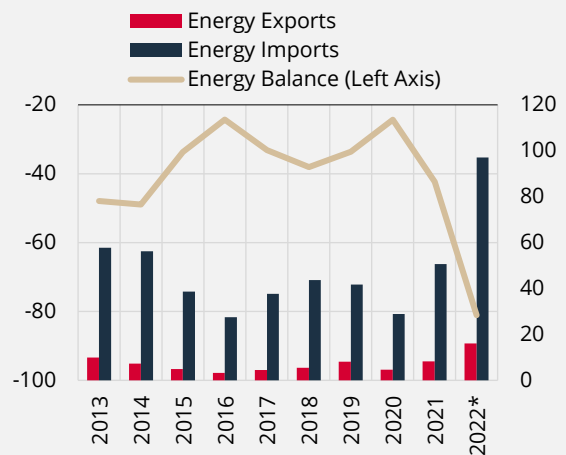
Chart 1: Current Account Balance
(USD Billion)



Source: CBRT.

* 12-month cumulative data as of November 2022.

Chart 2: Energy Trade Balance (USD Billion)



Source: TURKSTAT.

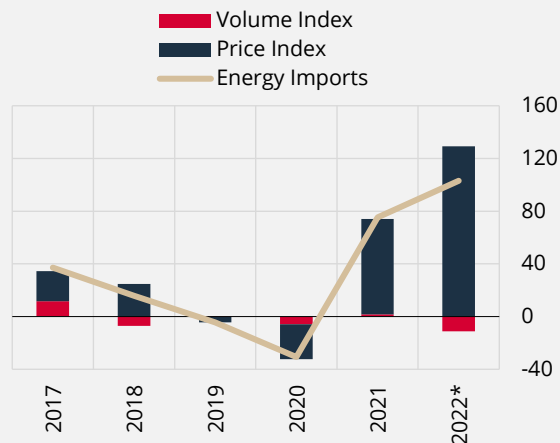
* Provisional data for December 2022.

A breakdown of import changes over the years into value and volume components suggests that volume changes are limited, and the changes in energy imports are mostly driven by price fluctuations (Chart 3). The reason for the rapid increase in energy imports in 2022 was the sudden increase in energy prices. In the January-November period of 2022, nominal energy imports increased by 103.1%, due to the surge in energy import price by 129.2%, despite the 11.2% decline in the energy import volume, when compared to the same period of the previous year.

In 2021 and 2022, there were rapid and consecutive increases in energy prices. Although these increases took place in successive periods, they differed from each other in terms of their drivers. While the base effect arising from low energy prices during the 2020 pandemic was the main source of

price increases in 2021, the 2022 price hikes were mostly due to geopolitical developments. This divergence between 2021 and 2022 was also reflected in the differences across subgroups of energy price changes (Chart 4). Energy prices in 2021, which recovered in the post-pandemic period, presented a more homogeneous outlook in oil, natural gas and coal, whereas the spike in natural gas prices at 310% in 2022, was well above the increase in oil and coal prices.

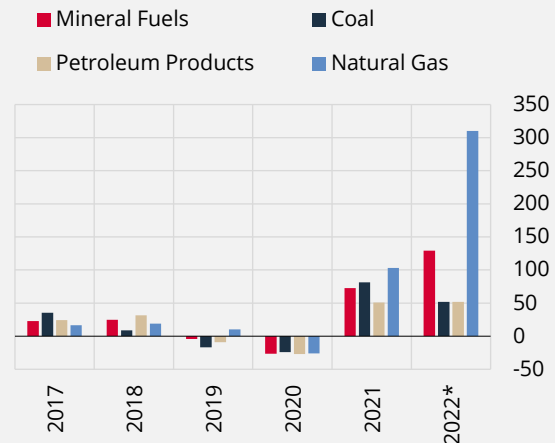
Chart 3: Price and Volume Changes in Energy Imports (Annual % Change)



Source: TURKSTAT.

* The year-on-year change in the January-November average of 2022.

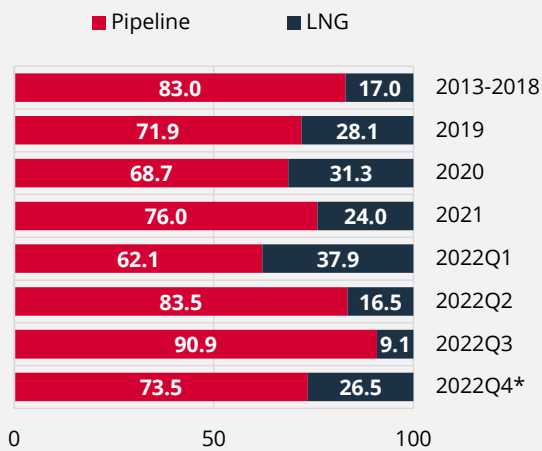
Chart 4: Price Changes in Energy Imports (Annual % Change)



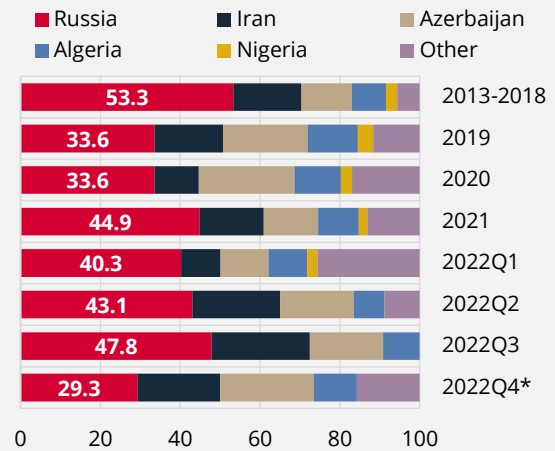
Source: TURKSTAT.

* The year-on-year change in the January-November average of 2022.

It is observed that the current account balance is significantly affected by the rapidly rising energy prices together with geopolitical risks. This reveals the importance of ensuring diversity of sources in energy imports and developing domestic sources of energy. An analysis of the distribution of natural gas imports by type over the past decade suggests that the share of liquefied natural gas (LNG), which was 17% on average between 2013 and 2018, has increased in recent years and reached 24.5% as of the last quarter of 2022 (Chart 5). The increase in the share of LNG in natural gas imports is also mirrored on the country distribution. Since natural gas imports in the form of LNG enable the supply of natural gas from alternative countries without a pipeline, the increase in the share of LNG in the last decade has also increased the diversification in terms of supplier countries. The share of Russia, the largest supplier of Türkiye's natural gas imports, which was 53.3% between 2013 and 2018, decreased significantly in the following years. With the diversification of energy supply, Russia's share decreased to 29.3% as of the last quarter of 2022, while the share of other countries increased significantly (Chart 6).

Chart 5: Natural Gas Import Shares by Type (%)

Source: Energy Market Regulatory Authority.
* As of October 2022.

Chart 6: Natural Gas Import Shares by Source Country (%)

Source: Energy Market Regulatory Authority.
* As of October 2022.

For the security of natural gas supply, in addition to increasing the type and country diversification, it is also important to provide time flexibility through storage. Ensuring time flexibility by means of storage can reduce the negative effects of price fluctuations, as well as creating a buffer against disruptions in energy supply. In this context, the capacity of the natural gas storage facility in Silivri, which was 3.2 billion cubic meters, was increased to 4.6 billion cubic meters last year, while the current storage capacity of the facility located in Lake Tuz, which is 1.2 billion cubic meters, is expected to reach 5.4 billion cubic meters in 2025. The current storage capacity of Silivri and Lake Tuz facilities corresponds to approximately 10% of annual consumption, and is expected to reach 15-16% of annual consumption with the planned increase, under the assumption that the energy need would increase in line with economic growth.

In addition to increasing the type, source and time flexibility in imports, reducing foreign dependency in energy is another way to ensure energy supply security. The recent natural gas reserve discoveries in the Black Sea basin also offer the opportunity to increase the utilization of domestic sources in energy consumption. Considering that domestic natural gas production of 10 million cubic meters per day (approximately 3.5 billion per year) is set to start in the second quarter of 2023, it is estimated that this domestic production can meet 6% of annual natural gas consumption and reduce energy imports by approximately USD 2 billion in the last three quarters of the year. Under a scenario where the daily production capacity would be increased and the total annual production would reach 15-20 billion cubic meters in the medium term, it is estimated that the coverage ratio of domestic sources to annual natural gas consumption may rise to around 30%, decreasing energy imports by about USD 11-12 billion under the assumption of current price levels.

Increasing the share of domestic sources in energy consumption is also possible through the expansion of renewable energy sources in Türkiye. While the share of renewable energy in electricity generation has soared since 2010, the share of fossil fuels has decreased (Table 1). According to the National Energy Plan of the Ministry of Energy and Natural Resources, while a significant increase, especially in the share of solar energy is foreseen within the next two years, more than half of the electricity production is aimed to be produced using renewable energy by 2035. In addition to renewable energy, electricity generation with nuclear power as a source of another domestic source is planned to start in 2023. The share of nuclear energy in electricity generation is expected to rise to 4.9% within two years.

Table 1: Shares of Electricity Generation Sources in Türkiye (%)

	2010	2015	2020	2021	2022*	2023**	2025**	2030**	2035**
Thermal	73.6	67.8	57.7	64.2	58.3	58.0	56.6	52.7	45.3
Coal, Natural Gas, Other***	73.6	67.8	57.7	64.2	58.3	57.9	51.7	44.5	34.2
Nuclear	0.0	0.0	0.0	0.0	0.0	0.1	4.9	8.2	11.1
Renewable	26.4	32.2	42.3	35.8	41.7	42.0	43.4	47.3	54.7
Hydraulic	24.5	25.6	25.5	16.7	21.6	21.4	21.5	19.4	17.3
Wind	1.4	4.5	8.1	9.4	10.0	9.8	10.1	11.9	17.7
Solar	0.0	0.1	3.6	4.2	4.4	5.1	7.4	11.5	16.5
Other	0.5	2.0	5.1	5.5	5.8	5.8	4.4	4.5	3.2

Source: Ministry of Energy and Natural Resources.

* Provisional.

** Program.

*** Fuel-oil, diesel oil, LPG etc.

The energy import bill, which increased by 91.6% year-on-year to USD 97.1 billion in 2022, is expected to decrease in 2023 in parallel with the expected easing in energy prices. Under the assumption that the GDP growth would be 5% in 2023 in line with the MTP targets, and that the energy demand has unit growth elasticity, the energy bill for 2023 is calculated as USD 81.6 billion under a scenario where energy prices would decrease by 20%, and as USD 71.4 billion under a scenario where energy prices would decrease by 30%. In other words, in case of a decrease in prices by more than 20% and under the assumption of 5% growth, the estimations indicate that energy imports in 2023 will remain below the USD 85 billion announced in the MTP. While the above-mentioned domestic energy sources that are set to be utilized this year will affect energy imports downwards, a likely decrease in electricity generation by hydraulic energy due to a drought may pose an upside risk to energy imports.

All in all, while the current account surplus excluding energy remained flat in 2022, the price-driven increase in energy imports had a negative impact on the headline current account balance. The effects of fluctuations in energy prices on the current account balance reveal the importance of ensuring diversification in sources, supplier countries and time flexibility for energy supply security, as well as reducing import dependency in energy through higher utilization of domestic resources. The positive contributions of the discoveries in the Black Sea basin, the efforts to increase the natural gas storage capacity and the targets for increasing the share of renewable energy to the current account balance will potentially continue at an increasing scale.