

## IV. Financial Sector

**While TL commercial loans have been the main driver of the upswing in TL loans across 2022, the acceleration in loan growth has been curbed by the macroprudential measures taken since April 2022.** The demand for TL corporate loans remains strong due to firms' increased need for working capital and stock financing caused by rising commodity prices, but the growth of SME, export and investment loans, along with their share in total loans, diverge favorably thanks to macroprudential policies. This will support the share of sustainable components in the composition of growth, stronger employment and a narrower structural current account deficit. Consumer loan growth has been moderate thanks to the measures taken by the BRSA. The spread between the policy rate and TL commercial loan rates was closed following the new policy requirement of maintaining securities based on TL commercial loan rates, which was introduced to enhance the effectiveness of the monetary transmission mechanism.

**The favorable outlook for the banking sector's asset quality is improving further driven by all related indicators.** The decline in the NPL ratio is visible across all loan types. The ratio of NPL collections to the NPL additions and NPL balance are above their historical averages and improving further. The downtrend in the ratio of closely monitored (Stage 2) loans as well as structured loans is maintained. Moreover, a significant portion of Stage 2 loans consists of loans that are not overdue loans. The decline in the probability of migration from standard loans to Stage 2 loans and from Stage 2 loans to NPL also supports the banks' outlook for asset quality. Banks' prudence in setting aside high levels of provisions for all loan classes since the pandemic limit risks on asset quality.

**The banking sector's FX external debts continue to decline, while the maintenance of strong FX liquidity buffers increases banks' resilience to liquidity shocks.** The weak FX loan appetite of real sector firms led to an increase in FX loan closures, pushing the banks' FX liquidity upwards, which caused external borrowing needs to decline. Meanwhile, tightening in global financial conditions and geopolitical risks pushed external borrowing costs upwards. Despite the banks' diminishing external debt, high levels of FX liquidity render them resilient against potential shocks in providing external financing. Short-term liquidity indicators such as the liquidity coverage ratio of the sector and the loan/deposit ratio, which is an indicator of stable funding, improve further.

**Banks' interest rate risk is limited, and their balance sheet is healthy enough to manage interest rate shocks.** Both the share and maturity of banks' fixed-rate securities have increased in their balance sheets. Meanwhile, variable-rate loans continue to grow within banks' loan portfolios. The regulations introduced regarding security maintenance against loans and deposits have had a limited impact on balance sheets. While most banks already hold FX long positions, the number of banks holding a long position is rising further and their asset size shares remain high.

**The profitability performance of banks supports the sector's capital adequacy, and excess capital buffers are getting stronger.** The sector's excess capital buffers above the regulatory minimum contributes to the management of risks that may spillover into the whole system against possible shocks. The sector's strong profitability performance is attributable to the loan-deposit interest margin, CPI-indexed securities and the volume effect arising from loan growth. While the positive asset quality outlook supports profitability, the increase in banks' free provisions to build up precautionary buffers limits profitability.

## IV.1 Credit Developments and Credit Risk

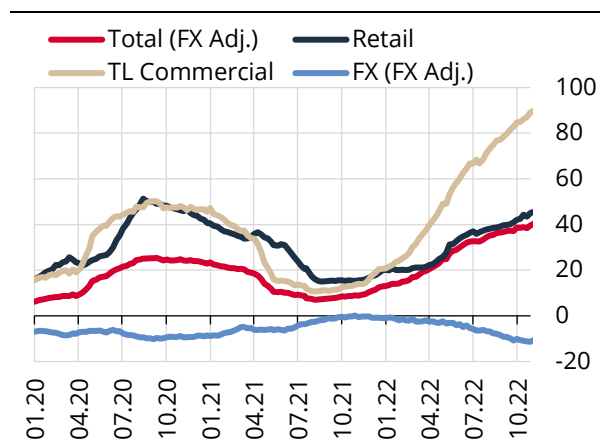
### IV.1.1 Credit Growth

The effects of the macroprudential policy set, strengthened to ensure that commercial loans feed into economic activity in line with intended purposes, are closely monitored. Following the macroprudential regulations introduced in May 2022 and thereafter, the credit composition evolved in the targeted direction and the acceleration in total loan growth rates slowed.

In the current Report period, annual FX-adjusted loan growth rate reached 39.6%. Loan growth continued to be mainly driven by TL corporate loans, while FX loans in FX-adjusted terms contracted by 11.4%. Annual growth rate in TL corporate loans reached 89%, indicating that non-financial corporates have significantly increased their TL borrowing since the last quarter of 2021 (Chart IV.1.1).

In particular, the effects of the macroprudential policies implemented for commercial loans that accelerated in the second quarter of 2022 started to become discernible. Annualized 13-week loan growth, which better reflects recent lending tendencies, indicates that the acceleration in loan growth has been contained by macroprudential regulations. While the annualized 13-week growth for TL corporate loans rose to 140% in May, the growth of loans excluding SME, tradesman, agriculture, export and investment loans declined to 80% following the macroprudential measures. Due to the tightening measures on the loan-to-value ratio of housing loans and maturities of general-purpose loans in June, retail loan growth also decelerated to 45% (Chart IV.1.2).

**Chart IV.1.1: Annual Loan Growth (FX-adjusted, %)**

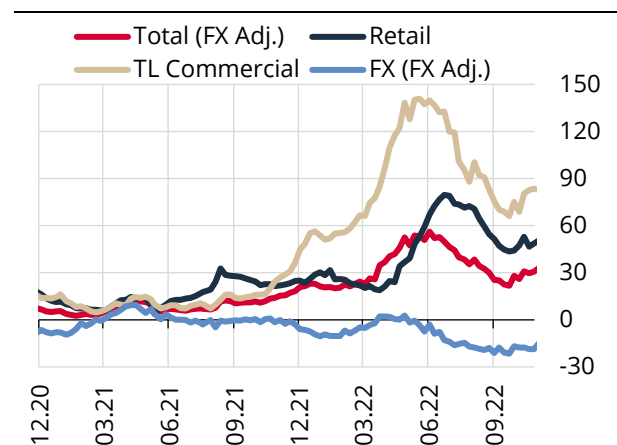


Source: CBRT

Last Observation: 28.10.22

Note: FX-indexed loans are included in FX loans. FX-adjusted loan growth is the ratio of the sum of the yearly change in TL loans and TL equivalent of change in FX loans, measured by multiplying one-year FX (basket) loan change with the one-year average basket exchange rate, to the total credit balance a year ago.

**Chart IV.1.2: 13-Week Loan Growth (Annualized, %)**



Source: CBRT

Last Observation: 28.10.22

Note: FX-indexed loans are included in FX loans. FX-adjusted loan growth is the annualized ratio of the sum of the 13-week change in TL loans and TL equivalent of change in FX loans, measured by multiplying 13-week FX (basket) loan change with the 13-week average basket exchange rate, to the total credit balance 13 weeks ago.

Of the TL 2.1 trillion increase in the total loan stock from end-2021 to 28 October, TL 1.7 trillion stemmed from TL loans. This increase in the TL loan stock was driven by TL commercial loans with a contribution of TL 1.3 trillion. In the first ten months of 2022, monthly average net disbursements in TL commercial loans amounted to TL 136.2 billion, which is 8.5 times higher than the average of the same period of 2021. The parity-adjusted FX corporate loans in the same period decreased by a monthly average of USD 1.4 billion (TL 23.6 billion) (Table IV.1.1). Firms' propensity to pay off their maturing FX loans in favor of TL loans also caused the TL corporate loan growth to remain strong.

**Table IV.1.1: Corporate Loans Monthly Changes (FX-Adjusted, TL Billion, January-October Average Monthly Change)**

	2021	2022	Ratio
<b>TL Corporate</b>	<b>16.1</b>	<b>136.2</b>	<b>8.5</b>
TL SME	6.3	63.4	10.1
TL Large-Scale Firms	9.8	72.8	7.4
<b>FX Corporate</b>	<b>1.6</b>	<b>-23.6</b>	<b>-14.5</b>
FX SME	1.2	-3.7	-3.0
FX Large-Scale Firms	0.4	-19.9	-51.5
<b>Total Corporate</b>	<b>17.7</b>	<b>112.6</b>	<b>6.4</b>

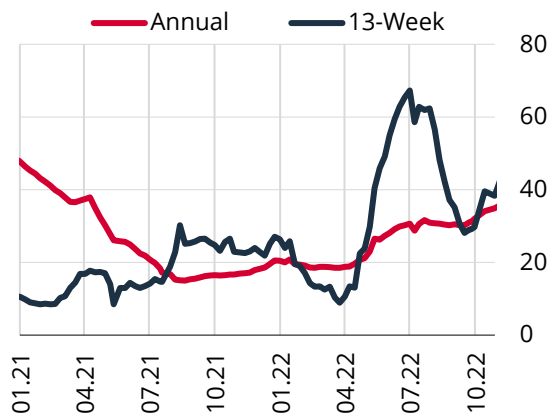
Source: CBRT

Last Observation: 10.22

Note: The table shows the average monthly changes of the corporate loan stock in the January-October period. FX changes are computed by multiplying the monthly FX loan change calculated in basket terms by the monthly average basket rate. The ratio is calculated by dividing 2022 values by 2021 values.

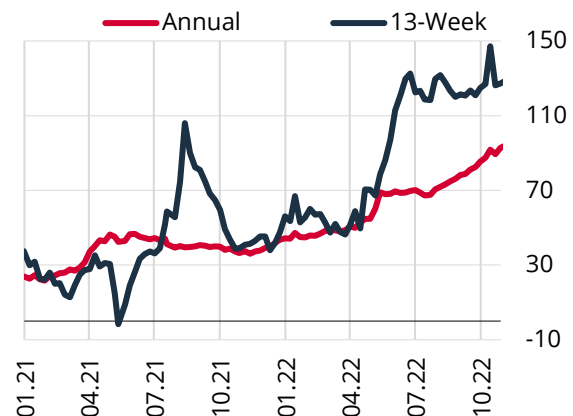
### The moderate course in the retail loan growth continues.

Following the BRSA's June decision to reduce the general maturity limit for general-purpose loans above TL 100,000 from 24 months to 12 months, the 13-week general-purpose loan growth rates declined significantly (Chart IV.1.3). In fact, the 13-week general-purpose loan growth, which was close to 70% in early July, has declined to 30% in recent weeks due to the measures taken. The brisk course in the annual growth of personal credit card balances continues thanks to inflation-driven increased consumption demand, the ease of credit card utilization enabled by digitalization and upward revisions in limits. The increase in the minimum payment rate to 40% for credit cards with limits above TL 25,000 in June did not have a significant slowing effect on personal credit card growth. On the other hand, the policy rate cuts-driven decline in the reference interest rate, which is used to determine credit card interest rates, is considered to have had an effect in the increase in 13-week growth rates (Chart IV.1.4).

**Chart IV.1.3: General-Purpose Loan Growth (%)**

Source: CBRT

Last Observation: 28.10.22

**Chart IV.1.4: Credit Card Growth (%)**

Source: CBRT

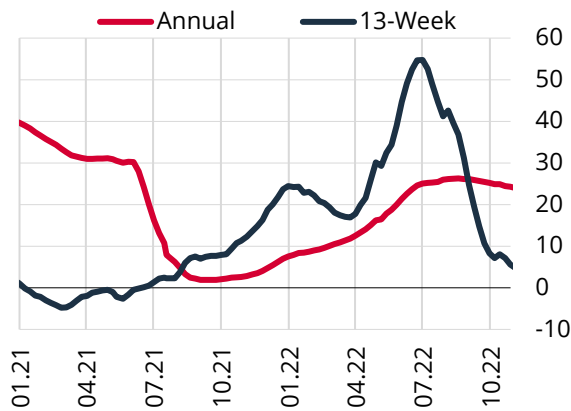
Last Observation: 28.10.22

Note: Annual series show annual loan growth while 13-week series show annualized 13-week growth.

Housing loan growth, which was buoyant in the first half of the year due to house price developments and housing demand for investment purposes, decelerated significantly in June due to the BRSA's differentiation of maximum loan-to-value ratios according to house prices and the slowdown in credit campaigns by state banks following the BRSA's tightening of these ratios (Chart IV.1.5). In February 2022, the amendments made in the thresholds used in determining the loan-to-value ratio in vehicle loan utilization and the increase of demand due to the expectation that vehicle prices would rise further led to a significant acceleration in vehicle loans in the first half of the year. While the 13-week growth in vehicle loans rose rapidly until June, it plunged in the following period due to problems in vehicle supply, tightening

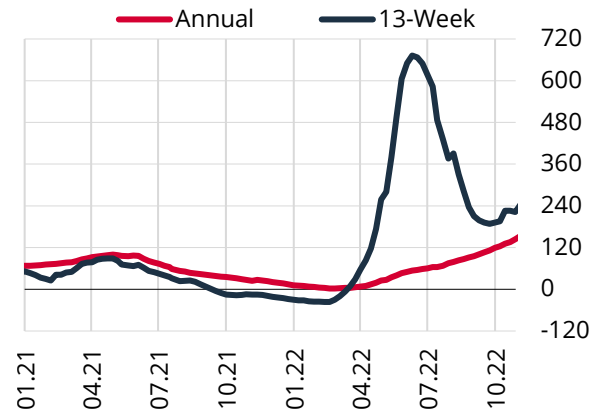
credit conditions and the Ministry of Trade’s regulation in August restricting used car sales. Annual vehicle loan growth, on the other hand, remains strong due to the low base effect from last year (Chart IV.1.6).

**Chart IV.1.5: Housing Loan Growth (%)**



Source: CBRT Last Observation: 28.10.22

**Chart IV.1.6: Vehicle Loan Growth (%)**



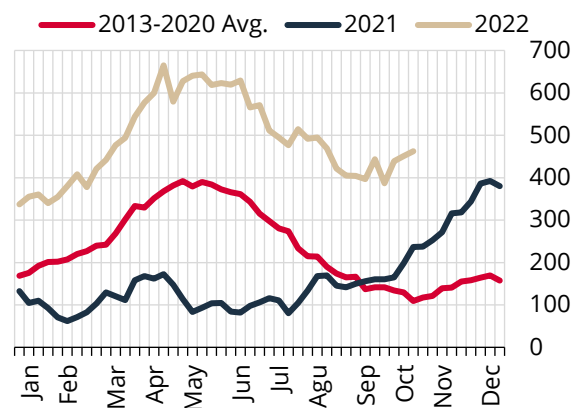
Source: CBRT Last Observation: 28.10.22

Note: Annual series show annual loan growth while 13-week series show annualized 13-week growth.

**While the change in inflation-adjusted commercial loan stock has hovered above its historical average, the change in inflation-adjusted consumer loan stock has receded below its historical average in recent months.**

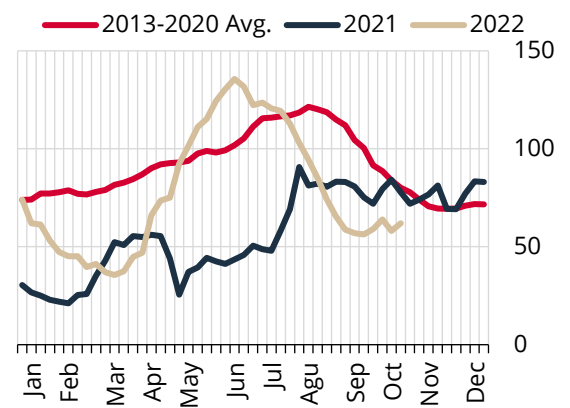
Inflation-adjusted net utilizations in TL commercial loans have been above their historical averages since the last quarter of 2021, and until May 2022, hovered well above the long-term average as well as the level in the same period of 2021. Amid a number of macroprudential measures announced in May, changes in inflation-adjusted TL loan balances started to decline in the summer months but remained above the long-term average (Chart IV.1.7). The change in real consumer loan stock, which was close to its historical average in the previous Report period, rose well above the average in May and June, but fell below the average due to the BRSA’s measures on housing and general-purpose loans in June (Chart IV.1.8).

**Chart IV.1.7: TL Commercial Loan Stock (3-Month Stock Change, In Real Terms, TL Million)**



Source: CBRT Last Observation: 28.10.22

**Chart IV.1.8: Consumer Loan Stock (3-Month Stock Change, In Real Terms, TL Million)**



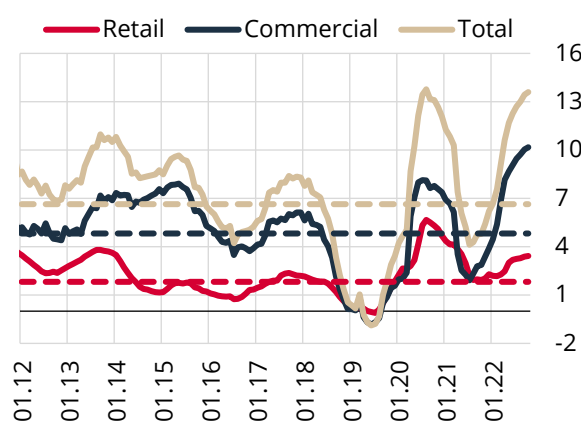
Source: CBRT Last Observation: 28.10.22

Note: The three-month change in stock loan balances is deflated by the PPI. The PPI of January 2013 is indexed at 100.

### Alternative indicators suggest that commercial loans grew faster than their long-term trends, while retail loans grew close to their long-term trends.

How the credit growth, which is critical for financial stability, is moving relative to its historical trend can be monitored using alternative indicators. One such indicator is net credit utilization, defined as the ratio of the change in stock loan balances to GDP in a one-year period. An analysis of this indicator for corporate loans reveals that the course above the historical average has continued since February 2022. This is attributed to the elevated level of commodity prices, which led to a growing need for working capital for companies, and firms' sticking to their preference for inventory investments. The net credit utilization in retail loans, on the other hand, has recently hovered close to its historical average (Chart IV.1.9). The second indicator that is monitored is the standardized average value of eight series denoting the deviation of loans from their long-term trends, obtained by applying four different filtering methods to two different credit indicators (credit/GDP and logarithm of real credit). Accordingly, the indicator obtained for total loans has remained in positive territory since November 2021, but has converged to its long-term average following macroprudential measures (Chart IV.1.10).

**Chart IV.1.9: Net Credit Utilization / GDP (%)**

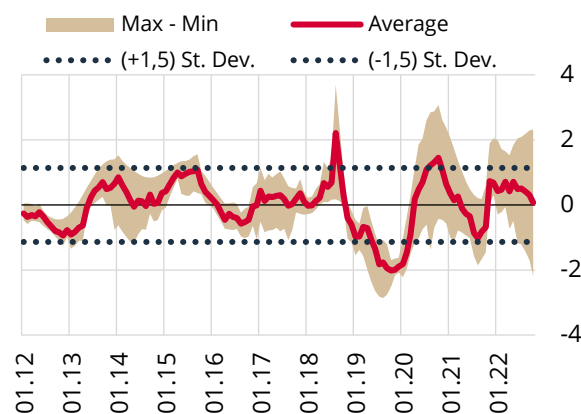


Source: CBRT

Last Observation: 10.22

Note: Net credit utilization is calculated as the ratio of the annual change in the nominal loan stock to the annualized GDP. To adjust for the exchange rate effect of FX loans, the monthly FX (basket) loan change is converted to TL equivalent with the average basket rate of the relevant month. CBRT estimate is used for the GDP of July-October 2022. Dashed lines indicate the average of the series for the 2012-2019 period.

**Chart IV.1.10: Total Credit Gap (Standardized Value)**



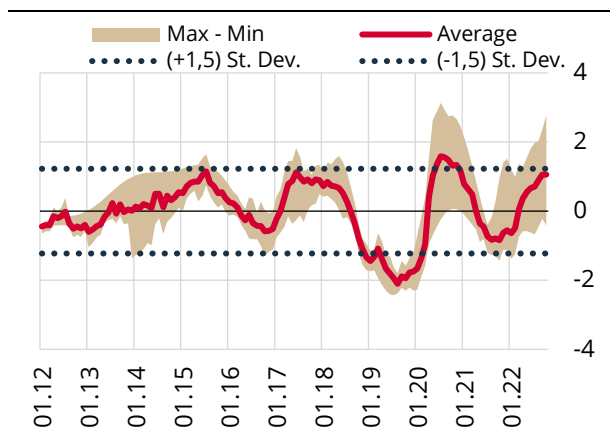
Source: CBRT

Last Observation: 10.22

Note: Credit gap was calculated by applying four different filtering methods to the indicators of credit/GDP and logarithm of real credit. Inflation adjustment is done by adding the monthly changes in the stock credit balance deflated by the CPI to the stock balance of the previous month. The mean of the standard Z scores of eight credit gap indicators shows the average series, and the standard deviation of this mean shows the standard deviation series. Values above deviation (+1.5) indicate excessive credit expansion, while values below deviation (-1.5) indicate excessive credit contraction. The "Max-Min" series shows the gap between the maximum and minimum standard values of eight credit gap indicators. For technical details on the method, see the Financial Stability Report of November 2019, Special Topic V.1.

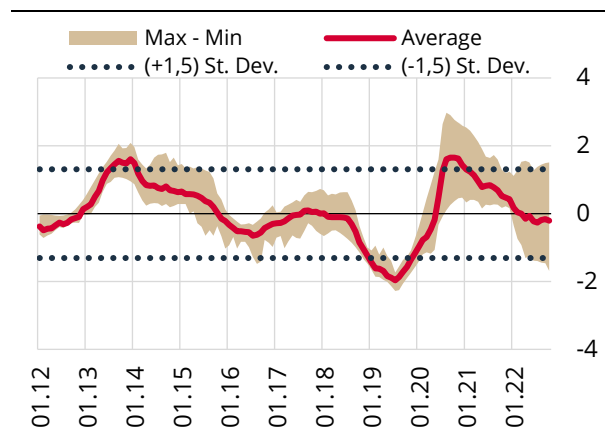
TL commercial loans are effective in the continuation of the positive course of total loans despite the narrowing in the total credit gap. Since March 2022, the credit gap for TL commercial loans has continued to widen at a reduced pace in positive territory (Chart IV.1.11). Having approached excessive expansion territory (+1.5 standard deviation), the TL commercial credit gap decelerated somewhat following the regulation in August that capped non-targeted TL commercial loans. The retail credit gap hovered close to zero thanks to the macroprudential policies (Chart IV.1.12).

**Chart IV.1.11: TL Commercial Credit Gap (Standardized Value)**



Source: CBRT Last Observation: 10.22  
 Note: See the note under Chart IV.1.10.

**Chart IV.1.12: Retail Credit Gap (Standardized Value)**

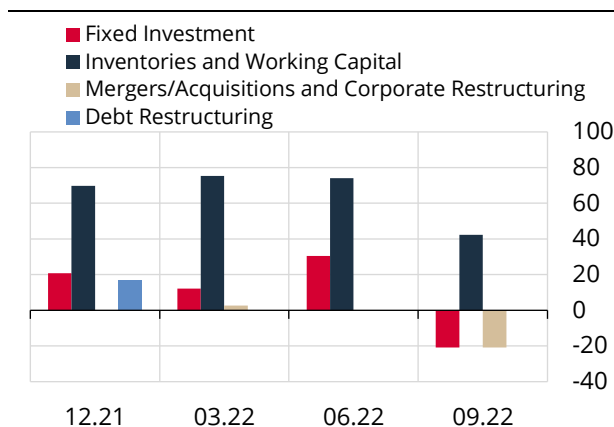


Source: CBRT Last Observation: 10.22

**TL commercial loan demand continues to be driven by declining but still high commodity prices, which keep firms' working capital needs in place, and inventory investments.**

Global commodity prices slowed and exchange rate volatility declined significantly in the summer months, which fostered trade credit volumes and maturities among firms, and balanced the need for banking loans. Nevertheless, the need for working capital and inventory investment continues to determine firms' loan demand in the current Report period (Chart IV.1.13). In addition to bank loans, firms can find alternative sources of financing through borrowing instruments such as checks and bills from other firms they have business relations with. An analysis of the inflation-adjusted volume of checks and protested bills reveals that inter-firm financing opportunities, which narrowed in the first quarter of 2022 due to rapid price changes, shortening maturities and the shift from credit purchases to cash purchases, have begun to recover since June (Chart IV.1.14).

**Chart IV.1.13: Factors Affecting Firms' Loan Demand (Net % Change)**



Source: CBRT BLTS Last Observation: 09.22

Note: The banks surveyed evaluate all items compared to the previous quarter. While zero is the neutral level indicating no change compared to the previous period, a value greater than zero points to an increase compared to the previous period, and a value below zero indicates a decrease compared to the previous period.

**Chart IV.1.14: Cheques and Protested Bills (TL Billion, Inflation Adjusted)**



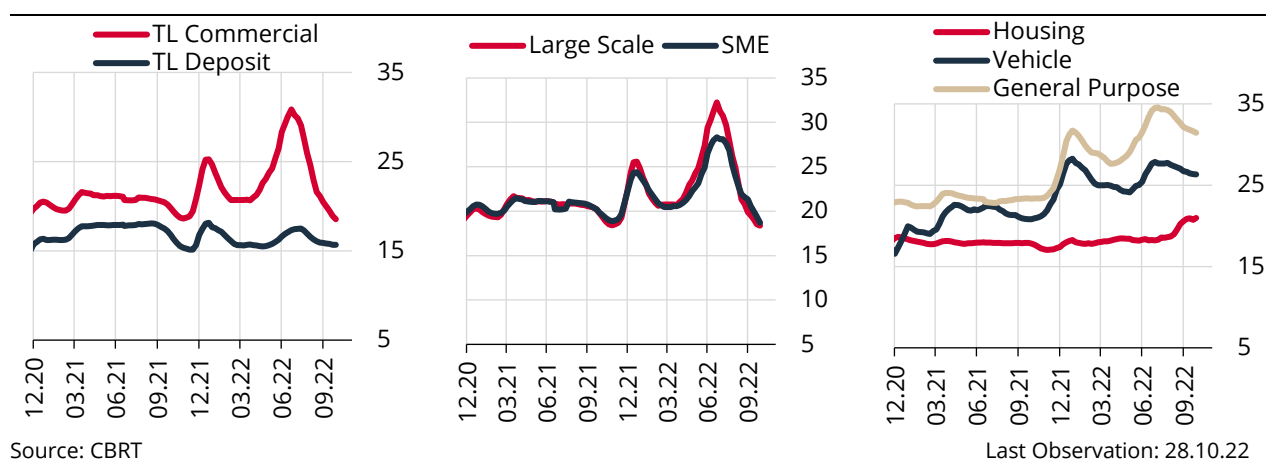
Source: Risk Center, CBRT Last Observation: 09.22

Note: Three-month moving average sum of CPI-deflated volume of cheques submitted to banks and protested bills collected by banks. The CPI of January 2003 is indexed at 1.

## TL loan rates are on the decline in response to policy rate cuts and macroprudential regulations that stepped in.

TL commercial loan rates decreased significantly from August on due to the CBRT's policy rate cuts as well as the regulation introduced in August regarding the maintenance of securities based on TL commercial loan rates. Despite the decline in funding costs as public banks curbed mortgage lending at low rates, housing loan rates have recently seen an uptick. Meanwhile, the decline in vehicle and general-purpose loan rates remained quite limited compared to TL commercial loan rates and of a similar scale as in funding costs (Chart IV.1.15).

**Chart IV.1.15: TL Interest Rates (4 WMA, %)**



Source: CBRT

Last Observation: 28.10.22

Note: TL commercial loan rates excluding interest rates for corporate credit cards, legal person overdraft accounts and zero-interest loans. Interest rates for real person overdraft accounts are excluded from general-purpose loan rates. Interbank deposit rates are not included in TL deposit rates.

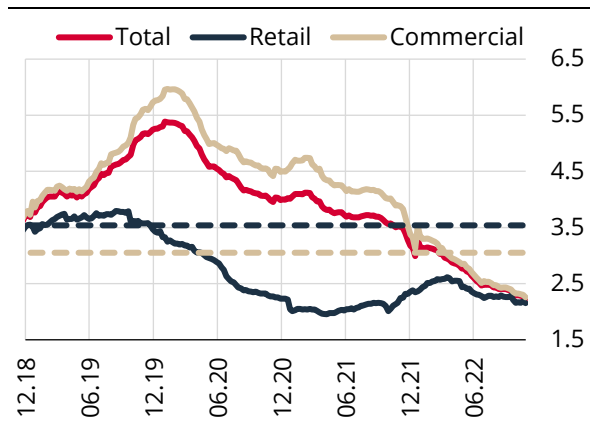
## IV.1.2 Credit Risk

### The favorable outlook for the banking sector asset quality continues with further improvements led by all relevant indicators.

The total NPL ratio of the banking sector declined further in the current Report period, with the NPL ratio receding to 2.2% (Chart IV.1.16). The downtrend in the NPL ratio continues on the back of nominal loan growth and the moderate course of NPL additions, and this improvement is broad-based across all sub-types of loans. Among factors contributing to the change in the total NPL ratio, the growth of TL loans and the increase in the TL equivalent of FX loans due to exchange rate movements pulled the total NPL ratio down. In this period, while the NPL balance was flat, the decline in the USD equivalent of FX loans pushed the NPL ratio up (Chart IV.1.17).

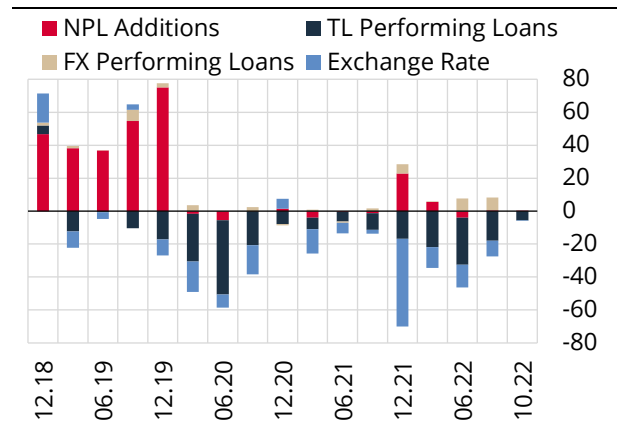
Corporate NPL ratios dropped across all sizes of firms, with large-scale firm and SME NPL ratios falling to 1.8 and 3.2%, respectively. Thus, large firm and SME NPL ratios dropped below the long-term averages. The decline in the SME NPL ratio was driven by the decline in the SME NPL balance, as well as the increase in the loan balance since April 2022 on the back of adjustments in risk weights and RR regulations that support SME loan growth. The large-scale corporate NPL ratio, on the other hand, declined due to the growth of nominal loan balance faster than NPL balances. Similar to the corporate NPL ratio, retail loan NPL ratios declined across all sub-types and retail loan NPL ratios also fell below the long-term averages. NPL ratio of general-purpose loans, increased slightly due to migrations to NPLs as the forbearance measure on loan classifications unwound in September 2021, however this trend reversed and the NPL ratio of general-purpose loans declined to 3.6%. The June 2022 increase in the minimum payment rates of credit cards with a limit above TL 25 thousand did not have a negative impact on the NPL ratio of personal credit cards. The credit card NPL ratio declined to 2.0%, and credit card interest rates also had a positive impact on debt service performance. Housing and vehicle loans, which have lower NPL ratios due to their collateralized nature and regulations that limit credit risk, such as loan-to-value ratio, were down to 0.2 and 0.4%, respectively (Chart IV.1.18).

**Chart IV.1.16: NPL Ratios (%)**



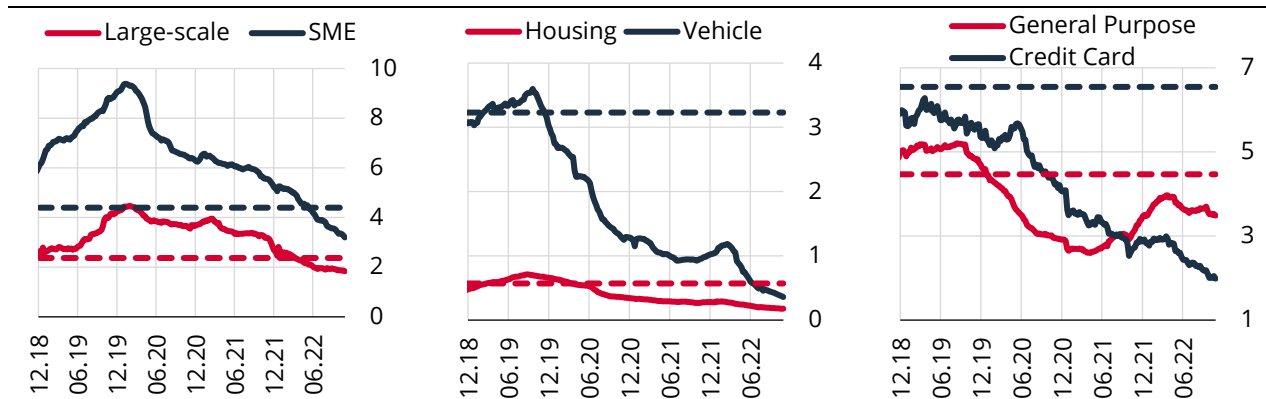
Source: CBRT Last Observation: 28.10.22  
 Note: Dashed lines indicate the average of the relevant series for the 2012-2019 period.

**Chart IV.1.17: Contributions to the Change in NPL Ratios (Quarterly Total Contributions, bps)**



Source: CBRT Last Observation: 28.10.22  
 Note: Contributions show the total contribution amount in the relevant quarter, and the last column includes the contribution total from 30 September to 28 October. For technical details on the method, see Financial Stability Report of November 2018, Box IV.1.1.

**Chart IV.1.18: NPL Ratios in the Breakdown of Credit Types (%)**

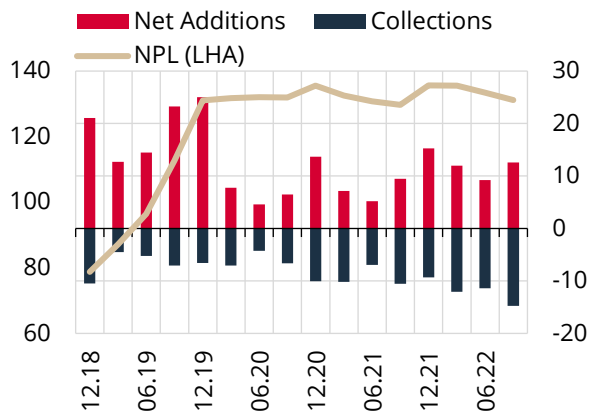


Source: CBRT Last Observation: 28.10.22  
 Note: Dashed lines indicate the average of the relevant series for the 2012-2019 period.

**Retail and corporate NPL additions remained mild in 2022, but the ratio of NPL collections to NPL balance has exceeded the long-term averages.**

Net additions to corporate NPLs, which had increased slightly in the last quarter of 2021 due to the expiry of the forbearance measure for loan classification, decreased in the following two quarters (Chart IV.1.19). Collections from corporate NPLs, on the other hand, followed a course similar to that of previous periods, but increased in the third quarter of 2022, which contributed to the decline in the NPL balance in the current Report period. The ratio of corporate NPL collections to NPL net additions hovers above its long-term average due to the decline in NPL net additions driven by the loans extended to improve firms' cash flows during the pandemic. The ratio of corporate NPL collections to NPL balance, which had declined in the early stages of the pandemic, increased due to the strong course of collections and write-offs, rising above the long-term average again. Sound economic activity and high asset prices are considered to have supported NPL collections (Chart IV.1.20).

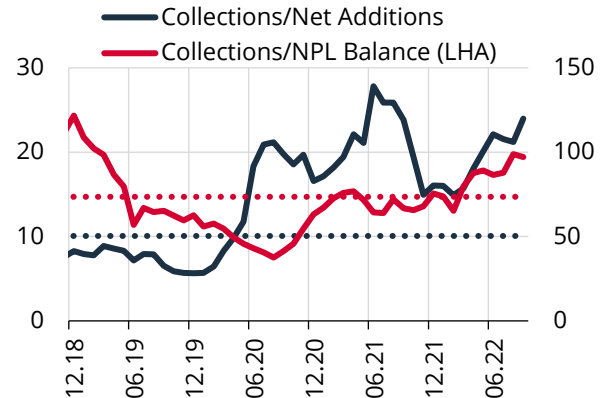


**Chart IV.1.19: Components of Corporate NPL Balance (TL Billion)**


Source: CBRT

Last Observation: 09.22

Note: Series for collections and net additions are based on quarterly totals. Net additions are calculated by subtracting the migrations to performing loans and write-offs from NPL additions.

**Chart IV.1.20: Corporate NPL Collection Rates (%)**


Source: CBRT

Last Observation: 09.22

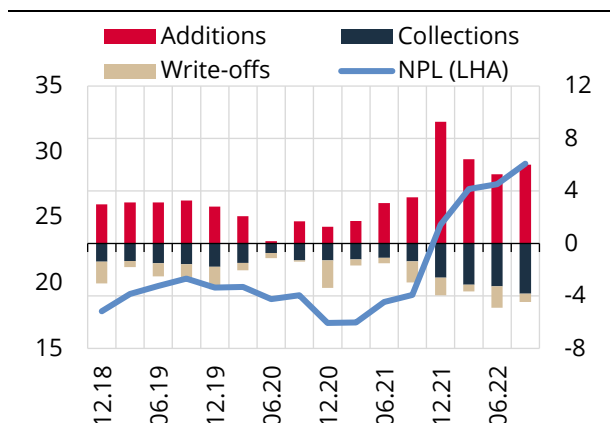
Note: The Collections/NPL Balance ratio is calculated as the ratio of six-month total NPL collections to six-month average NPL balance. The Collections/Net Additions ratio shows the ratio of six-month total NPL collections to six-month total net NPL additions. Dashed lines indicate the average of the relevant series for the 2014-2019 period.

Having increased more than corporate NPL additions in the last quarter of 2021 due to the expiration of the forbearance measure, additions to retail NPLs accounted for less in the following two quarters (Chart IV.1.21). The ongoing increase in retail NPL collections also supports the favorable outlook for retail loan NPL balances. In fact, the ratio of retail NPL collections to NPL balance and the ratio of NPL collections to NPL additions are trending upwards and stand above their long-term averages (Chart IV.1.22).

**While the ratio of Stage 2 loans continues to improve, a significant portion of these loans consists of loans without overdue payment.**

The share of Stage 2 loans in total loans has been trending down in 2022 overall (Chart IV.1.23). This is attributed to the decline in migrations from Stage 1 loans to Stage 2 loans, as well as the strong credit growth. Banks have been using the IFRS-9 standard for the classification of loans since 2018, and even if the loans are not past due, they classify them as Stage 2 if their models suggest a significant increase in credit risk. Looking at loan delinquency, 81% of total loans consist of loans classified as Stage 2 although they are not in arrears since they entail a significant increase in credit risk according to IFRS-9 models. While this ratio is 91% in corporate loans, it stands at 63% in retail loans. The decline in the Stage 2 loan ratio in the current Report period stems from the fall in loans without overdue payment (Chart IV.1.24). The upward revision of economic growth forecasts that banks use in IFRS-9 models are considered to be effective in this decline.

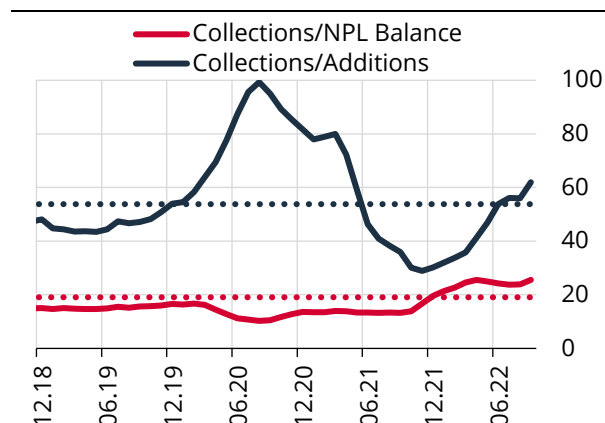
**Chart IV.1.21: Components of Retail NPL Balance (TL Billion)**



Source: CBRT Last Observation: 09.22

Note: Series for collections, additions and write-offs are based on quarterly totals. Amounts migrated to performing loans are deducted from NPL additions.

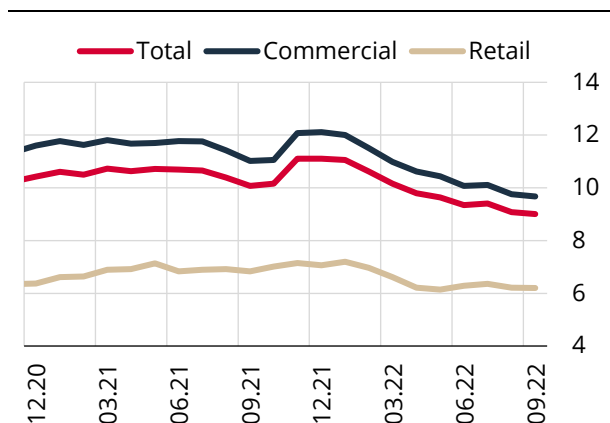
**Chart IV.1.22: Retail NPL Collection Rates (%)**



Source: CBRT Last Observation: 09.22

Note: The Collections/NPL Balance ratio is calculated as the ratio of six-month total NPL collections to six-month average NPL balance. The Collections/Additions ratio shows the ratio of six-month total NPL collections to six-month total NPL additions. Dashed lines indicate the average of the relevant series for the 2014-2019 period.

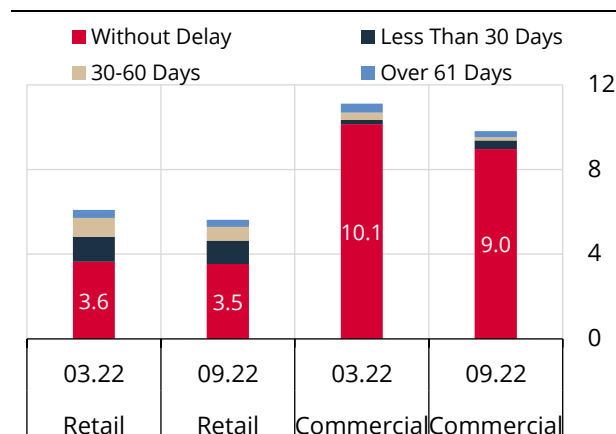
**Chart IV.1.23: Ratio of Stage 2 Loans (%)**



Source: CBRT Last Observation: 09.22

Note: Series show the ratio of Stage 2 loans to gross loans.

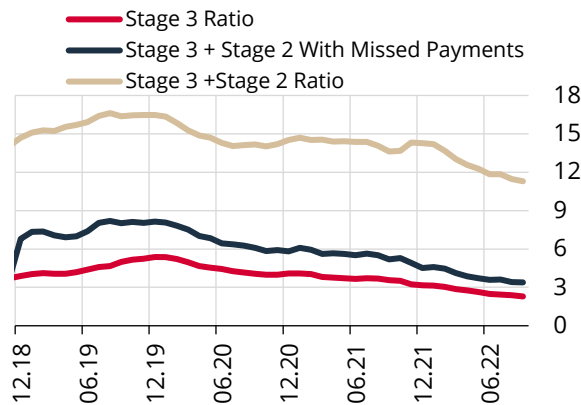
**Chart IV.1.24: Ratio of Stage 2 Loans by Number of Days in Arrears (%)**



Source: CBRT Last Observation: 09.22

Note: Series show the ratio of Stage 2 loans to gross loans by number of days in arrears.

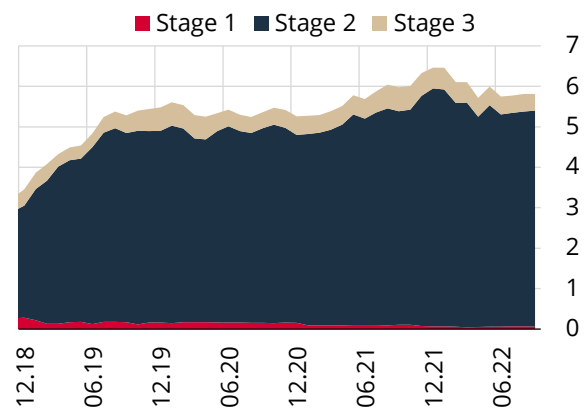
A Stage 2 loan can turn into an NPL when a debtor's payment performance deteriorates. Thus, monitoring the ratio of the sum of Stage 2 loans and NPL loans to gross loans provides a holistic approach to monitoring potential credit risk. As suggested by this indicator, the said ratio has decreased by 297 bps to 11.3% since end-2021 (Chart IV.1.25). This improvement was driven by the NPL balance remaining flat and the decline in Stage 2 loans without overdue payment, as well as loan growth. Since a significant portion of Stage 2 loans consists of loans without overdue payment, the ratio of overdue Stage 2 loans and NPL loans to gross loans would give a clearer picture of riskier loans. According to this indicator, the share of risky loans in banks' gross loans declined by 113 bps compared to end-2021 and stood at 3.4% as of September.

**Chart IV.1.25: Asset Quality Outlook (%)**

Source: CBRT

Last Observation: 09.22

Note: Asset quality indicators are proportioned to gross loans.

**Chart IV.1.26: Restructured Loans (%)**

Source: CBRT

Last Observation: 09.22

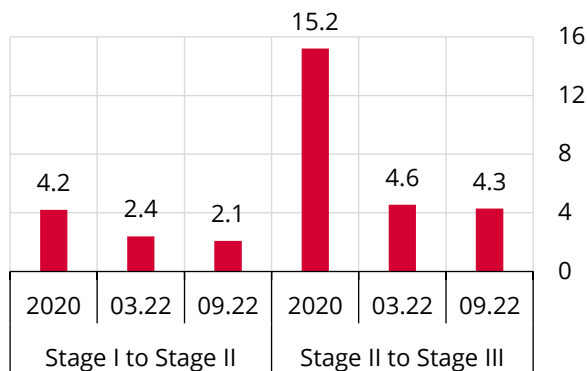
Note: Series show the ratio of restructured loans to gross loans. Stage I: Ratio of restructured loans monitored under standard loans. Stage II: Ratio of restructured loans under close monitoring loans.

Loan restructurings contribute to improving the payment performance of a borrower whose cash flow is temporarily impaired and who is experiencing payment difficulties. In the current Report period, the ratio of restructured loans to gross loans decreased to 5.8% on the back of the loan growth (Chart IV.1.26). Of the loans restructured, 92% are in the Stage 2 category, 7% are classified as NPL, and a very small portion is in the Stage 1 category. This indicates that the banking sector prudently monitors restructured loans under Stage 2 and NPL categories.

### Transition probabilities to Stage 2 and NPLs continue to decline, and banks act prudently in provisioning.

Transition probabilities, particularly from Stage 1 to Stage 2, and from Stage 2 to NPLs are monitored to keep track of the changes in credit risk. For commercial loans, these ratios are 2.1% and 4.3%, respectively, in September 2022 (Chart IV.1.27). These ratios are behind both the 2020 average and the last reporting period levels. The decline in transition probabilities has helped the NPL balance to remain flat and Stage 2 loans without overdue payment to decrease. Supportive loan policies of the pandemic period are thought to have improved firms' and households' cash flow, thereby reflecting positively on banks' asset quality performance. Banks' post-pandemic tendency towards higher provisioning has prevailed in the current Report period, with provision ratios for loans in Stage 1, Stage 2 and NPL categories reaching 0.8%, 22.2% and 84.1%, respectively (Chart IV.1.28). Besides, the provisioning ratio for restructured Stage 2 loans is at 25.5%, which is above that of other Stage 2 loans (17.5%). This shows that banks remain more prudent in provisioning for restructured loans, which limits banks' asset quality risks.

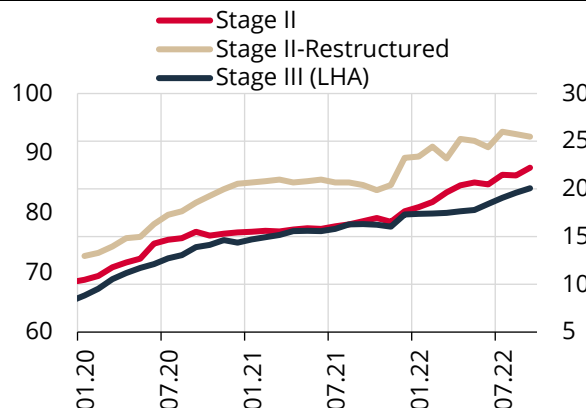
**Chart IV.1.27: Transition Probabilities**  
(Commercial Loans, %)



Source: CBRT Last Observation: 09.22

Note: The transition probability from Stage 1 to Stage 2 is estimated as the ratio of the loan amount migrating from Stage 1 to Stage 2 a year ago to the Stage 1 loan balance a year ago. The transition probability from Stage 2 to Stage 3 is estimated as the ratio of the loan amount migrating from Stage 2 to Stage 3 a year ago to the Stage 2 loan balance a year ago. Analysis was performed for commercial loans whose tax IDs were reported.

**Chart IV.1.28: Expected Loss Provisioning Ratio (%)**

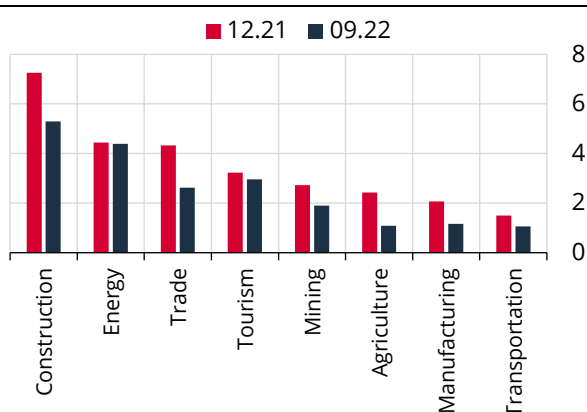


Source: CBRT Last Observation: 09.22

Note: Expected loss provisioning ratio is the ratio of the expected loss provision of the loan in the related category to the loan amount in that category.

A sector-based analysis of NPL and Stage 2 loan ratios shows a differentiation in sectors' asset quality outlook. The NPL ratios of energy and construction sectors hit by exchange rate developments of 2018, and the tourism sector stricken by full lockdowns and travel restrictions during the pandemic continue to hover above sector averages. On the other hand, the NPL ratio of agriculture, manufacturing and transportation services performed quite well compared to the sector. The NPL ratios of all sectors declined compared to end-2021, with the most significant improvement recorded in the construction and trade sectors (Chart IV.1.29). Similar to their NPL ratios, the Stage 2 loan ratios of tourism, energy and construction are above sector averages. Meanwhile, Stage 2 loan ratios of all sectors, tourism and trade in particular, declined compared to end-2021 (Chart IV.1.30). In 2022, tourism revenues exceeded their pre-pandemic levels, which is believed to have a positive effect on the sector's asset quality.

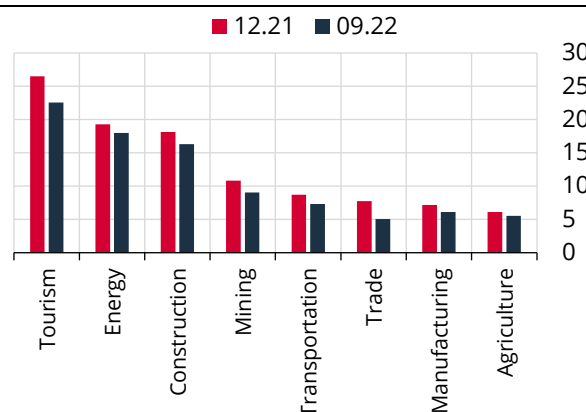
**Chart IV.1.29: NPL Ratios by Sectors (%)**



Source: CBRT Last Observation: 09.22

Note: Sectors are listed in a descending order based on their NPL and Stage 2 loan ratios at the end of 2021.

**Chart IV.1.30: Stage 2 Loan Ratios by Sectors (%)**



Source: CBRT Last Observation: 09.22

## Box IV.1.I:

### Effects of Macroprudential Policies for Commercial Loans

#### Macroprudential Policies

The growth rate and composition of commercial loans, as well as the use of financial resources in line with intended purposes within the economy are at the center of the targeted loan policy backed by macroprudential measures introduced as of the second quarter of 2022. Accordingly:

In April 2022, the reserve requirements (RRs), applied to the liability side of the balance sheets of banks and financing firms, started to be applied to the asset side as well. TL-denominated commercial cash loans were subject to RRs, with the exclusion of those extended to SMEs, tradesmen, the public sector and financial institutions, export and investment loans, agricultural loans and loans extended through commercial credit cards (targeted loans). Accordingly, (i) for commercial loans, which had been extended in four-week periods since 1 April 2022, RRs started to be maintained at a ratio of 10% of extended loans for the same period, and (ii) for banks with a loan growth rate above 20% by 31 May 2022 compared to 31 December 2021, RRs started to be maintained at a ratio of 20% of the difference between outstanding loan balances of such banks on 31 March 2022 and 31 December 2021, for a period of six months.<sup>1</sup> And on 10 June 2022, the RR ratio applied at 10% in TL commercial lending covered by the regulation was raised to 20%.<sup>2</sup>

In August 2022, to strengthen its macroprudential policy set, the CBRT amended the reserve requirement practice for commercial loans. In this context, the CBRT decided to:

- replace the RR ratio, which started to be applied at 10% in April and remained at 20% in June, by maintenance of securities at 30% for banks,
- maintain, for a one-year period, securities equaling the loan amount exceeding the 3% monthly loan growth rate for the August – November calculation period, and the 10% loan growth rate for the July-December 2022 period for non-targeted loans,
- maintain securities for all TL-denominated commercial loans to be extended from 20 August 2022 until the end of 2022, based on 20% and 90% of the extended loan amount if the interest rate of extended loan is above 1.4 times and 1.8 times of CBRT-released annual compound reference rate, respectively.
- make extension of TL commercial loans, previously not subject to the securities maintenance practice, available against expenditure from 1 October 2022 onwards.

As part of the regulation, the maintenance of securities was differentiated according to i) loan type, ii) loan growth, and iii) loan rate.

Additionally, the BRSA also introduced a series of macroprudential regulations regarding commercial loans. In April 2022, the risk weight for commercial loans subject to RRs was raised to 200%. In June 2022, TL extension of commercial loans was curbed for companies who fulfill all these conditions concurrently: (i) being subject to an independent audit, (ii) having FX cash assets (including gold) above TRY 15 million, and (iii) having FX cash assets that exceed 10% of the greater of total assets or net sales revenue of the last one year. In October 2022, the regulation thresholds of “TRY 15 million” and “10%” were revised as “TRY 10 million” and “5%”, respectively.

These macroprudential policies, elaborated in Box II.2.I, were put into practice gradually, and revised as needed. Table IV.1.I.1 summarizes the current macroprudential regulations for commercial loans.

<sup>1</sup> The amendment took effect from the calculation date of 29 April 2022.

<sup>2</sup> The amendment took effect from the calculation date of 24 June 2022.

**Table IV.1.I.1: Current Regulations for Commercial Loans** (as of 25 November 2022)

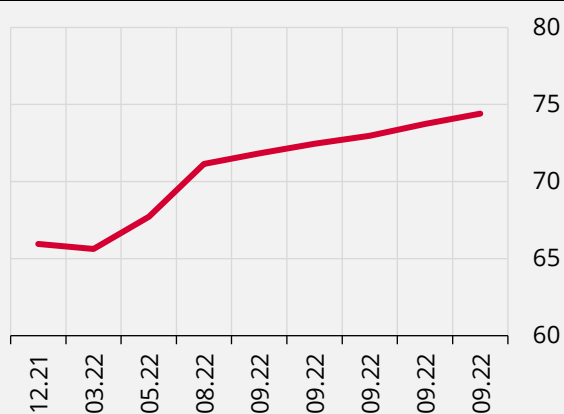
Subject	Implementation
Securities Maintenance based on Stock Loan Growth	In case the stock growth of TL commercial loans, excluding disbursements in targeted areas (selective loans), exceeds 3% in monthly terms, and 10% in the July-December period, securities will be maintained amounting to the excess balance.
Securities Maintenance based on Flow Loan Disbursements	Securities will be maintained at 30% of the amount of flow loans extended in areas other than targeted ones.
Securities Maintenance based on Loan Rates	Securities will be maintained at 20% of TL commercial loans extended at a rate 1.4 to 1.8 times the reference interest rate and at 90% of loans extended at a rate above 1.8 times the reference interest rate.
Credit Limit based on FX Cash Assets	TL commercial lending is restricted for corporate sector firms subject to an independent audit and having FX cash assets above TRY 10 million, if their FX assets exceed 5% of the corporate assets or net sales revenue.
TL Commercial Loan Risk Weight	The risk weight for non-targeted loans raised to 200% in calculation of the CAR.
Lending against Expenditure	Lending against invoice/expenditure is required in the case of extension of targeted loans, otherwise securities will be maintained in the amount of the extended loan.

### Credit Extensions and Credit Growth

As the macroprudential policies that prioritize lending to targeted sectors stepped in, their effects were soon observed in the loan growth and loan composition. Among targeted loans, SME loans account for a significant share at 64.3%, followed by export and investment loans of non-SME firms at 18.2%.

The stock share of targeted loans in TL commercial loans also continues to grow. This share rose from 66% at end-2021 to 75% at end-September 2022 (Chart IV.1.I.1). Given that the share of targeted loans in TL commercial loans in flow loan disbursements hovers close to 90%, the stock share is expected to increase further in the upcoming period. Growth rates in targeted and non-targeted sectors, which were on a similar course until April compared to end-2021, diverged in the subsequent period on the back of macroprudential policies. In fact, compared to end-2021, the growth of targeted loans as of September 2022 was 85.5%, while that of non-targeted loans declined to 23.5% (Chart IV.1.I.2).

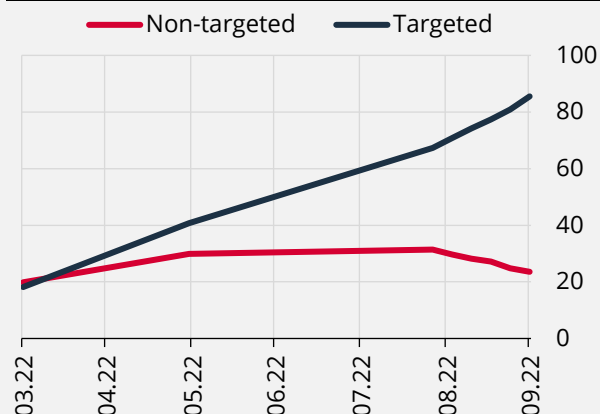
**Chart IV.1.I.1: Targeted Loans / TL Commercial Loans** (Stock, %)



Source: CBRT

Last Observation: 30.09.22

**Chart IV.1.I.2: TL Commercial Loan Growth** (Compared to end-2021, %)

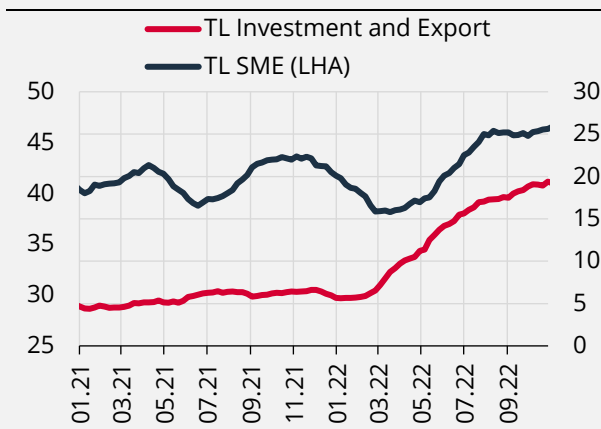


Source: CBRT

Last Observation: 30.09.22

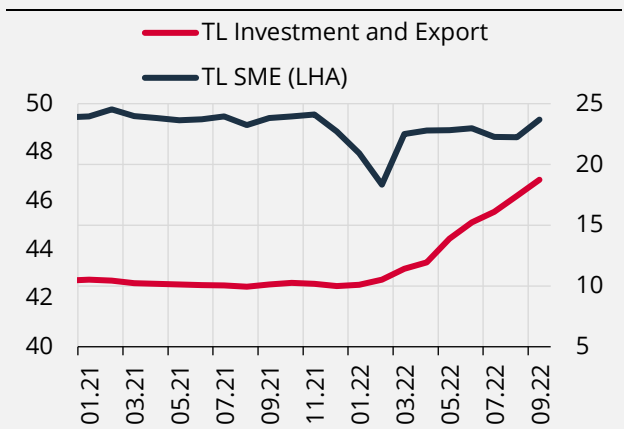
The flow and stock shares of TL-denominated investment and export loans (targeted loans) in TL commercial loans have soared since early 2022 and approached 20% (Chart IV.1.I.3 and Chart IV.1.I.4). On the other hand, the share of TL SME loans in TL commercial loans increased from 40% in January to 46.2% at the end of October (Chart IV.1.I.4).

**Chart IV.1.1.3: Share of TL Investment, Export and SME Loans in TL Commercial Loans (Flow, %)**



Source: CBRT Last Observation: 28.10.22

**Chart IV.1.1.4: Share of TL Investment, Export and SME Loans in TL Commercial Loans (Stock, %)**

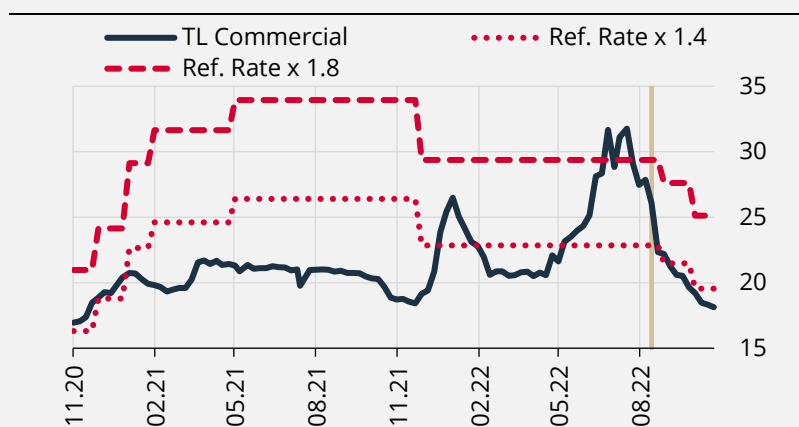


Source: CBRT Last Observation: 09.22

**Loan Rates**

The reference interest rate released by the CBRT since November 2020, which is used to determine the maximum interest rate for credit cards and the maximum commission rate for member businesses, started to be used as a reference as part of the macroprudential measures introduced in August 2022 for commercial loans. Looking at the past course of the TL commercial loan rate compared to the reference rate, the average TL commercial loan rate in 2021 was below 1.4 times the reference rate (Chart IV.1.1.5). However, in 2022, TL commercial loan rates were somewhat above the 1.4 times the reference rate and even exceeded 1.8 times the reference rate in July. In August, the average TL commercial loan rates fell below 1.4 times the reference rate due to the securities maintenance practice for commercial loans as well as the fading long-term uncertainties and the decline in the term premium.

**Chart IV.1.1.5: Reference Rates and TL Commercial Loan Rates (%)**

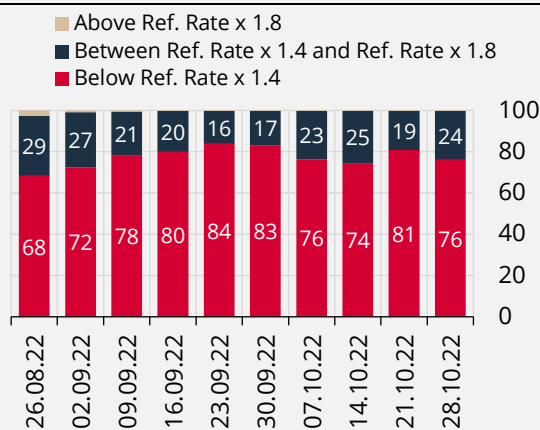


Source: CBRT Last Observation: 28.10.22

Note: TL commercial loan rates do not include overdraft accounts, credit cards and zero-interest loans.

To avoid maintaining securities, banks seem to have mainly charged a lending rate below 1.4 times the reference rate in their disbursements after August. In fact, 68 to 81% of loans were extended at a rate below 1.4 times the reference rate and there is a limited lending at a rate above 1.8 times reference rate, which requires 90% securities maintenance (Chart IV.1.1.6). For lending at rates between 1.4 and 1.8 times the reference rate, the average interest rate seems to be closer to the upper band (Chart IV.1.1.7).

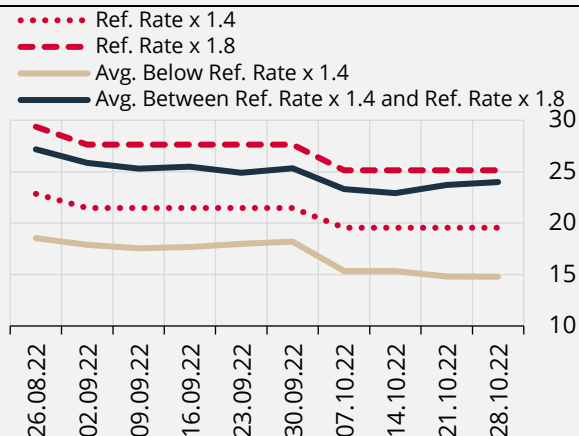
**Chart IV.1.1.6: TL Commercial Loan Disbursements by Interest (% Share)**



Source: CBRT

Last Observation: 28.10.22

**Chart IV.1.1.7: TL Commercial Loan Rates (%)**



Source: CBRT

Last Observation: 28.10.22

### Loan Share of Exporting Companies

Due to the driving role of exports in economic activity and their positive contribution to the current account balance, affordable financing opportunities for exporters and the targeted loan policy to boost production capacity and support of exports have largely been promoted by policymakers in recent years. Moreover, in terms of banks' asset quality, exporters with high development capacity, resilience to global and regional geopolitical risks and flexibility in market diversification have become a segment to which banks opted to channel their credit supply.

Accordingly, export credits were excluded from the macroprudential measures introduced for commercial loans in the second quarter of 2022.<sup>3</sup> Using micro data, this section explores the recent developments in exporting and net exporting firms' access to credit as well as the effects of macroprudential policies.

Following these macroprudential policy steps, the growth rate and composition of loans changed in line with targeted loan policies, and TL-denominated loans extended to exporting firms increased gradually over the periods analyzed (Chart IV.1.1.8). While exporters' share in TL-denominated flow loans at end-2021 was 45%, this share, as of June 2022, exceeded that of loans extended to non-exporting firms. This development also affected the stock loan shares, and the share of loans to exporting firms in the total stock of loans, which was 36.4% as of June 2021, gained pace after the first quarter of 2022 and reached 45.9% as of September 2022 (Chart IV.1.1.9).

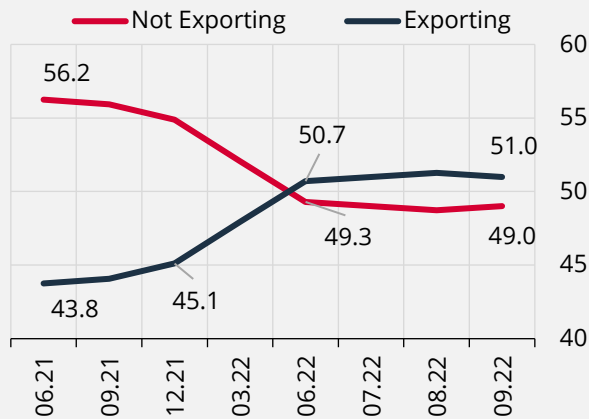
The targeted loan policy accelerated lending to exporters, and brought about a revision in the definition of a "net exporter" company in September 2022 for targeted loans. Accordingly, effective from 28 September 2022, i) loans extended with a maximum two-year maturity to firms whose exports are greater than 110% of total imports in the last three fiscal years or in the last fiscal year (export credits extended to net exporters)<sup>4</sup> are classified as export credit in the context of the securities maintenance practice.<sup>5</sup> The aim of this amendment was to strengthen the positive support to the current account balance and to continue contributing to sustainable growth.

<sup>3</sup> These measures and actions chiefly promote targeted (selective) credit policy and aim to shift financing towards targeted areas by increasing banks' cost of lending in areas other than SMEs, tradesmen, investment, agriculture, and exports.

<sup>4</sup> Net exporting requirement is not sought from the firms listed below: Companies operating in the defense industry sector, companies that apply with a commitment to export high-tech products, companies that will use a loan to finance exports after shipment, newly established companies that will use a loan upon submitting a proforma invoice or contract in the current year, provided that export receivable insurance has been made.

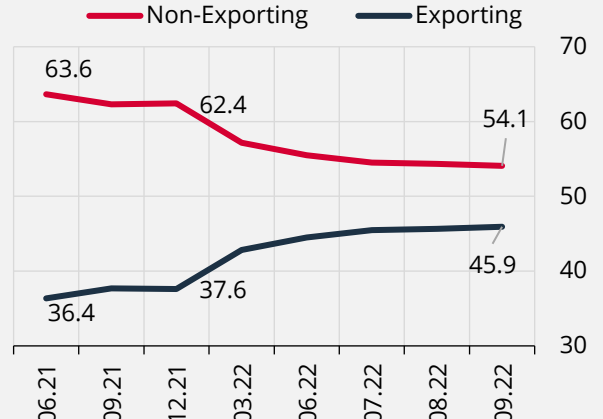
<sup>5</sup> Details are given in the Steps Taken Towards Effective Functioning of Financial Markets box (Box II.2.I).



**Chart IV.1.I.8: Exports-Based Share of Firms in Flow Loans (%)**


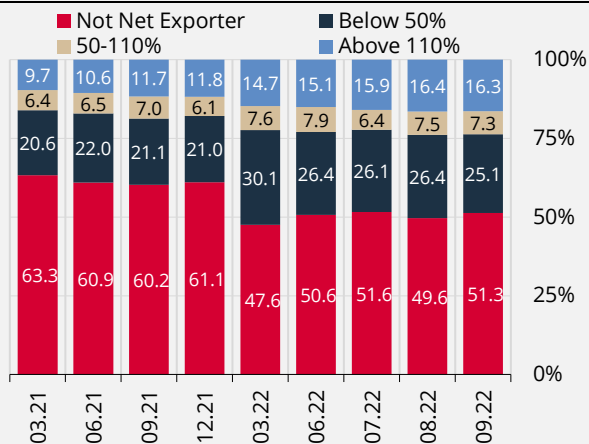
Sources: CBRT, Ministry of Trade

Note: Calculations are based on firms with TL loans. Exporting firms are those with stock or flow loans in the relevant quarter, which were engaged in exports in the previous 12-month period. The calculation of flow loan is based on the total flow loan disbursement in the 12-month period up to the relevant date and whether the firms exported in the same 12-month period.

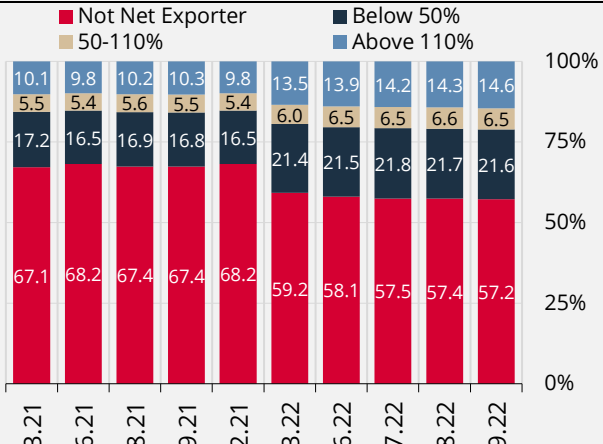
**Chart IV.1.I.9: Exports-Based Share of Firms in Stock Loans (%)**


Last Observation: 09.22

Considering these definitions, the flow and stock loan shares of exporting and net exporting firms seem to have diverged. In the first quarter of 2021, the share in flow loans of firms with a total exports/imports ratio at 110% was 9.7%, while this share was up to 16.3% in the third quarter of 2022 (Chart IV.1.I.10). The stock loan share of these firms also recorded a slight increase from 10.1% in the first quarter of 2021 to 14.6% in the third quarter of 2022 (Chart IV.1.I.11). Nevertheless, although the loan shares of net exporting firms, which can help restore a lasting improvement in the current account balance, have been trending upwards, they are still behind exporting firms' share in flow and stock loans at 45-50%. Accordingly, the policy step that entailed revising the definition of exporting firms as net exporting firm within the scope of targeted loans is expected to contribute positively to the external balance in the upcoming period.

**Chart IV.1.I.10: Share of Firms in Flow Loans by Export-to-Import ratio**


Sources: CBRT, Ministry of Trade

**Chart IV.1.I.11: Share of Firms in Stock Loans by export-to-import ratio**


Last Observation: 09.22

Note: The flow and stock loan shares of firms that used TL commercial loans are classified as 4 groups including the firms that were not exporters in the last three fiscal years (2018, 2019, 2020, and 2019, 2020, 2021, respectively), and that their net export ratios were below 50%, between 50-110%, and above 110%. The calculation of flow loans denotes the distribution of flow loans extended by quarters, and the flow loan distribution for July and August 2022 is monthly.

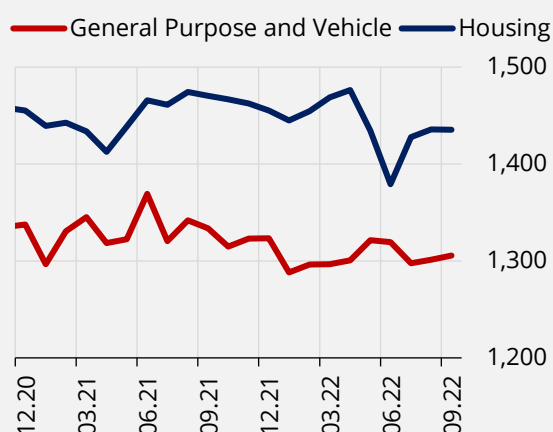
## Box IV.1.II:

### Risk Outlook for Retail Loans

The ratio of households' financial debt to GDP is declining, and the rise in households' assets remains relatively strong compared to their debt. The improvement trend in the banking sector's retail credit risk continues. In this Box, different household indebtedness and credit risk indicators such as personal credit rating, retail loan application/acceptance, delayed payment in retail loans and aging analysis, as well as the development of household indebtedness have been examined.

The monthly personal credit rating (PCR) and personal indebtedness index (PII) data, which is compiled by the Credit Register Bureau (KKB) from loan applications to banks, allows evaluation of the retail customer quality of the sector and enables predictions. An analysis of quarterly loan application inquiries by PCR averages reveals that the credit rating in personal credit card (PCC) applications has increased steadily since the first quarter of 2022. In September 2022, the credit rating profile of PCC applications was even better than the housing loan application profile that has the highest credit rating historically. While the customer profile for general-purpose and vehicle loan extensions did not show a significant change compared to the previous period, a slight decline is observed in the credit quality of applicants for personal overdraft accounts (ODA) in 2022 (Chart IV.1.II.1 and IV.1.II.2).

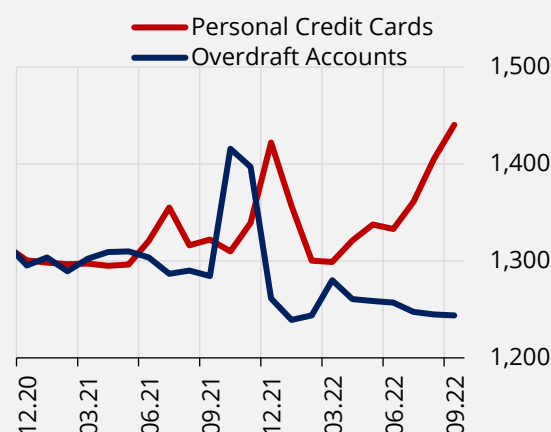
**Chart IV.1.II.1: Personal Credit Rating for General-Purpose, Vehicle and Housing Loans**



Source: Credit Register Bureau (KKB)

Latest Observation: 09.22

**Chart IV.1.II.2: Personal Credit Rating for Personal Credit Cards and Overdraft Accounts**

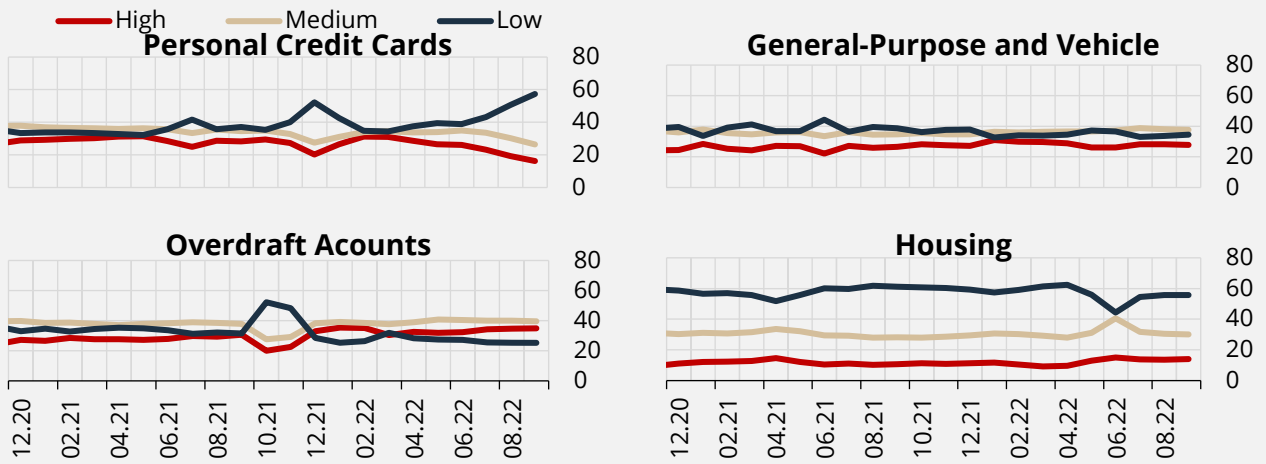


Source: Credit Register Bureau (KKB)

Latest Observation: 09.22

The KKB classifies customers applying for loans into four categories: low-risk, medium-risk, high-risk and unknown, based on PCR and PII. According to this classification, the share of the low-risk segment in PCC applications has significantly increased since the first quarter of 2022. The improved risk profile in PCC applications is expected to support asset quality. It is observed that the share of medium-risk and high-risk applications has increased in personal overdraft account applications, and the share of low-risk applications has been trending down. No significant change is observed in the risk outlook of customers in housing, general-purpose and vehicle loans (Chart IV.1.II.3).

**Chart IV.1.II.3: Risk Shares in Retail Loan Applications (%)**



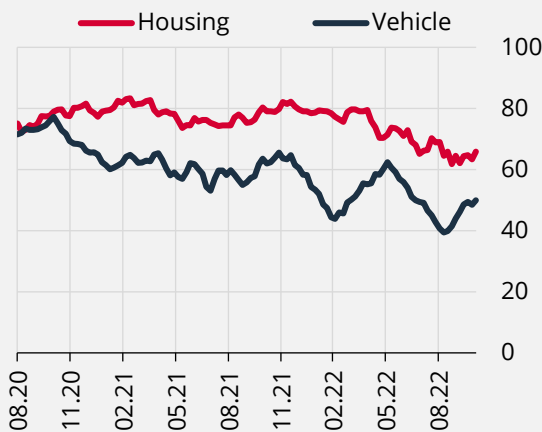
Source: KKB

Latest Observation: 09.22

Note: The risk distribution of applications is carried out by the KKB using PCR and PII matrix of quarterly applications.

The development of acceptance rates of retail loans can provide information about the loan extension appetite of banks and the risk level of loan applicants. The acceptance rates for housing loan applications slightly decreased in 2022 (Chart IV.1.II.4). Meanwhile, acceptance rates for general-purpose loans followed a similar course in 2021 and 2022 (Chart IV.1.II.5). New demands for limit increase for overdraft accounts are accepted at a lower rate compared to the last quarter of 2021. Banks state that income - loan balance mismatch, low credit ratings and delay in current payment performance as main reasons for the rejection of retail loans.

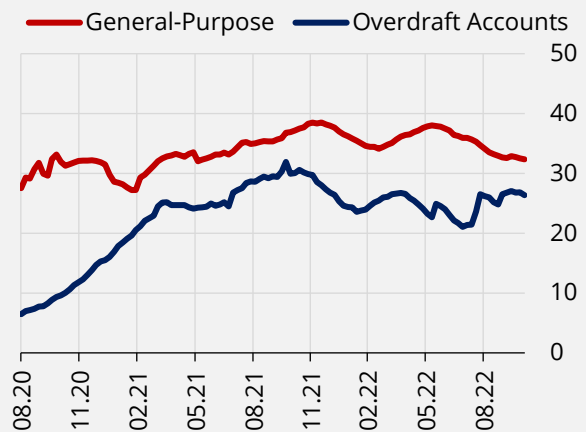
**Chart IV.1.II.4: Acceptance Rate of Secured Retail Loans (By Amount, 13-Week Moving Average, %)**



Source: CBRT

Latest Observation: 04.11.22

**Chart IV.1.II.5: Acceptance Rate of Unsecured Retail Loans (By Amount, 13-Week Moving Average, %)**

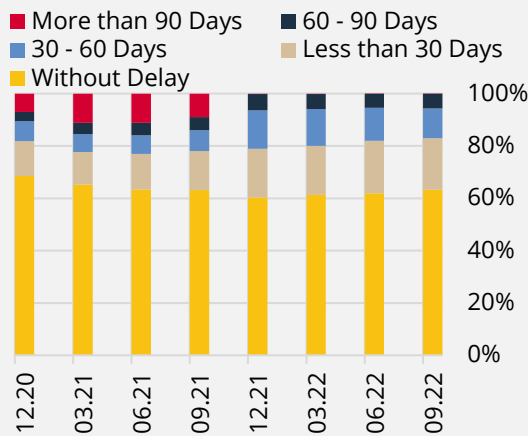


Source: CBRT

Latest Observation: 04.11.22

As of September 2022, 6% of retail loans were classified under Stage 2 loans. Most of the retail loans classified as Stage 2 loans are composed of loans with no delays in payment. While the share of loans without delay in unsecured retail loans displayed a trend similar to that of the previous quarter, the share of loans without delay in secured retail loans increased (Chart IV.1.II.6 and Chart IV.1.II.7). No deterioration is observed in Stage 2 loans, which are overdue and therefore more likely to migrate to NPL in the upcoming period, and this is considered to be favorable with respect to banks' asset quality outlook.

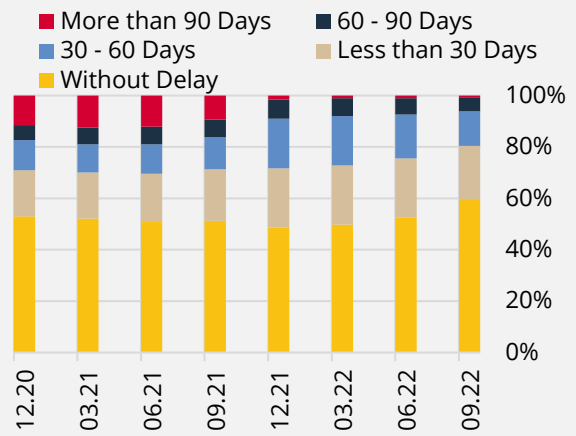
**Chart IV.1.II.6: Overdue Status of Unsecured Retail Loans Classified as Stage 2 Loans**



Source: CBRT

Latest Observation: 09.22

**Chart IV.1.II.7: Overdue Status of Secured Retail Loans Classified as Stage 2 Loans**

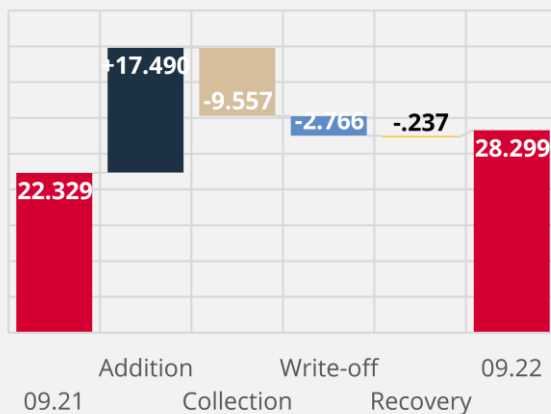


Source: CBRT

Latest Observation: 09.22

NPL ratios in banks' retail loans are at historically low levels. As the recent NPL additions in retail loans were covered by strong collections, the NPL formation remained limited (Chart IV.1.II.8). Banks have also resolved their NPL portfolio by selling or writing off NPL from assets. NPL additions in retail loans mostly came from general-purpose loans and personal credit cards that are classified as unsecured loans, while NPL additions in secured retail loans are quite contained. In housing and vehicle loans, where payment performance is strong, the net NPL balance decreased in 2022. The rise in asset prices is considered to reduce the riskiness in secured loans (Chart IV.1.II.9).

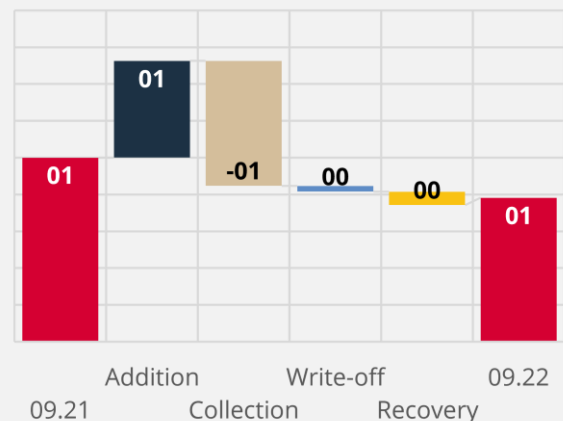
**Chart IV.1.II.8: NPL Movements of Unsecured Loans (TRY Billion)**



Source: CBRT

Note: "Recovery" denotes loans that are reclassified from NPL into performing loans.

**Chart IV.1.II.9: NPL Movements of Secured Loans (TRY Billion)**



Source: CBRT

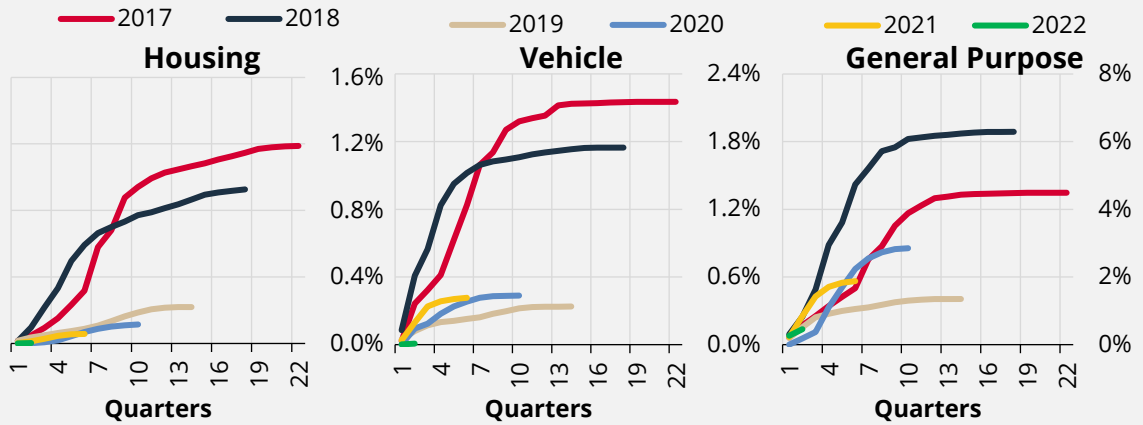
Note: "Recovery" denotes loans that are reclassified from NPL into performing loans.

Aging analysis, in which the payment performance of loans is compared according to their extension periods, are used to forecast the future course of asset quality. The aging analysis for housing loans suggest that housing loans extended in 2021 and 2022 had better payment performances than those of previous years (Chart IV.1.II.10). Nevertheless, NPL conversions of vehicle and general-purpose loans extended in 2021 were slightly faster than those extended in the previous two years. The NPL conversion rate in general-

purpose loans, which were extended in 2020 in the scope of pandemic measures -and which were likely to display a relatively lower payment performance taking into account the target customers-, remained below 2018, although it was above the NPL conversion rate of loans extended in 2019. It is observed that the conversion to NPL in retail loans is mostly completed within the first two years, and no significant deterioration is observed in payment performance as of the third year.

While the trend in alternative retail indebtedness indicators verifies that banks pay attention to the customer risk profile when extending retail loans, it supports the view that the improvement trend in retail loans and indebtedness indicators, especially in secured retail loans, will continue.

**Chart IV.1.II.10: Aging Analysis**



Source: CBRT

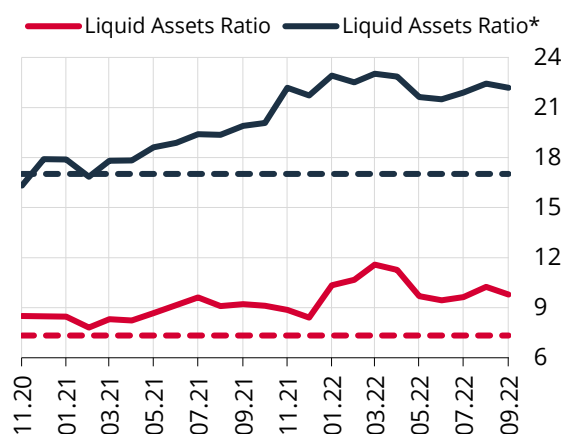
Latest Observation: 2022Q3

## IV.2 Liquidity Risk

### The favorable outlook in the banking sector's TL and FX liquidity continues.

Despite robust loan growth and the rise in banks' securities portfolio in 2022, the banking sector's liquid assets ratio remained above its historical average. The indicator, which also covers reserve requirements, is significantly above its historical average. Despite the acceleration in loan growth, deposit growth was well above loan growth and the positive outlook in the banking sector's liquidity was maintained in this period (Chart IV.2.1). The liquidity coverage ratio (LCR), which shows the level of banks' liquidity buffers against short-term net cash outflows, is well above legal limits both in total and in FX (Chart IV.2.2).

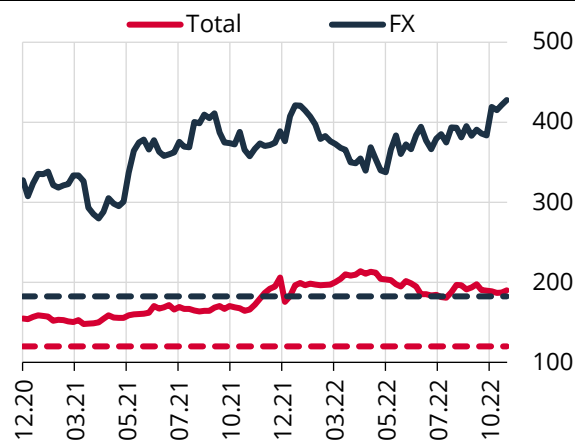
**Chart IV.2.1: Share of Liquid Assets in Total Assets (%)**



Source: CBRT Last Observation 09.22

Note: Liquid Asset Ratio = (Cash Reserves+Free Accounts at Foreign Banks+Unencumbered GDS+Reverse Repo Receivables+Takasbank and BIST Interbank Market) / Assets. Liquid Asset Ratio\* = (Cash Reserves+Free Accounts at Foreign Banks+Unencumbered GDS+Reserve Requirements) / Assets. Dashed lines represent the average of each series between 2014 and 2019.

**Chart IV.2.2: Total and FX Liquidity Coverage Ratios (4-Week MA, %)**



Source: CBRT Last Observation 28.10.22

Note: Development and investment banks (DIBs) are excluded. Based on non-consolidated reports. Minimum legal limits for FX and total LCR is 100% and 80%, respectively. Dashed lines represent the average of each series between 2014 and 2019.

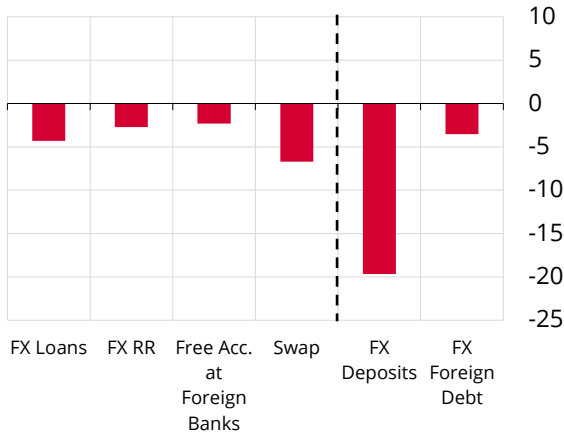
In the first four months of 2022, the pivotal factor in banks' FX liquidity was the conversion from FX deposit accounts to FX-protected TL deposit accounts (KKM). Banks met the FX liquidity they needed in the scope of this implementation mainly through FX required reserves, CBRT-backed swap transactions and free accounts at foreign correspondent banks (Chart IV.2.3). While the decline in FX deposits remained limited after April, banks have reduced their FX external debt. In this period, FX loan pay-offs became a source of FX liquidity for banks, while the FX inflow from this channel was reflected as an increase on FX-for-TL swap transactions and correspondent bank accounts abroad (Chart IV.2.4). As a result, throughout 2022, the sector's FX liquidity remained strong while the FX LCR reached a historically high level.

### Loans are mostly funded by deposits, which are a stable source of liquidity and this supports the liquidity outlook of the sector.

The decline in the sector's Loan/Deposit (L/D) ratio continues and the ratio is around 80% (Chart IV.2.5). The L/D ratio, which took up a downtrend in 2018, has been hovering below the 100% level since the beginning of 2021. In this period, the share of loans in total assets decreased from 59% to 52% on the back of the additional effect of partial rise in required reserves and securities portfolio. Similarly, in this period, the share of deposits in total liabilities increased with the contribution of the sector's foreign debt rollover ratio remaining below 100%. Due to the high exchange rate volatility over the last few years, the growth rate of FX loans lagged behind TL loans and the TL L/D ratio has reached historically high levels due to rising dollarization in deposits. Recently, as a result of the liraization in deposits with the contribution of the KKM implementation, the TL L/D ratio decreased from 158% in December 2021 to 114% on 28 October 2022. Despite the strong growth in TL loans, the key factor of this decline was the rise in consumers' TL deposit preferences. As a result of the KKM implementation,

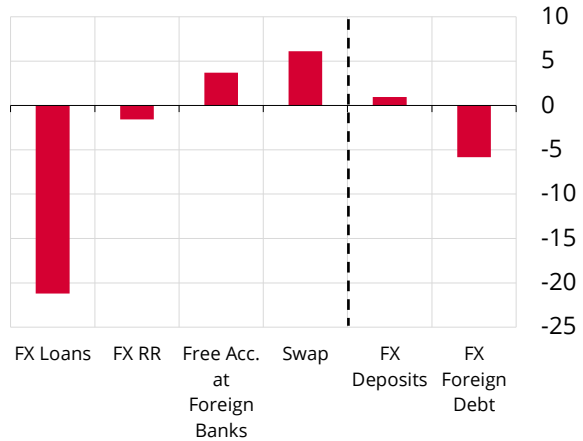
the need for currency swaps decreased as a result of liraization in banks' assets and liabilities reducing the funding need of the system. Despite the recent decrease in the TL L/D ratio, there has been a slight increase in the funding requirement of the system due to the rise in TL required reserves (Chart IV.2.6).

**Chart IV.2.3: Changes in Selected FX Balance Sheet Items between December 2021 - April 2022 (USD Billion)**



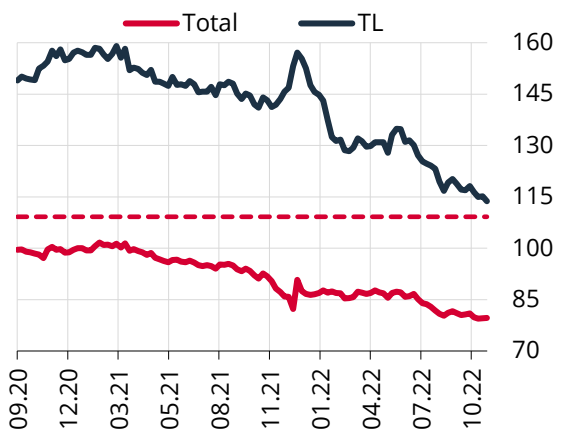
Source: CBRT Last Observation 04.22

**Chart IV.2.4: Changes in Selected FX Balance Sheet Items between April 2022 - October 2022 (USD Billion)**



Source: CBRT Last Observation 10.22  
 Note: FX external debt bar denotes change between April 2022 and September 2022.

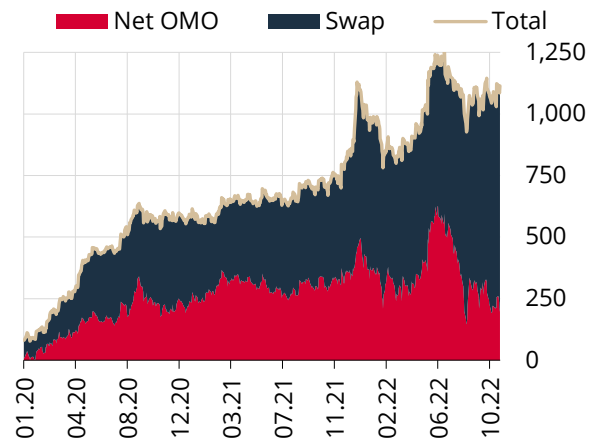
**Chart IV.2.5: Loan-to-Deposit Ratio (%)**



Source: CBRT Last Observation 28.10.22

Note: Development and Investment banks (DIBs) are excluded. Loans extended to banks and banks' deposits are excluded. Non-performing loans are included in loans. Dashed line represents the average of L/D ratio for 2011-2018 period.

**Chart IV.2.6: CBRT Funding (TRY Billion)**

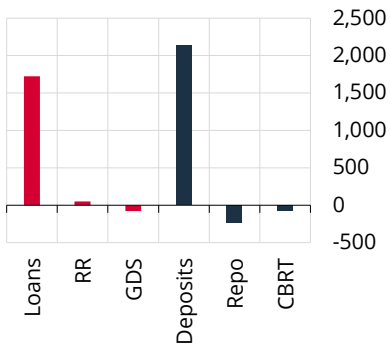


Source: CBRT Last Observation 28.10.22

**Implementations introduced in the scope of the liraization strategy contributed to the rise in the share of TL in balance sheets of the banking sector.**

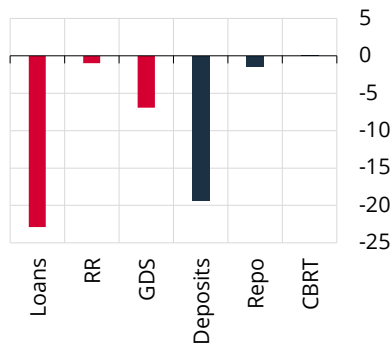
After the KKM implementation, TL assets and liabilities have been increasing strongly, while FX assets and liabilities have been decreasing (Chart IV.2.7 and Chart IV.2.8). On 28 October 2022, the KKM balance reached TRY 1.46 trillion. With the contribution of this balance, there has been a strong increase in TL deposits in the post-KKM period, while the FX-adjusted amount of FX deposits decreased (Chart IV.2.9).

**Chart IV.2.7: Changes in TL Assets and Liabilities Compared to December 2021 (TRY Billion)**



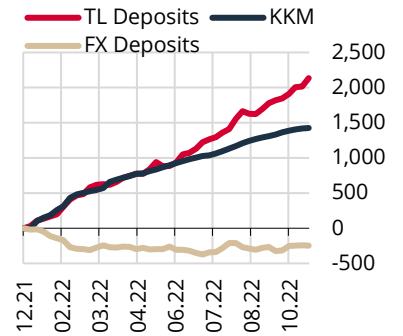
Source: CBRT  
 Note: Assets and liabilities are shown in different colors. GDS represents securities at fair value through other comprehensive income and securities subject to repo transactions. Change in amounts between 24 September 2021 and 19 September 2022 of related items are shown.

**Chart IV.2.8: Changes in FX Assets and Liabilities Compared to December 2021 (USD Billion)**



Note: Assets and liabilities are shown in different colors. GDS represents securities at fair value through other comprehensive income and securities subject to repo transactions. Change in amounts between 24 September 2021 and 19 September 2022 of related items are shown. The differences in total asset and liability changes are covered by off-balance sheet transactions.

**Chart IV.2.9: Changes in Deposits Compared to December 2021 (TRY Billion)**

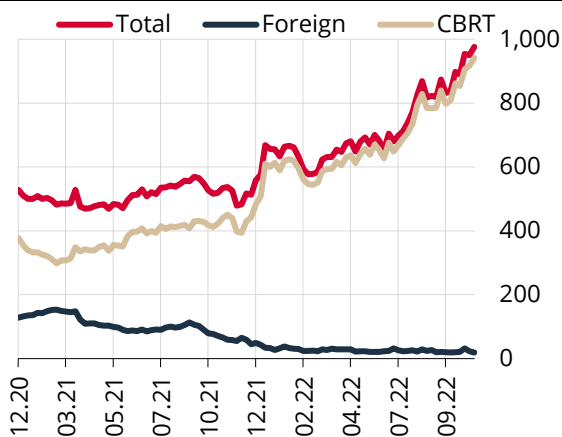


Last Observation 28.10.22  
 Note: The values show changes since the end-2021. FX deposit series are the TL equivalent of the weekly change of USD-equivalent of FX deposits calculated by the average USD rate in the respective week.

**The banking sector continues to manage the currency mismatch between assets and liabilities mostly through swap transactions.**

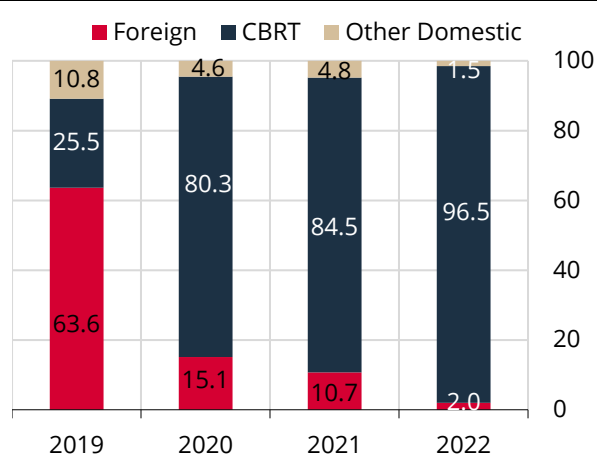
Despite liraization in the sector's assets and liabilities, the net TL funding need of the sector is increasing due to changes introduced by the CBRT in collateral conditions in OMO funding and the increase in TL required reserves, and the net TL funding amount provided by currency swap transactions has reached TRY 976 billion (Chart IV.2.10). Currency swap transactions are mainly carried out with the CBRT (Chart IV.2.11).

**Chart IV.2.10: Net TL Currency Swaps (TRY Billion)**



Source: CBRT  
 Last Observation 28.10.22  
 Note: Net TL currency swap amount shows the net TL funding amount that banks obtain via currency swap.

**Chart IV.2.11: Shares of Net TL Currency Swaps (%)**



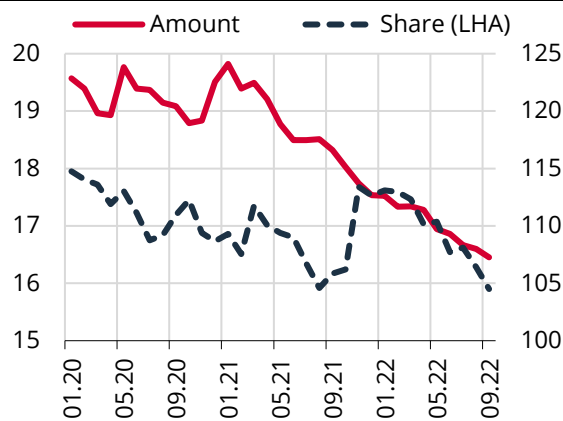
Source: CBRT  
 Last Observation 28.10.22  
 Note: The average value of the last three months has been reported for each year. For 2022, the latest observation has been used.



**While global economic developments as well as escalating geopolitical risks lead to a rise in foreign financing costs, the sector's ability to access foreign funding remains high.**

The sector's total external debt, which has been on a downtrend since the beginning of 2021, maintained this trend and decreased to USD 107 billion in September 2022 (Chart IV.2.12).<sup>1</sup> In this period, the share of foreign funding in banks' liabilities decreased on the back of the decline in foreign borrowing and strong growth in deposits. In September 2022, the external debt rollover ratio of banks was 89%, and banks continue to roll over mainly their short-term external debts. In this period, banks partially paid off their long-term external debts that were due and their long-term external debt rollover ratio remained lower (Chart IV.2.13). The said development is attributed to increasing costs due to the tightening in global financial conditions and CDS developments, banks' ample FX liquidity and real sector's weak demand for FX loans. For these reasons, the renewal rates of eurobonds and subordinated debts that have matured in this period were at low levels.

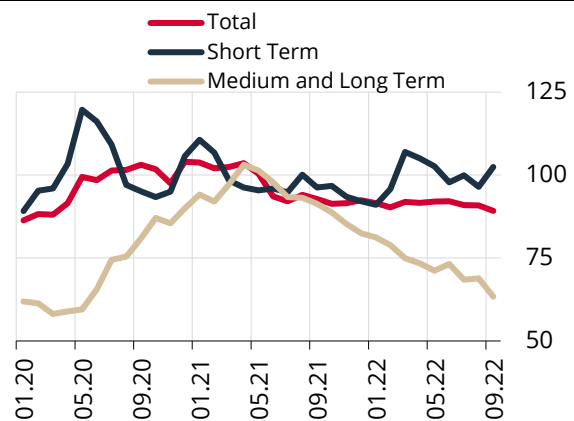
**Chart IV.2.12: External Debt and Share in Liabilities** (USD Billion, %)



Source: CBRT, MKK Last Observation 09.22

Note: Parity-adjusted amount. The USD equivalent of euro- denominated external debts is recalculated by the parity value of June 2018.

**Chart IV.2.13: External Debt Rollover Ratio** (%)

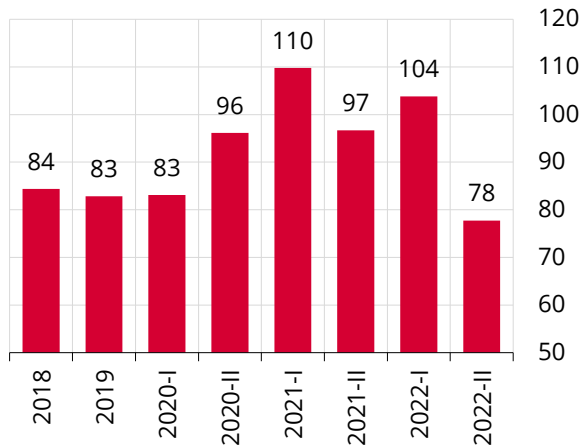


Source: CBRT, MKK Last Observation 09.22

Note: External debt rollover ratios are calculated based on 6-month (for total), 3-month (for short-term) and 12-month (for long-term) moving totals of banks' total borrowings and repayments of external liabilities including securities issued abroad

With the effect of the rise in borrowing costs, the rollover ratio in syndicated loans decreased (Chart IV.2.14 and Chart IV.2.15). The margin over reference rates in syndicated loans extended in the second half of 2022 increased by approximately 150 basis points compared to the first half, due to the recent tightening in international financing conditions and the high CDS level. Moreover, due to rising global reference interest rates, overall borrowing costs of syndicated loans have increased significantly. Recently, banks' FX liquidity outlook has become stronger on the back of FX loans that have been paid off and it is observed that in the scope of their cost management strategies, banks' renewal appetite for syndicated loans has weakened.

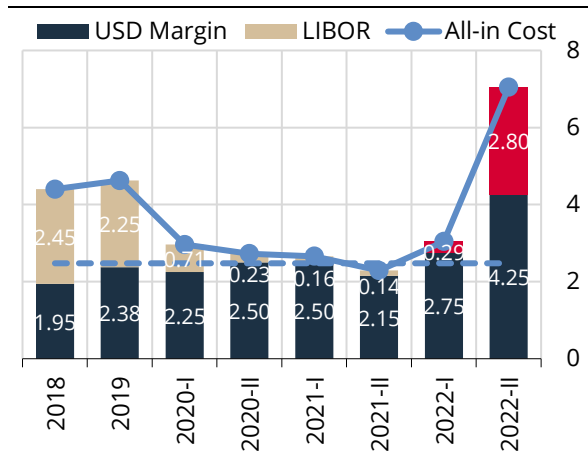
<sup>1</sup> The amount shows the foreign debt amount adjusted for parity effect, and the amount not adjusted for parity effect is USD 102 Billion.

**Chart IV.2.14: Rollover Ratio of Syndicated Loans (%)**


Source: CBRT, KAP

Last Observation 23.11.22

Note: I and II represents April-June and October-December syndication periods of the respective year. The external debt rollover ratio is calculated as the ratio of total borrowing and repayments in the specified periods.

**Chart IV.2.15: Cost of Syndicated Loans (%)**


Source: KAP

Last Observation 23.11.22

Note: Calculated for large-scale 10 banks excluding DIBs. USD margin shows the interest rate applied in addition to the Libor rate for syndicated loans obtained in USD. 3-month average SOFR is given for the SOFR to be used for 2022. I and II represents April-June and October-December syndication periods of the respective year. The dashed line is the average of the total cost for 2014-2019 period.

### The banking sector has strong FX liquidity buffers against shocks that it may face in obtaining external financing.

As of September 2022, the sector has an FX liquid asset portfolio of USD 90 billion. These liquid assets are composed of FX cash, free accounts in correspondent banks, ROM balance, free eurobond portfolio as well as swap receivables that will mature within 1 year. (Chart IV.2.18). In addition to this portfolio, as of September 2022, the sector has FX foreign debt of USD 55 billion that will due within 1 year. The coverage ratio of FX liquid assets -excluding swap receivables- to FX external debt, which will due in 1 year, is 79%. When swap receivables are included, the sector's FX foreign debt coverage ratio, which will due in 1 year, rises to 163% (Chart IV.2.19). The aforementioned rate is above the 2014-2019 period average of 127%. This indicates that banks still have strong liquidity buffers against possible liquidity shocks.

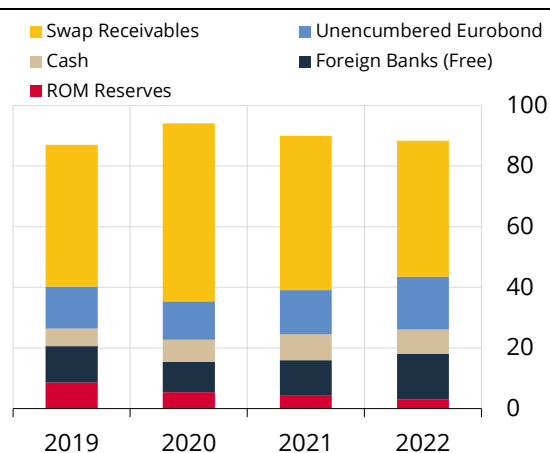
In the current Report period, the tightening in monetary policies of central banks of advanced economies coupled with elevated geopolitical risks, and high country risk premium keep the sector's FX liquidity buffers important. The sector has high total and FX LCRs, the L/D ratio is at safe levels, the short and long term liquidity outlook of the sector is strong and the ratio of FX liquid assets to FX liabilities is also strong. Table IV.2.1 summarizes the evolution of the sector's selected liquidity indicators by comparing them to previous stress periods. With the effect of the weakening of domestic FX loan demand, the sector's tendency to reduce its external debt, which started back in 2018, continued in the current Report period. While the sector's external debts are decreasing, the FX liquid asset portfolio continues to be strong.

Therefore, the capacity of liquid asset portfolio to meet external debts is above historical averages. Moreover, despite banks' recent tendency to pay off their relatively more costly loans and renew short-term external debts, the average remaining maturity is still high and continues to limit the sensitivity of the sector's debt rollover facility to external to cyclical developments. The FX RR ratio established for non-core liabilities with a maturity of up to 1 year is 21%.<sup>2</sup> Therefore, in addition to the sector's total FX RR balance that is a higher level

<sup>2</sup> Within the scope of the current maturity distribution, FX RR established for FX non-deposit liabilities is approximately 12% of total FX non-deposit liabilities.

than in previous periods, FX RR liabilities that will be released at this rate due to the decrease in external debts in a possible liquidity shock will provide banks with an additional FX liquidity opportunity.

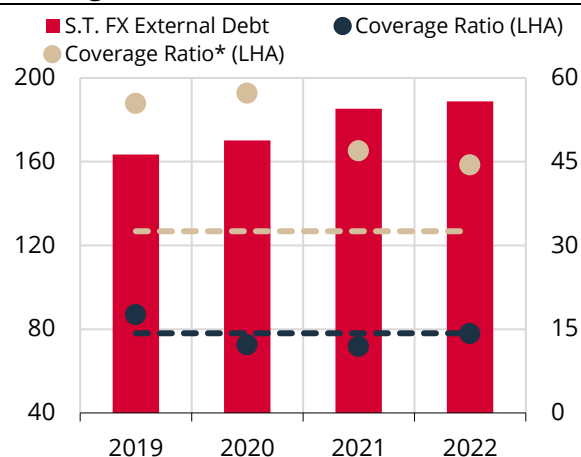
**Chart IV.2.18: FX Liquid Assets (USD Billion)**



Source: CBRT Last Observation 09.22

Note: FX liquid assets include ROM reserves and cash reserves, free accounts at foreign banks, and unencumbered Eurobonds, and are calculated at the month-end exchange rates. Swap receivables denote FX assets arising from net TL swap transactions that will fall due within one year. The average of the last three months has been reported for each year.

**Chart IV.2.19: Short-Term FX External Debt and Coverage Ratio (USD Billion, %)**



Source: CBRT Last Observation 09.22

Note: External debt represents FX-denominated external debt that will fall due within one year and is calculated by excluding FX deposit accounts and TL deposit accounts from banks' short-term external debt stock. Coverage ratio: The ratio of FX liquid assets, excluding swap receivables specified in Chart IV.2.18 to external debt. Coverage ratio\*: Net TL currency swap amount (swap receivables) due within one year is also included in liquid assets. The average of the last three months is reported for each year. The dashed lines show the average of coverage rates for the 2014-2019 period.

**Table IV.2.1: Developments in Selected Liquidity Indicators**

	May 2013	June 2018	September 2022
<b>FX External Debt</b> (USD Billion)	127	164	100
<b>Short Term FX External Debt</b> (USD Billion)	69	70	55
<b>FX Liquid Assets *</b> (USD Billion)	58	48	43
<b>FX Liquid Assets**</b> (USD Billion)	68	88	90
<b>Short Term Debt Coverage Ratio *</b> (%)	85	69	79
<b>Short Term Debt Coverage Ratio**</b> (%)	99	126	163
<b>Average Remaining Maturity of External Debt</b> (Month)	32	37	34
<b>FX Required Reserves</b> (USD Billion)	28	42	72

Source: CBRT

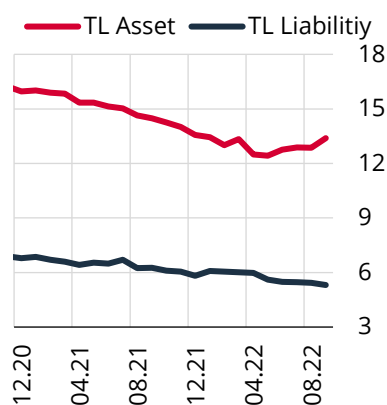
Dipnot: (\*) FX liquid assets include ROM reserves and cash reserves, free accounts at foreign banks, and unencumbered Eurobonds. (\*\*) Net TL currency swap amount has been added to liquid assets as well. May 2013 represents the date on which the Fed signaled that it may start tapering gradually.

### IV.3 Interest Rate and Exchange Rate Risk

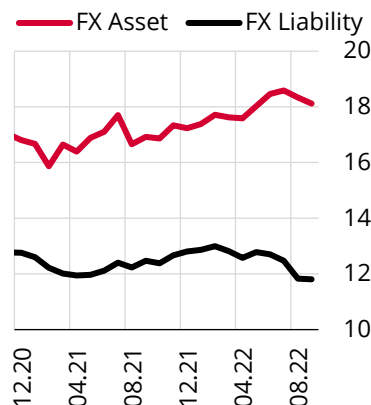
**The maturity mismatch between TL and FX assets and liabilities has slightly increased but it is still below the historical average.<sup>1</sup>**

The decline in the average maturity of banks' TL assets observed since mid-2020 has stagnated in June 2022 and the average maturity of TL assets has moved slightly upwards afterwards. The shortening in loan maturities and the increase in the share of floating rate loans in loan portfolios since the last quarter of 2021 were effective in the decline in average asset maturity. After the macroprudential regulations put into effect in 2022, banks shifted towards long-term fixed-income TL securities which led to an increase in the average maturity of assets and the average maturity increased to 13.4 months. The weighted average maturity of TL liabilities according to the repricing period decreased to 5.3 months due to the increase in the share of funding instruments for shorter terms in the funding structure and the decrease in the shares of long-term subordinated debt and securities issued despite the positive effect of KKM (Chart IV.3.1). In addition, the weighted average maturity of FX-denominated interest-sensitive assets has increased since the previous Report period and exceeded 18 months, mainly due to the changes in the securities and loan portfolios of banks. The maturity of FX liabilities has decreased by approximately one month since the last Report period, mainly due to securities issued, subordinated debts and derivatives (Chart IV.3.2). As a result of these developments, the maturity difference between TL and FX interest-sensitive assets and liabilities increased slightly to 8.1 months and 6.3 months, respectively (Chart IV.3.3).

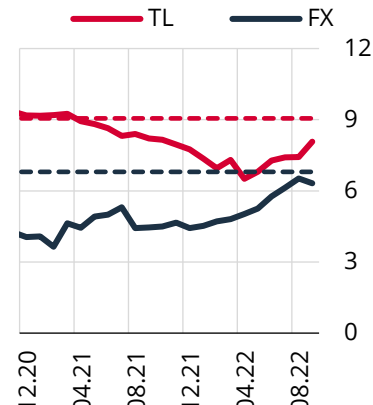
**Chart IV.3.1: Weighted Average Maturity of Interest Rate-Sensitive TL Assets and Liabilities**  
(Month)



**Chart IV.3.2: Weighted Average Maturity of Interest Rate-Sensitive FX Assets and Liabilities**  
(Months)



**Chart IV.3.3: Average Maturity Difference between Interest-Rate Sensitive Assets and Liabilities** (Month)



Source: CBRT

Last Observation: 09.22

Note: Calculated according to the repricing period. Mid-points of maturity brackets have been considered for weighted average maturities. Dashed lines represent average of each series in 2013-2020 period.

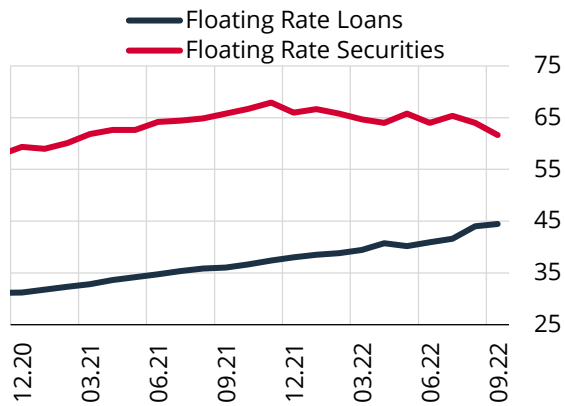
**Despite the increase in the share of floating rate loans in the credit portfolio and shortening of maturities in fixed rate loans, the share of fixed-rate TL securities and their average maturity in the securities portfolio have been increasing.**

While banks' tendency towards floating rate loans in their loan portfolios continues, there has been a decrease in the share of floating rate in the securities portfolio after macroprudential regulations (Chart IV.3.4). With the contribution of recent regulations regarding collateral, liquidity and loans encouraging

<sup>1</sup> Participation banks are excluded from the sector data used in interest rate risk analyses.

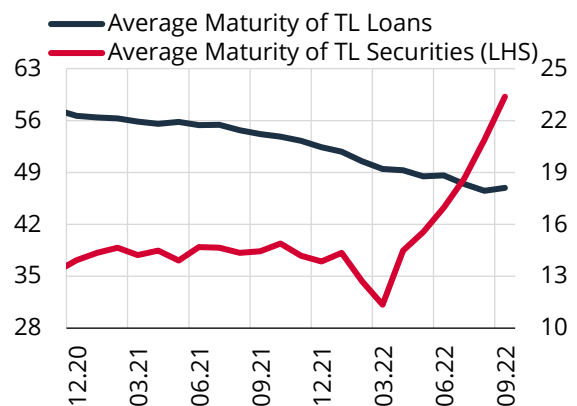
long-term fixed-rate securities, the average maturity of TL securities has extended significantly, while the decrease in loan maturities has continued albeit at a slower pace (Chart IV.3.5).

**Chart IV.3.4: Breakdown of TL Securities and TL Loans by Interest Type (%)**



Source: CBRT Last Observation: 09.22

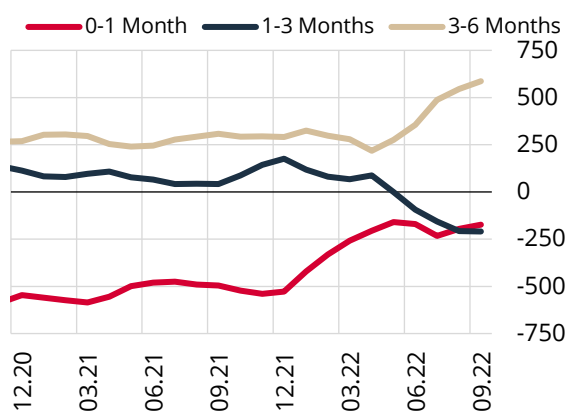
**Chart IV.3.5: Average Maturity of TL Securities and TL Loans (Remaining Maturity, Month)**



Source: CBRT Last Observation: 09.22

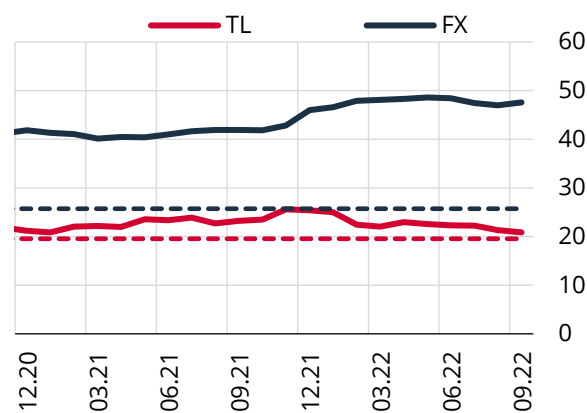
Banks' sensitivity to TL interest rate changes is based on their short-term negative positions. Since mid-2020, the average short position of the banking sector with a maturity of 0-1 months has been at the TL 500 billion level. KKM products, which were introduced in December 2021 and can be opened with a minimum maturity of 3 and 6 months, helped extend the average maturity of TL deposits, and the negative position subject to interest rate risk within 0-1 month maturity range decreased significantly in 2022. On the other hand, the outlook for 1-3 month and 3-6 month maturities, in which banks had a positive position, changed as of the end of March. With the introduction of a minimum maturity possibility of 3 instead of 6 months for legal person's KKM accounts, and the approaching maturities in real persons' deposit accounts at the end of March, positions in 1-3 month maturity bracket turned negative, while a positive increase was observed in 3-6 month positions (Chart IV. 3.6). Meanwhile, the share of demand deposits, which hovers around 21 percent in TL and 48 percent in FX, somewhat limits the repricing risk exposed (Chart IV.3.7).

**Chart IV.3.6: Change in TL Repricing Gap Analysis by Repricing Period (TL Billion, 3-Month MA)**



Source: CBRT Last Observation: 09.22

**Chart IV.3.7: Change in Demand Deposit Share (%)**

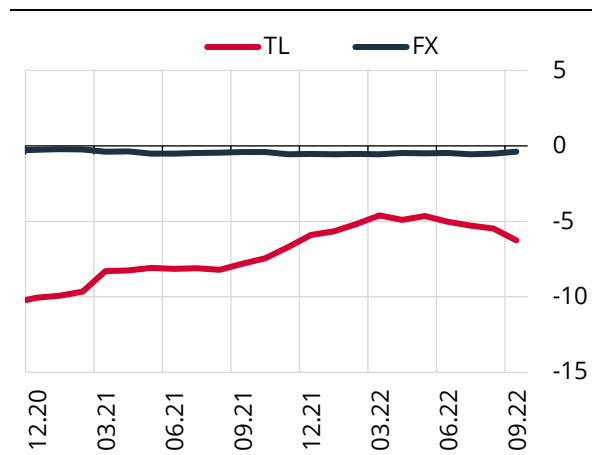


Source: CBRT Last Observation: 09.22  
 Note: Dashed lines denote the average of each series in 2013-2020 period.

**While banks' sensitivity to TL interest rate shocks slightly increased compared to the previous Report period, their sensitivity to FX interest rate shocks remained flat.**

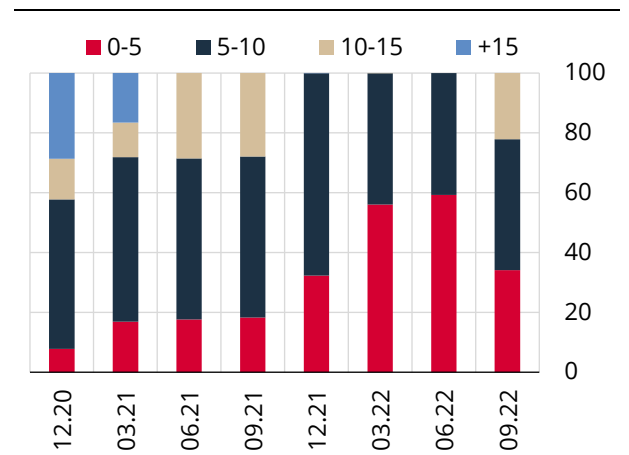
The sensitivity analysis showed that the interest rate risk that banks are exposed to due to repricing has gradually decreased since the end of 2020, and the sensitivity to interest rate shocks has slightly increased since June. The likely loss to be caused by an upward shock of 500 basis points in TL interest rates, which was 10 percent of banks' capital at the end of 2020, decreased to 4.6 percent in March and was calculated as 6.3 percent on the Report date (Chart IV. 3.8).<sup>2</sup> The sensitivity of banks' balance sheets to an FX interest rate risk remains limited. The effect of the loss that will occur as a result of a 200 bps increase in USD/EUR interest rates is less than 1 percent of capital. The sector is considered to have sufficient buffers against interest rate shocks and a strong balance sheet structure. While there are no banks that will incur a capital loss of 15 percent or more as a result of an interest rate shock, in the current Report period, the interest rate shock sensitivity of banks with 22 percent of the sector's asset size is in the range of 10-15 percent (Chart IV.3.9).

**Chart IV.3.8: Loss to Capital Ratio After a Positive TL Interest Rate Shock (%)**



Source: CBRT Last Observation: 09.22

**Chart IV.3.9: TL Asset Shares of Banks by Loss to Capital Ratio Intervals After a TL Interest Rate Shock (%)**



Source: CBRT Last Observation: 09.22

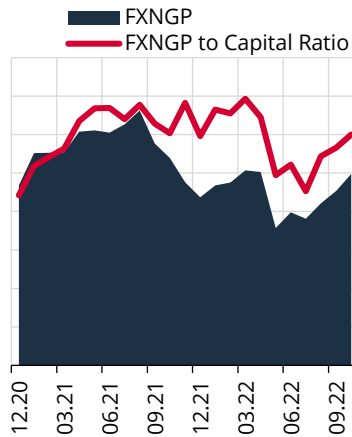
Note: The economic value approach takes into account the change in the present value of interest rate-sensitive assets (banking book) and liabilities in the face of a change in the interest rate. The yield curve is assumed to display a parallel upward movement of 500 bps in a TL interest rate shock and 200 basis points in an FX interest rate shock. The chart shows the possible loss to regulatory capital ratio in the event of an interest rate shock. Losses under the interest rate shock scenario are divided into brackets. The total assets of banks in each bracket are proportioned to the total assets of the sector.

**While the FX long position of the banking sector was maintained, the number of banks with FX long positions increased.**

The banking sector continues to have an FX long position, and the FX net general position (FXNGP) is at USD 4.5 billion and the FXNGP/capital ratio decreased by 0.5 percentage points to 5.8 percent (Chart IV.3.10). As a result of the improvement observed in the net FX position after July, the number of banks with an FX position surplus increased. Moreover, the share of total asset size of banks with long FX positions stays high (Chart IV.3.11). The on-balance sheet FX short position, which reached USD 62 billion at the end of 2020, declined to USD 34 billion in 2022 as a result of the policies implemented (Chart IV.3.12).

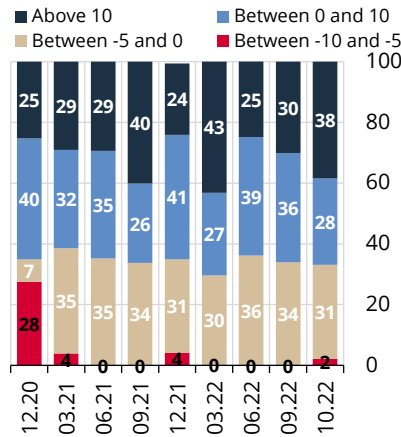
<sup>2</sup> Under the BRSA's Regulation on the Measurement and Assessment of the Interest Rate Risk in the Banking Book via the Standard Shock Method, the interest rate risk-driven loss to regulatory capital ratio cannot exceed 20 percent.

**Chart IV.3.10: FXNGP to Capital Ratio and FXNGP (%), USD Billion)**



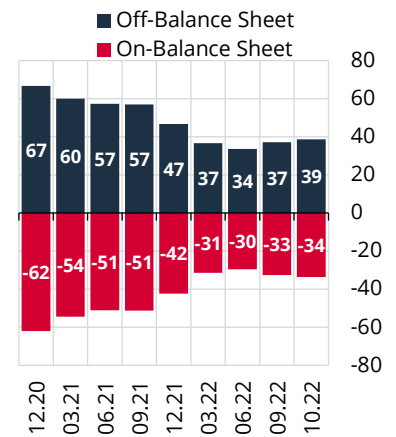
Source: CBRT  
 Note: Shows the weekly simple arithmetic mean of FXNGP/Capital ratios.

**Chart IV.3.11: Total Asset Shares of Banks by FXNGP/Capital Ratio (%)**



Note: Asset aggregates of September were used in October calculations.

**Chart IV.3.12: Banking Sector's FX Position (USD Billion)**

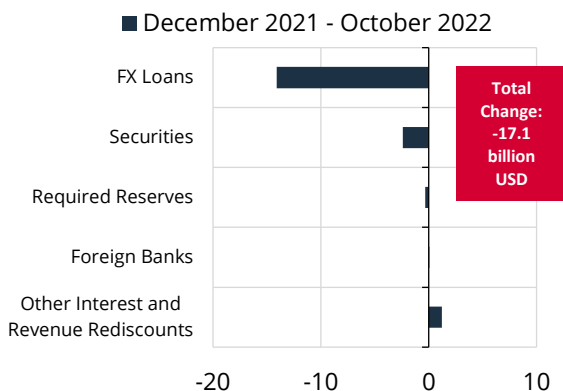


Last Observation: 28.10.22

**The decline in the on-balance sheet short position was mainly driven by the decrease in the external debt of banks owing to the introduction of the KKM implementation, high FX liquidity of the banking sector and the weak demand for FX loans.**

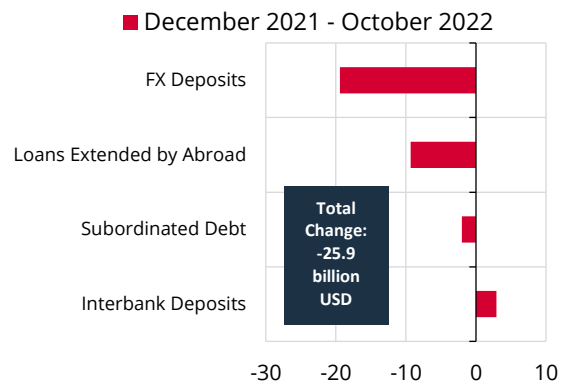
On-balance sheet FX assets decreased by USD 17.1 billion from end-2021 to end-October (Chart IV.3.13). To support financial stability and strengthen the monetary transmission mechanism, the CBRT has taken macroprudential measures including the maintenance of required reserves and securities for both asset and liability items. In the April-October period where numerous measures were introduced, the CBRT and required reserve accounts increased significantly. Meanwhile, the decrease in FX loans and firms' preference in terms of using TL loans played a fundamental role in the decrease in FX assets. Transitions from FX to TL deposits have continued since December 2021, when the KKM product was introduced, and FX deposits decreased by USD 19.4 billion (Chart IV.3.14). Compared to the end of 2021, on-balance sheet FX liabilities decreased by USD 25.9 billion in line with on-balance sheet FX assets.

**Chart IV.3.13: Change in Banking Sector's On-Balance Sheet FX Assets (USD Billion)**



Source: CBRT  
 Last Observation: 28.10.22  
 Note: Foreign banks include receivables from reverse repo transactions as well. Required reserves are calculated by adding the CBRT item. Eximbank is excluded.

**Chart IV.3.14: Change in Banking Sector's On-Balance Sheet FX Liabilities (USD Billion)**



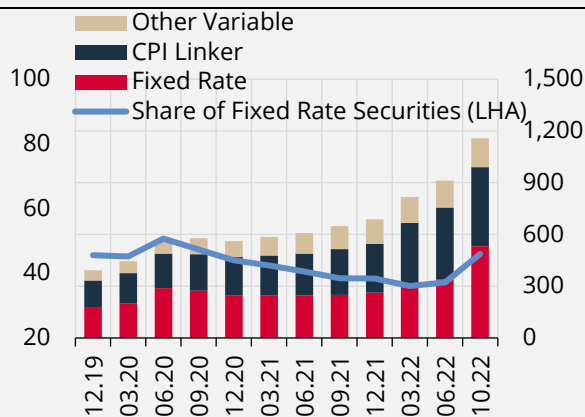
Source: CBRT  
 Last Observation: 28.10.22  
 Note: FX deposits refer to the total of FX and precious metal deposit accounts. External debt includes loans from abroad, securities issued and funds from repo transactions. Eximbank is excluded.

## Box IV.3.I:

### Turkish Lira Securities Portfolio Structure in the Banking Sector

The CBRT is strengthening its macroprudential policy set to support financial stability and encourage liraization. Accordingly, weights of Turkish lira-denominated assets in the CBRT's collateral system have been changed and as a complementary step to the changes in collateral conditions, banks started to maintain TL long-term, fixed-rate securities for their FX deposits/participation funds. On the asset side of bank balance sheets, banks were obliged to maintain securities depending on whether loans are directed to targeted areas and the level of loan rates with respect to reference interest rate. This box examines the change in banks' securities portfolio after these steps.

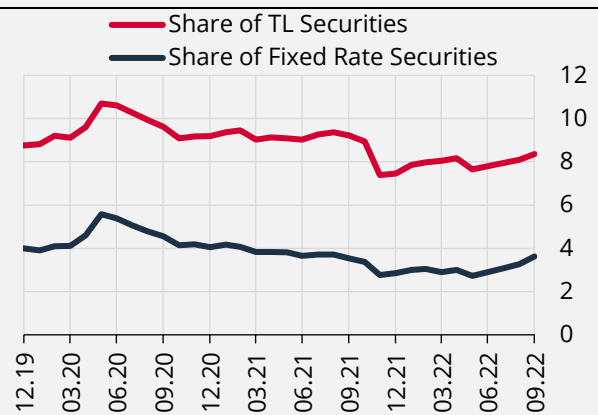
**Chart IV.3.I.1: TL Securities (TL Billion, %)**



Source: CBRT

Last Observation: 10.22

**Chart IV.3.I.2: Share of TL Securities in Assets (%)**



Source: CBRT

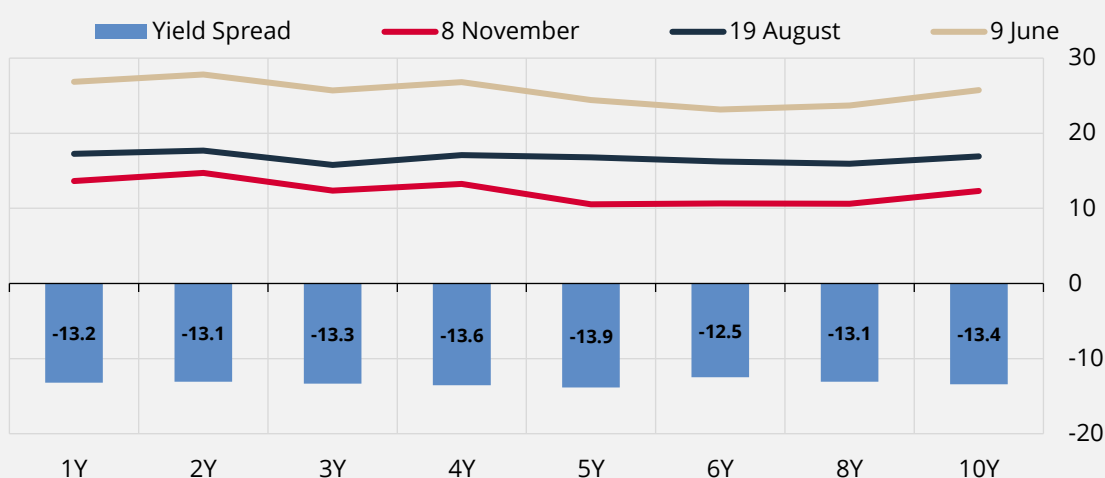
Last Observation: 09.22

Note: Securities whose return is not contingent on interest are included in fixed-rate securities.

Until June 2022, the rise in banks' TL securities was mostly driven by variable-rate securities, CPI-indexed ones in particular, which reduced the balance sheet sensitivity to inflation and thus the effectiveness of monetary policy, and also led to expansionary credit and money supply. Accordingly, the share of fixed-rate TL securities in total TL securities declined to 36% in May 2022. After the securities maintenance regulation, this trend reversed and the share of fixed-rate TL securities in total TL securities rose to 46% (Chart IV.3.I.1).

The amount of banks' TL securities, which started to increase at the beginning of 2021, reached TL 1.2 trillion as of October. However, the ratio of TL securities and fixed-rate TL securities to the sector's assets is still limited (Chart IV.3.I.2).



**Chart IV.3.I.3: Turkish Lira GDDS Yield Curve (% , Percentage Point)**

Source: Bloomberg

Note: Yield spread is the difference between the yields on 8 November and 9 June.

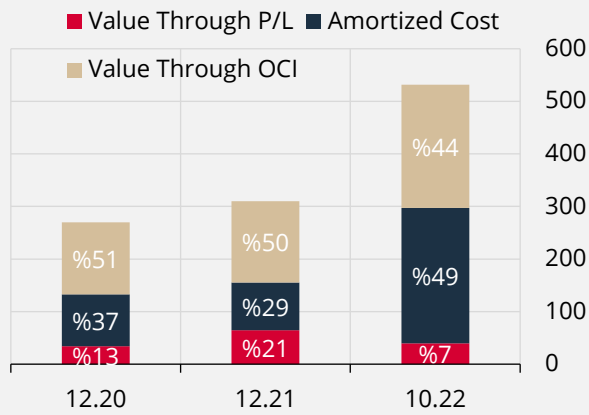
The yield curve shifted downward as the demand for fixed-rate securities strengthened following the tightening of collateral conditions in CBRT funding and the step regarding the securities maintenance for loans and FX deposits. Interest rates on long-term bonds decreased by almost 13.4 percentage points (Chart IV.3.I.3).

To be able to evaluate the effects of the demand for TL long-term, fixed-rate securities on banks' balance sheet management, it is important to identify the accounts under which these securities are classified in the balance sheet. Banks may classify them as securities at fair value through profit or loss, securities at fair value through other comprehensive income, or securities at amortized cost. While the valuation of securities under the first two classes is carried out at market prices, securities at amortized cost are monitored through balance sheet value and are not affected by the changes in market prices.

Between 2019 and 2021, banks held 55% of their TL fixed-rate securities under the portfolio of securities at fair value through other comprehensive income, and classified 35% of them as securities at amortized cost. After the securities maintenance step, 64% of the relevant GDDS with a remaining maturity of longer than four years and an original maturity of longer than five years was classified as securities at amortized cost. Thus, the share of securities at amortized cost in the TL securities stock has increased recently (Charts IV.3.I.4 and IV.3.I.5).

With the portfolio classification preferences of banks, the sensitivity of long-term fixed-rate securities to changes in interest rates remains limited, and possible effects of valuation on profitability and equity decrease. Revaluation of 36% of securities subject to the regulation may affect bank balance sheets through the channel of profitability or equity. However, the ratio of the relevant securities portfolio to total assets (1.6% as of September 2022) indicates that such an effect will be limited. Interest rate sensitivity analyses also reveal that the ratio of possible losses to equities after a positive interest rate shock is well below legal limits (See Chapter IV.3, Chart IV.3.8).

**Chart IV.3.I.4: TL Fixed-Rate Securities (TL Billion)**



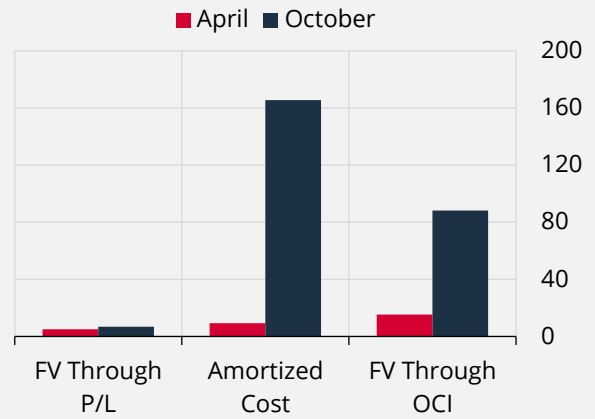
Source: CBRT

Last Observation: 10.22

Note: Percentages in columns refer to shares, and the right axis shows amounts.

Note: FV through P/L stands for securities at fair value through profit or loss, Amortized Cost for securities at amortized cost, and FV through OCI for securities at fair value through other comprehensive income.

**Chart IV.3.I.5: TL Long-Term Fixed-Rate GDDS\* (TL Billion)**



Source: CBRT

Note: Securities whose return is not contingent on interest have been included in fixed-rate securities.

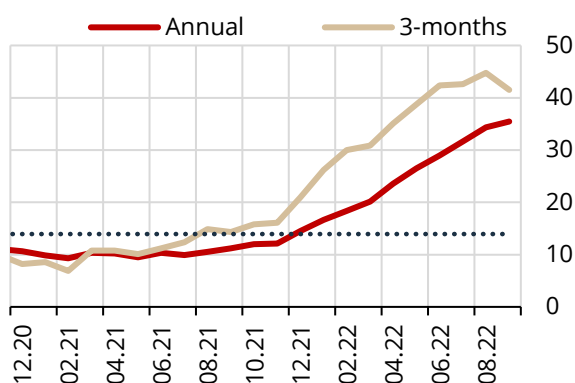
(\*) GDDS with a remaining maturity of longer than four years and an original maturity of longer than five years.

## IV.4 Profitability and Capital Adequacy

The strong profitability performance of the banking sector further increased in 2022.

The return on equity, which hovered below the 2011-2019 averages in 2021, increased to 35.4% in September 2022. Profitability performance in the third quarter of the year implies a higher annual return on equity at 41.5% (Chart IV.4.1). High return on equity performance was observed across the sector. Of 56 banks operating in the sector, the quarterly returns on equity of 35 banks, which account for 60% of sector assets, exceeded 30% (Chart IV.4.2).

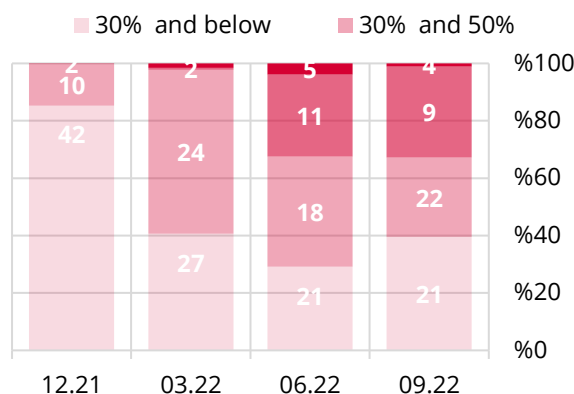
**Chart IV.4.1: Profitability Ratios (%)**



Source: CBRT Last Observation: 09.22

Note: The dashed line shows return on equity average for 2011-2019 period.

**Chart IV.4.2: Distribution of Banks Based on Return on Equity (Quarterly-Annualized, % Share in Assets)**

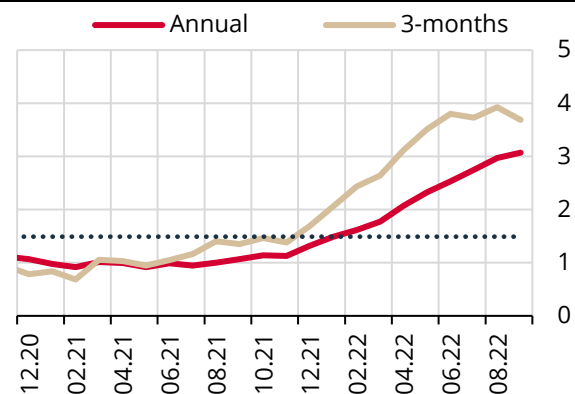


Source: CBRT Last Observation: 09.22

Note: Columns show the number of banks by return on equity group, the right axis shows their shares in sector assets.

As of September 2022, return on assets increased to 3.1%; while profitability performance of 3.7% in the third quarter points to strong return on assets (Chart IV.4.3). According to quarterly performance, out of 56 banks, 44 have return on assets above 2% and 26 have above 4% (Chart IV.4.4).

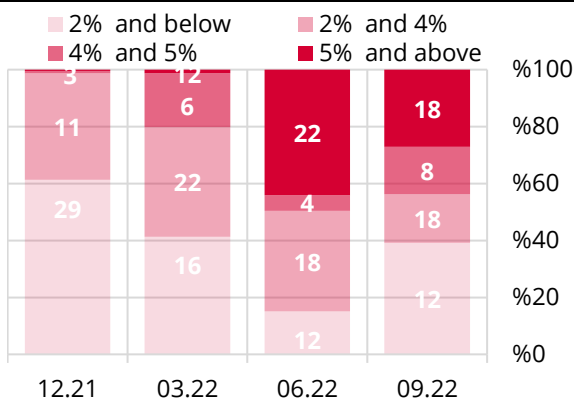
**Chart IV.4.3: Return on Assets (%)**



Source: CBRT Last Observation: 09.22

Note: Dashed lines represent the average of return on assets for 2011-2019 period.

**Chart IV.4.4: Distribution of Banks by Return on Assets (Quarterly-Annualized, % Share in Assets)**



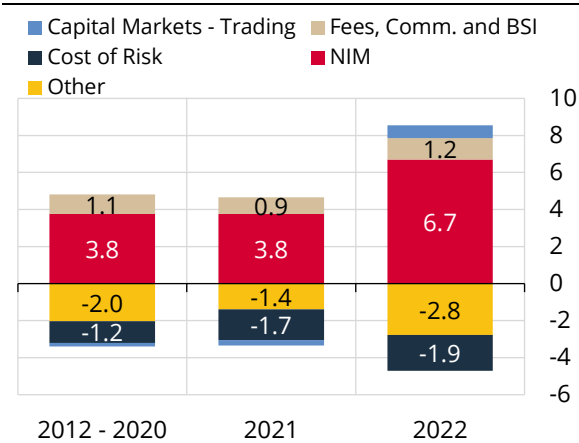
Source: CBRT

Note: The number of banks with return on assets are shown in columns and their share in the sector's assets are shown on the right axis.

**Net interest income made the largest contribution to the increase in return on assets.**

While the increase in profits from capital markets and foreign exchange transactions supports profitability; cost of credit risk and other provision expenses limited the increase in return on assets (Chart IV.4.5). Quarterly realizations present more recent performance on profit development. In 2022, the contribution of quarterly net interest income to return on assets continued to increase. While the sector continued to profit from capital markets and foreign exchange transactions, the decrease in provision expenses compared to the previous quarter reduced the downward effect of cost of risk on return on assets in the last quarter (Chart IV.4.6).

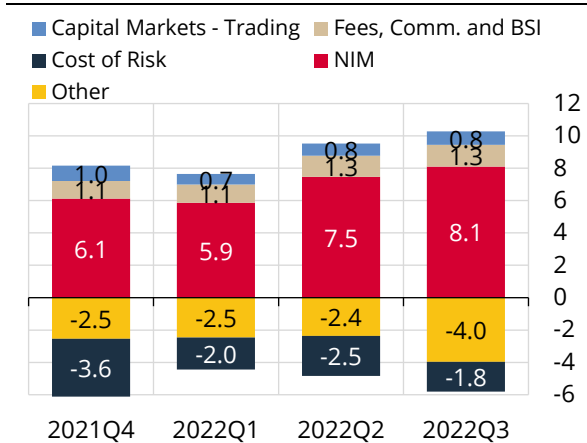
**Chart IV.4.5: Components of Return on Assets (Annualized, % Points)**



Source: CBRT Last Observation: 09.22

Note: The sum of general and specific loan provisions for the cost of credit risk. Calculations until 2022 are annual and the performance of the first 9 months are calculated based on the first 9 months.

**Chart IV.4.6: Components of Return on Assets (Quarterly, % Points)**



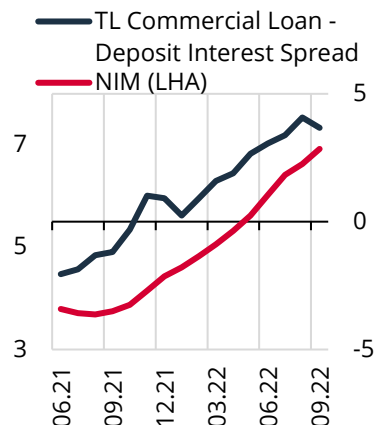
Source: CBRT Last Observation: 09.22

Note: The sum of general and specific loan provisions for the cost of credit risk. Income items are calculated as annualized 3-month-cumulative sums

**The Loan - deposit interest spread, loan growth and CPI-indexed securities have been the factors affecting the rise in net interest income.**

Net interest margin tends to increase in 2022 with the support of moderate TL funding costs. The difference between TL stock commercial loan rates and deposit interest rates was at +3.7 percentage points in September 2022 (Chart IV.4.7). The strong growth trend observed in TL commercial loans in the first half of the year increased the effect of the interest spread on banks' net interest income, while the slowdown in loan growth that came after macroprudential regulations lead to a relative reduction in the volume effect (Chart IV.4.8). While interest income on securities supported the NIM performance of the sector, the share of CPI-indexed securities decreased in recent months due to the macroprudential regulations and the banks' shift to fixed-rate securities (Chart IV.4.9).

**Chart IV.4.7: TL Commercial Loan - Deposit Rate Spread (Stock, % Points)**



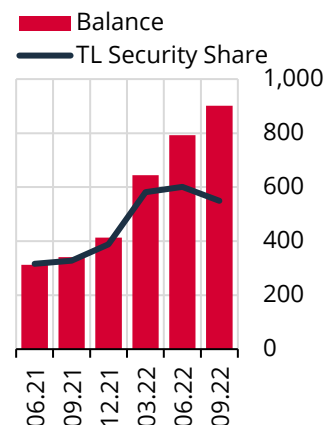
Source: CBRT Last Observation: 09.22

**Chart IV.4.8: TL Commercial Loan Growth (Annualized 13-Week Average, %)**



Source: CBRT Last Observation: 28.10.22

**Chart IV.4.9: CPI-Indexed Securities (TL Billion, % Share)**

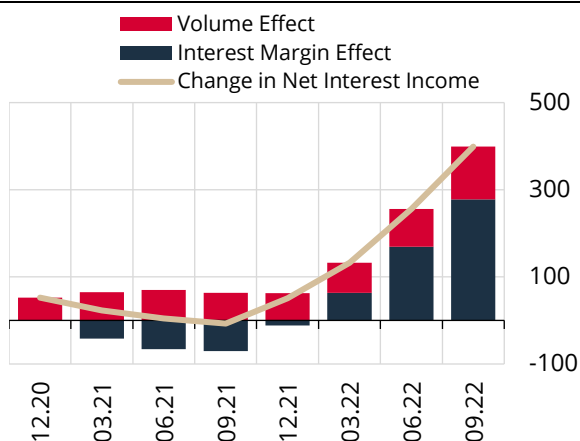


Source: CBRT Last Observation: 09.22

**The rise in net interest income continued to be driven by the loan-deposit rate spread.**

The contribution of the interest rate spread was more pronounced in the upward acceleration in net interest income in 2022 than the growth in interest-bearing assets (volume effect). Compared to the end of the second quarter of 2022, the stock TL deposit rates increased by 27 basis points and the stock TL commercial loan rates increased by 235 basis points. With the contribution of banks' profits from CPI-indexed securities, the 12-month net interest margin was 6.9% in September (Chart IV.4.7). In the second and third quarters of 2022, loan growth stemming from TL commercial loans also positively affected net interest income through the volume channel (Chart IV.4.10 and Chart IV.4.11).

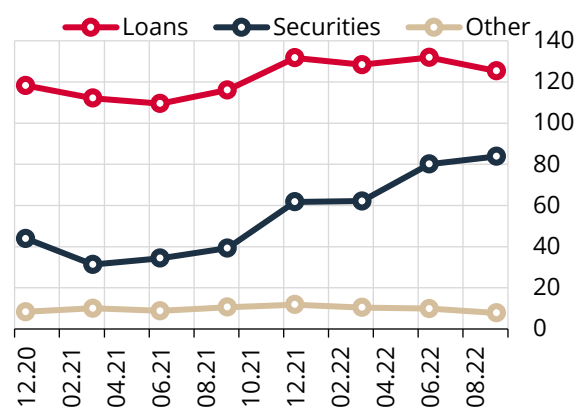
**Chart IV.4.10: Annual Change in Net Interest Income and Contributions (Annualized, TL Billion)**



Source: CBRT Last Observation: 09.22

Note: The hypothetical effect that a change in the interest margin will bear through the interest-earning asset balance in the relevant period is defined as the interest margin effect, and the remainder of the change in the net interest income of the same period is defined as the volume effect.

**Chart IV.4.11: Breakdown of Interest Income/ Total Interest Expenditures (Quarterly, %)**



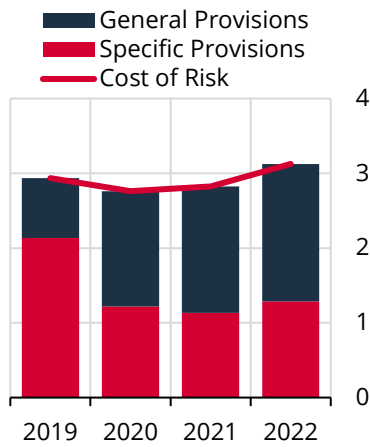
Source: CBRT Last Observation: 09.22

Note: Ratio of interest income from loans and liquid assets to total interest expenditures.

**The moderate course of NPL additions and strong NPL collections are another factor supporting the profit performance.**

Provisions increased as forbearance measures introduced during the pandemic were terminated at the end of 2021 owing to the cautious stance of banks against shocks. The cost of credit risk increased in 2022 due to the increase in both general and specific provision expenses (Chart IV.4.12). However, when NPL collections are also taken into account, it is observed that the asset quality outlook-driven profit pressure was limited. On the other hand, in third quarter of 2022, banks' free reserves amounting to TL 67.6 billion also affected profit developments. The ratio of credit card-related fees and commissions having the largest share in banking services revenues to assets increased by 14 basis points compared to 2021 and reached 0.6 % in September 2022 (Chart IV.4.13). The share of fees and commission income from loans in assets increased slightly in 2022 (Chart IV.4.14).

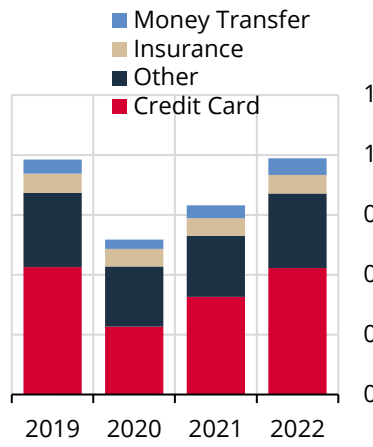
**Chart IV.4.12: Cost of Credit Risk**  
(Annualized, %)



Source: CBRT

Note: 2022 amounts were calculated by using the annualized 9 months period. Cost of risk is calculated by dividing the 9 months annualized general and specific provisions to average gross loans.

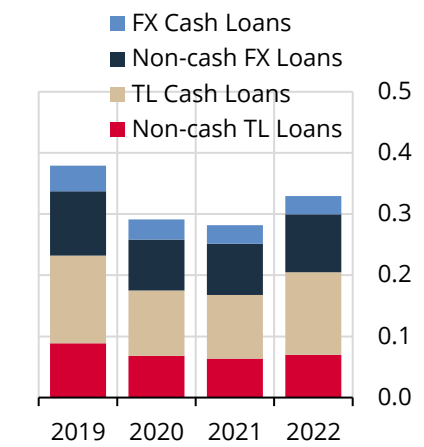
**Chart IV.4.13: Ratio of Banking Services Revenues to Assets (%)**



Source: CBRT

Note: 2022 figures reflect 9 months annualized data as of September 2022.

**Chart IV.4.14: Ratio of Fees and Commissions to Assets (%)**



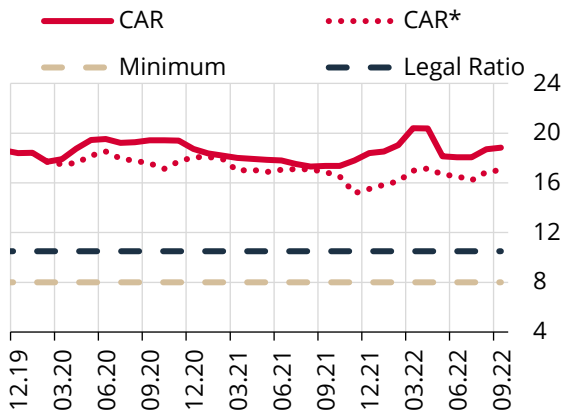
Source: CBRT

Note: 2022 figures reflect 9 months annualized data as of September 2022.

**The sector maintains capital ratios above legal limits. The additional capital above legal limits keeps banks strong against any adverse scenarios.**

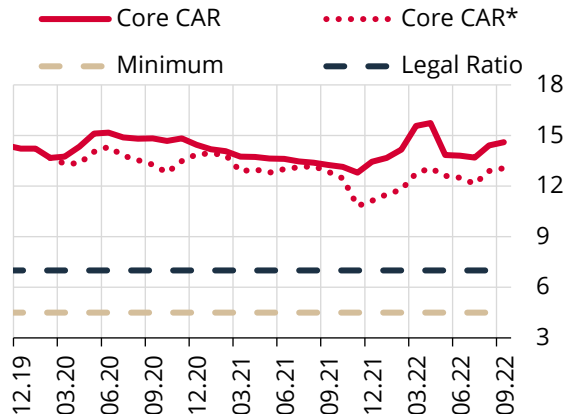
As of September 2022, the CAR of the sector is 18.8% and its core CAR is 14.6%. Since the last report period, the forbearance measures introduced by the BRSA regarding capital adequacy calculations have continued. In this context, the facility of not reflecting the negative net valuation differences of the securities whose fair value is reflected in other comprehensive income to the equity is preserved and instead of the current exchange rate, the end-2021 exchange rate is used in calculating credit risk. Excluding the mentioned forbearance measures, the CAR of the sector is 17% and the core CAR is 13.1%. Compared to the end of 2021, the CAR calculated without regulatory flexibilities increased by approximately 150 basis points, while the core CAR increased by approximately 194 basis points (Chart IV.4.15, Chart IV.4.16). The distribution of CARs by banks confirms that CARs are well above bank-specific legal rates ranging from 10.5% to 12.5%, and high capital ratios are observed across the sector (Chart IV.4.17).

**Chart IV.4.15: Capital Adequacy Ratio (%)**



Source: BRSA, CBRT Calculations Last Observation: 09.22

**Chart IV.4.16: Core Capital Adequacy Ratio (%)**



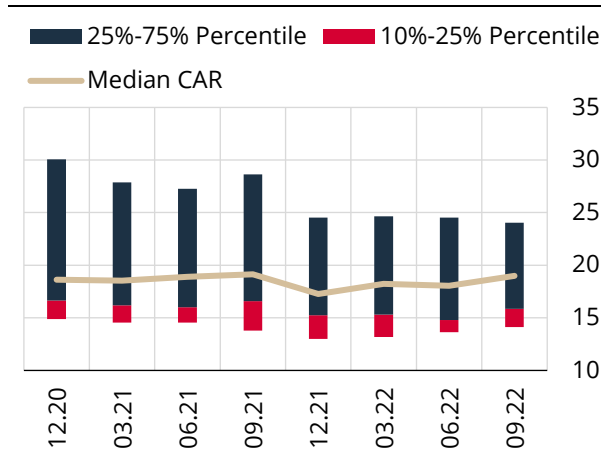
Source: BRSA, CBRT Calculations Last Observation: 09.22

\*Refers to CAR and core CAR adjusted for exchange rates and valuation flexibility. Note: Minimum ratios are those applied to the overall sector as of September 2022 and are higher for systemically important banks. Legal ratios are the sum of bank-specific countercyclical capital buffer, capital conservation buffer and systemically important bank buffer ratio in addition to the minimum ratio as per Basel III regulations.

**Banks' strong profitability performance supports the capital adequacy through the equity channel.**

The rise in the CAR of the banking sector that has been observed since the turn of the year was driven by the increase in regulatory capital. In the first nine months of 2022, the positive contribution of capital outweighed the negative impact of balance sheet expansion. The largest contribution to the increase in equity came from profitability. In this period, another regulatory capital item that made a high positive contribution to the CAR change was the banks' earnings that were reflected in their equity. The securities income, which increased on the back of the valuation of CPI-indexed securities in the portfolio of securities at fair value through other comprehensive income and decline in bond rates, supports core capital. Moreover, the capital support provided for public banks in 2022 and the rise in paid-in capital of some banks contributed to the increase in capital ratios. Meanwhile, the negative effect of total assets on capital adequacy decreased compared to 2021 due to the limited increase in the exchange rate compared to the previous period despite the increase in TL loan growth, the decrease in FX loans and the decline in parity. With the effect of applying a risk weight of up to 150% to consumer loans and credit cards, and increasing the risk weight applied to TL commercial loans to 200%, a higher risk weight effect was observed in the CAR (Chart IV.4.18)

**Chart IV.4.17: Breakdown of CAR (%)**

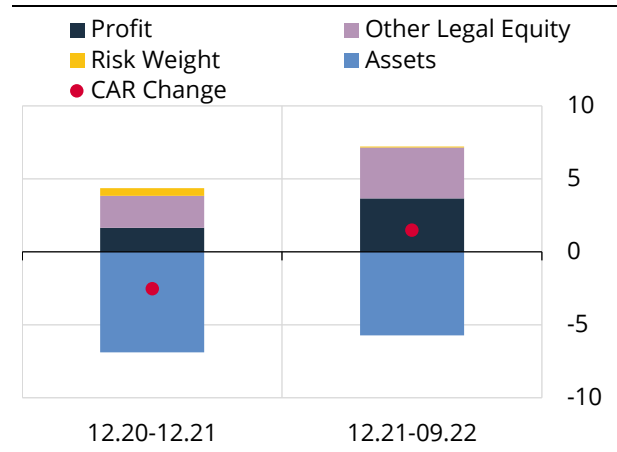


Source: BRSA, CBRT

Last Observation: 09.22

Note: CARs excluding BRSA's forbearance measures have been used.

**Chart IV.4.18: Contributions to CAR Change (%)**



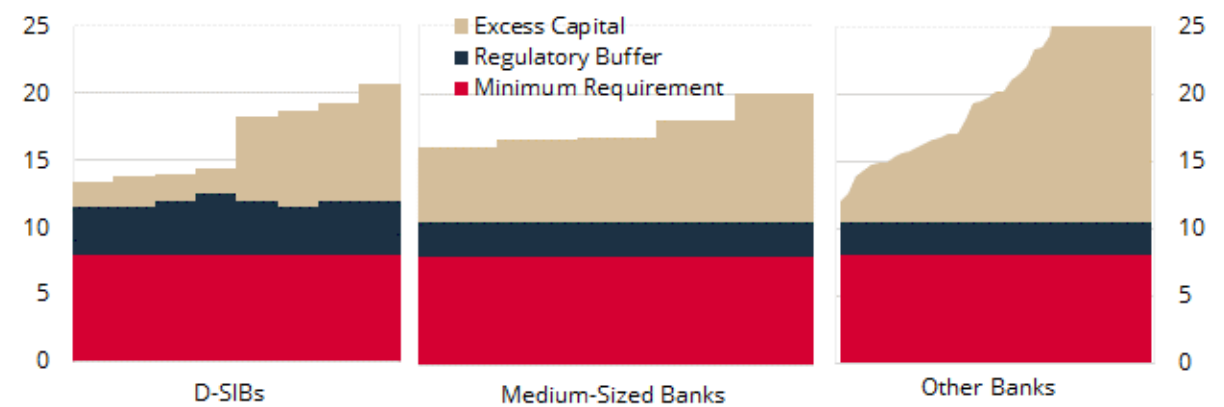
Source: BRSA, CBRT Calculations

Note: CARs excluding BRSA's forbearance measures have been used.

**Banks' capital accumulation continues in a widespread manner.**

High capital buffers are important for banks to cover unexpected losses during times of stress without breaching minimum rates and to continue credit supply for firms and households. The fact that Turkish banks have capital buffers above the legal ratios contributes to the management of risks that may spread to the whole system in the face of possible shocks (Chart IV.4.19).

**Chart IV.4.19: Sector's Regulatory and Additional Capital Buffers (%)**



Source: BRSA, CBRT

Last Observation: 09.22

Note: CARs were used except for BRSA interim measures. Banks with a CAR above 25% percent are not shown in the chart on the right.