III. Non-Financial Sector

III.1 Household Developments

Household indebtedness in Türkiye remains significantly below the average of advanced and emerging economies.

In the third quarter of 2024, the household debt/GDP ratio in Türkiye (9.8%) was significantly below those of peer countries as well as its average in the 2012-2022 period (Charts III.1.1 and Chart III.1.2). The decline in indebtedness in recent years is attributed to the relatively high growth in nominal GDP and the macroprudential policy framework for retail loans.[1] As well as the continuation of macroprudential measures on retail loans, the tight financial conditions have curbed the debt growth in 2024. Amid these tight financial conditions, the considerably lower level of personal indebtedness compared to other countries indicates that the risks driven by household debts are manageable.

Chart III.1.1: Household Indebtedness in Türkiye (Debt/GDP, %)

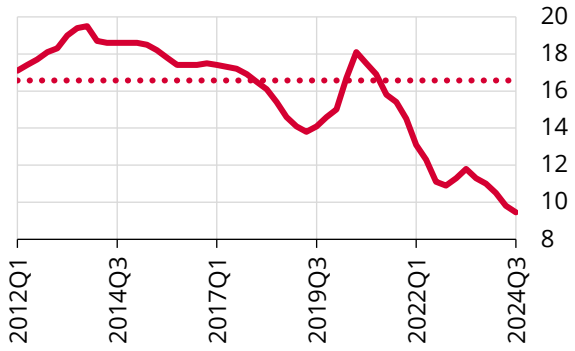
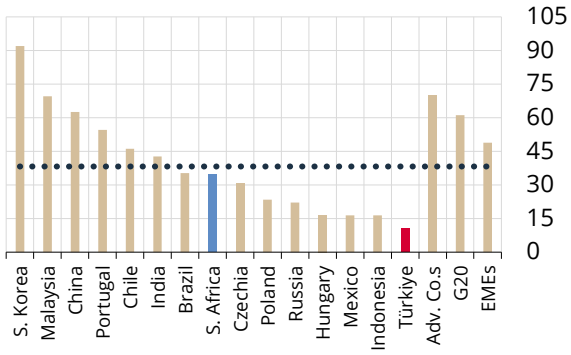


Chart III.1.2: Household Indebtedness in Peer Countries (Debt/GDP, %)



Source: BIS Last Observation: 2024Q1

Note: Household indebtedness is calculated as the ratio of the total of debt securities and loans of households and non-profit institutions serving households to GDP. The dashed line in Chart III.1.1 shows the average of the relevant values in the 2012-2022 period. Türkiye's data for 2024 (Q2-Q3) has been estimated in Table III.1.1. The country marked in blue has median indebtedness in the sample. The dashed line in Chart III.1.2 shows the 2024Q1 average of the relevant sample.

Chart III.1.3: Ratio of Housing Loans to GDP (%)

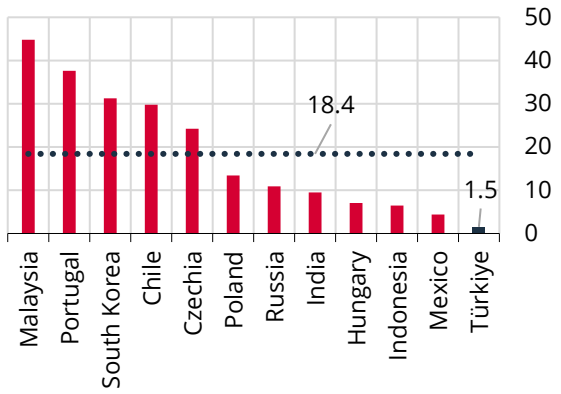
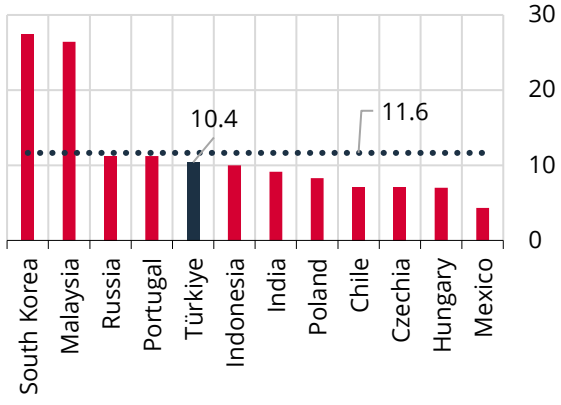


Chart III.1.4: Ratio of Retail Loans Excluding Housing Loans to GDP (%)



Sources: World Bank, Global Economy Last Observation: 06.24

Note: The ratio is calculated as the current total housing loan and housing loans-excluded retail loan balance divided by end-2023 GDP. Horizontal lines are the average values for selected countries. Retail loan balance excluding housing loans includes all other types of loans extended to households (such as PCC, vehicle loans, and student loans) except housing loans.

[1] The BRSA's regulations on general-purpose, housing and vehicle loans, and the CBRT's loan growth limits have significantly contributed to the effectiveness of this macroprudential policy framework.

A breakdown of indebtedness reveals that the ratio of housing loans to GDP is well below the average of other countries, while the ratio of retail loans excluding housing loans to GDP is slightly below the average of peer countries. The elevated course of house prices in Türkiye, macroprudential regulations imposed on housing loans, and high loan interest rates have driven a decline in the share of housing loans in recent years. Moreover, the fact that housing loans in Türkiye are extended with shorter maturities compared to advanced economies and that house sales are mostly non-mortgage sales has also led the housing loan/GDP ratio to remain below the averages of other countries (Chart III.1.3). The relatively high ratio of retail loans excluding housing loans to GDP in Türkiye is driven by the fact that the credit cards, which have begun to replace cash payments, have offered an installment payment facility particularly in an inflationary period, and by the increasingly widespread use of cards due to the developments in payment systems and financial technologies in the post-pandemic period (Chart III.1.4).[2]

Table III.1.1: Household Financial Liabilities

	09.23		03.24		09.24		3-Month Growth (Annualized)
	TRY Billion	Ratio to GDP	TRY Billion	Ratio to GDP	TRY Billion	Ratio to GDP	
Total Liabilities	2,580	11.3	3,224	10.5	3,736	9.5	38.8
Housing Loans	507	2.2	512	1.7	539	1.4	17.6
Vehicle Loans	96	0.4	102	0.3	90	0.2	-38.0
General-Purpose Loans	949	4.2	1,130	3.7	1,350	3.4	41.0
ODA	148	0.6	225	0.7	380	1.0	142.0
General-Purpose (excl. ODA)	801	3.5	904	2.9	970	2.5	16.3
Personal Credit Cards	988	4.3	1,433	4.7	1,695	4.3	50.6
Installment PCC	434	1.9	616	2.0	573	1.5	43.0
Non-installment PPC	554	2.4	817	2.7	1,122	2.9	54.7
AMC Receivables	41	0.2	47	0.2	62	0.2	71.9

Sources: CBRT, BRSA, TOKI, Authors' calculations
Note: Liabilities also include NPL. Value for 2024Q3 GDP is estimated.

The rise in household financial liabilities is driven by non-installment credit card debts and overdraft accounts (ODA).

Factors such as consumer inflation in core goods and services, ease of use through increased digitalization, the decreased use of cash and wider use of cards in payments, and banks' large limit increases have been influential in the growth in the non-installment credit card balance. Another important development leading to a rise in household liabilities is the utilization of ODA, which is not subject to a growth limit and offers an easily accessible financing opportunity to consumers for their short-term needs (Table III.1.1). On the other hand, following the increase in the maximum contractual interest rates applicable to credit card cash withdrawals (including ODA) and credit card shopping transactions, as well as the introduction of installment limits in the first half of 2024, the growth in installment PCC balances slowed significantly. With the regulation introduced in September, effective from November 1, 2024, maximum interest rates on personal credit cards were differentiated based on the credit card term debt. This regulation is expected to reduce the users' motivation for delaying due payments with high credit card limits, who account for half of the total PCC balance.[3]

[2] For further details, see CBRT Blog, Recent Trends in Card Spending Preferences - 23.09.2024.
[3] For further details, see CBRT Blog, Differentiation of Maximum Contractual Interest Rates for Personal Credit Cards Based on Balances - 27.09.2024.

Chart III.1.5: Households' Financial Liabilities to GDP Ratio (%)

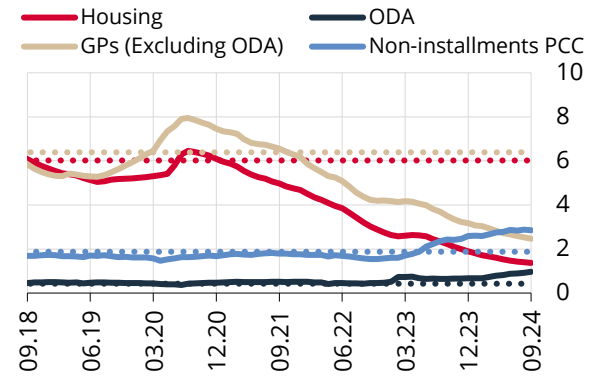
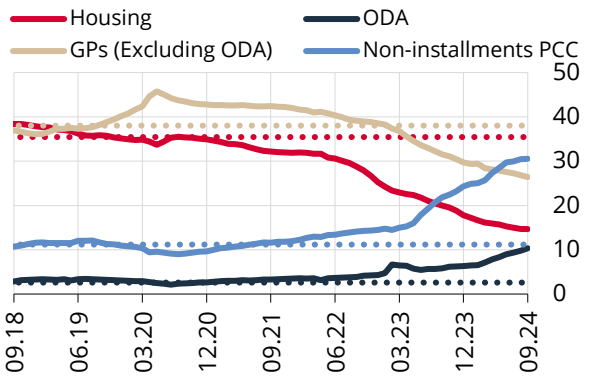


Chart III.1.6: Breakdown of Households' Financial Liabilities (% Share)



Sources: CBRT, BRSA, TURKSTAT Last Observation: 09.24

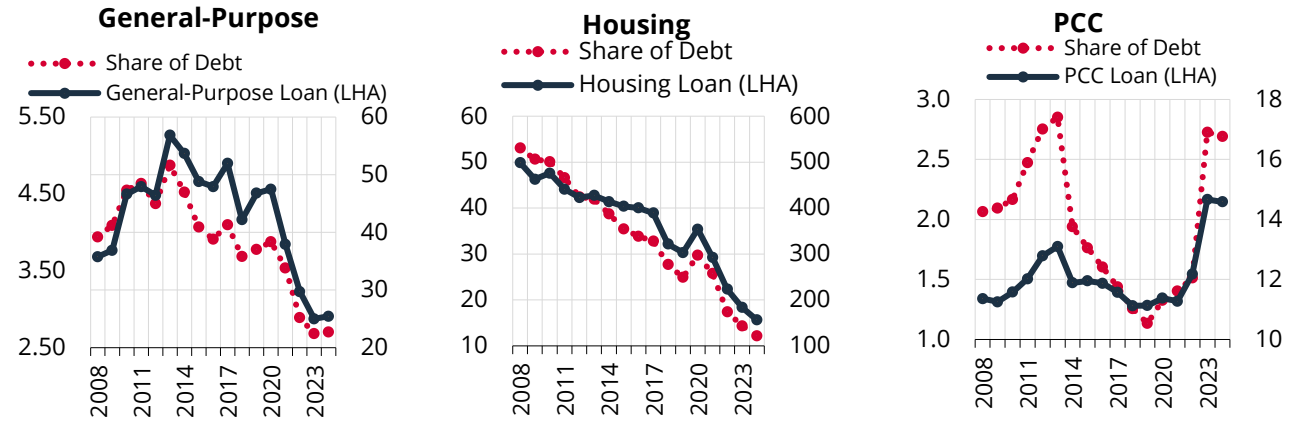
Note: Liabilities also include NPLs. 2024Q3 GDP is an estimated value. Dashed lines are the average values of the related series for the 2012-2022 period.

The downward trend in the ratios of housing loans and general-purpose loans excluding ODA to GDP continues (Chart III.1.5). The share of housing loans in retail loans, which was approximately 36% in the 2012-2022 period, fell below 15%. Meanwhile, non-installment PCC became the most widely used segment with a share of more than 30% in retail loans, outpacing the general-purpose loans excluding ODA. On the other hand, with its recently increasing use, the share of ODA reached 10% (Chart III.1.6).

While the balance of PCC debt has increased markedly in recent years, there was a slight decline in the real per capita PCC debt and the ratio of real per capita PCC debt to income.

The downward trend observed in the real per capita debt amount of general-purpose and housing loans, which account for nearly half of household indebtedness, has continued from 2013 into 2024 (Chart III.1.7). The fact that individuals' debt levels are in line with their income is considered to limit the risks to household debt repayment performance. However, it should be noted that this assessment is based on average income and thus may vary depending on borrowers' income profile and income distribution. On the other hand, the per capita PCC debt balance and its share in per capita income have been on an uptrend since 2020. This uptrend is considered to be driven by the widespread use of cards in payments due to the developments in payment technologies during this period and the increased cost of carrying cash in a high inflation environment.

Chart III.1.7: Per Capita Debt Balance in Consumer Loans and Share of Per Capita Debt in Disposable Income (%, Inflation-Adjusted TRY Thousand)



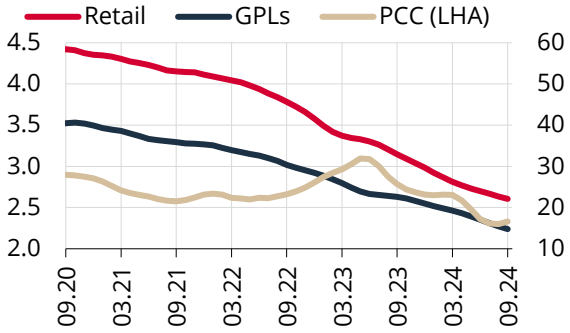
Sources: BRSA, TURKSTAT Last Observation: 09.24

Note: Dashed lines indicate the share of debt in per capita disposable income. Loan per capita is calculated by dividing the total loan balance in the related item by the number of borrowers aggregated at bank level. Per capita loan amount is deflated by the CPI. Real income is assumed to have remained unchanged in 2024. Per capita disposable income from the Household Consumer Tendency Survey is calculated by subtracting inter-household transfers (including alimony) and tax payments from income such as salaries, wages, rents, etc.

Average maturities of retail loans have been shortening, led by general-purpose loans and PCC.

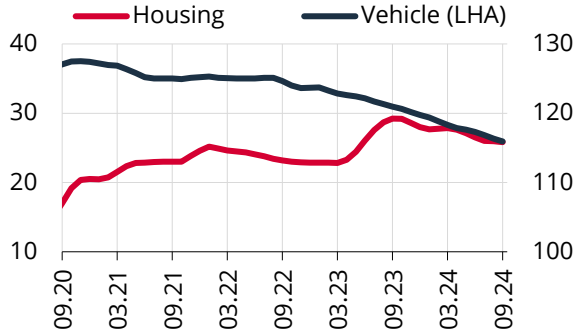
Average maturities in retail loans continue to shorten due to ongoing maturity constraints in general-purpose loans and the rise in the share of PCC (Chart III.1.8). This shortening is attributed to the marked decline in the share of housing loans and the macroprudential regulations imposed on vehicle loans based on the value of the vehicle (Chart III.1.9). The average maturity of retail loans, which had approached 60 months during the pandemic due to widely-utilized general-purpose and housing loans extended with long maturities and grace periods, decreased to 22 months as of September 2024. Coupled with high interest rates, the shortening in the average maturity of retail loans implies an additional tightening in households' financial conditions, which may lead to an increase in the credit risk of individuals with debt/income mismatch. In this context, the facility enabling delinquent PCC and general-purpose loan debts to be restructured up to 60 months is considered to help slow the additional deterioration in credit risk.

Chart III.1.8: Average Maturity in Retail Loans (Months)



Source: CBRT

Chart III.1.9: Average Maturity in Sub-Categories of Retail Loans (Months)

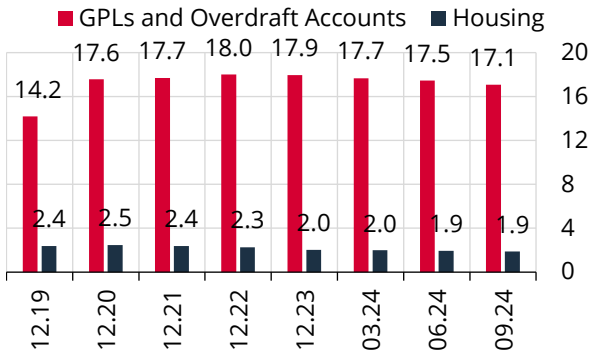


Last Observation: 09.24

The number of housing and general-purpose loan borrowers has been declining moderately.

Due to the still-high interest rates on general-purpose loans and the restrictive role of macroprudential measures, the number of borrowers has been decreasing (Chart III.1.10). This decrease is mainly driven by the segment of general-purpose loan borrowers with debts below TRY 100,000. In the current Report period, the number of borrowers with debts up to TRY 100,000 decreased by 940,000 to 9.2 million, while the number of borrowers with debts above TRY 100,000 increased by 300,000 to 2.9 million (Chart III.1.11). In the housing loan market, the elevated course of interest rates as well as the 75% reduction in the loan-to-value ratio for households' purchases of the second or more houses are considered to have been effective in the decline in the number of loan debtors.

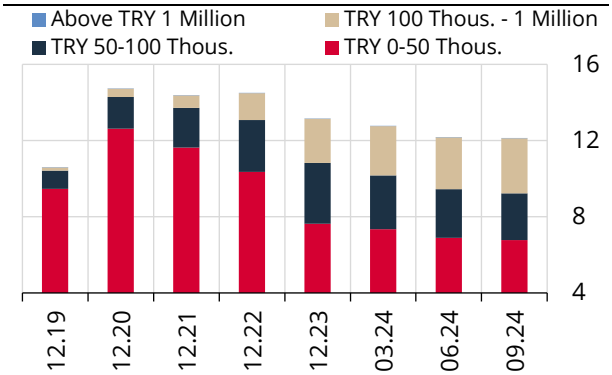
Chart III.1.10: Number of People with Consumer Loan Balance (Million People)



Sources: Risk Center, CBRT Last Observation: 09.24

Note: Reports the number of individual general-purpose and housing loan borrowers in the banking sector. General-purpose loans include ODA.

Chart III.1.11: Number of General-Purpose Loan Borrowers by Amount (Million People)



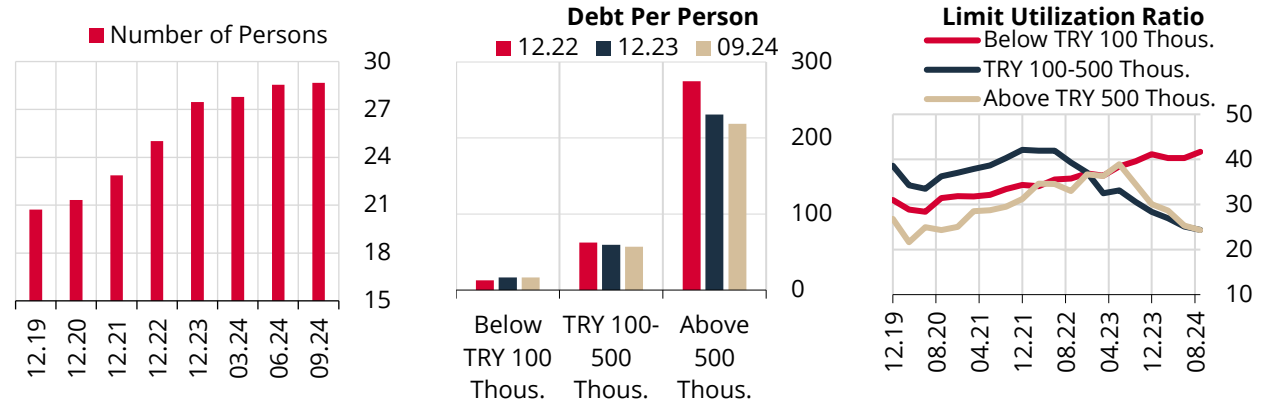
Sources: Risk Center, CBRT Last Observation: 09.24

Note: Amount brackets show the outstanding general-purpose loan debt amounts per person at all banks. The number of people is the total number of people in the relevant bracket. ODA and general-purpose loans classified as NPLs are excluded.

While the number of PCC debtors continues to grow at a decelerated rate, the limit utilization rate of cards with high limits is decreasing due to increases in limits.

The number of active credit card users approached 29 million as of September 2024. In this period, banks continued to raise credit card limits significantly. Actually, in high credit card limit groups with more significant limit increases, the per capita debt and the ratio of debt to the card limit decreased despite the increases in balances (Chart III.1.12). The decline in the per capita card balance was driven by the fact that a higher number of people shifted to the upper limit groups. In cards with a limit below TRY 100,000, the limit utilization rate continues to rise due to the price increases in goods and services.

Chart III.1.12: Number of People Actively Using PCC, Debt Per Person by Card Limit, Card Limit Utilization Rate (Million People, TRY Thousand, %)



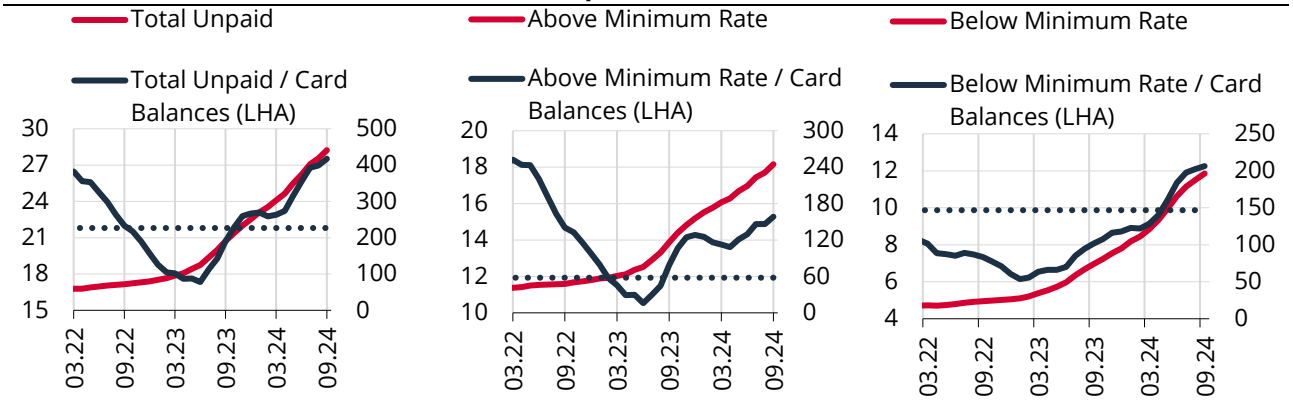
Sources: Risk Center, CBRT Last Observation: 09.24

Note: People with a credit card balance of zero have been excluded. The chart on debt per person shows the per capita balances of persons in the relevant limit brackets.

The ratio of unpaid credit card debt amount to the total credit card debt has exceeded its historical average.

The ratio of unpaid debt to total card balance rose to 15.3% on credit cards for which a payment of the minimum payment amount or more was made, and the ratio of unpaid debt to total card balance increased to 12.2% on credit cards for which less than the minimum payment amount was paid or no payment was made at all (Chart III.1.13). Thus, the ratio of total delinquent debts to total PCC balance climbed to 27.5%, exceeding its historical average. With increased credit card interest rates, not paying the credit card debt on time may increase the debt service burden, especially for individuals with income/borrowing mismatch. On the other hand, differentiation of the maximum contractual interest rate on credit cards based on the term debt, and the PCC debt restructuring facility are expected to have a favorable impact on individuals' payment performance.

Chart III.1.13: Personal Credit Cards with Unpaid Balances (TRY Billion, %, 3-Month MA)



Source: CBRT Last Observation: 09.24

Note: "Above Minimum Rate" refers to the total outstanding debt for PCCs paid at or above the minimum payment rate, and "Below Minimum Rate" refers to the total outstanding debt for PCCs for which a payment is made below the minimum payment rate. Dashed lines show the average of the relevant ratios for the 2012-2019 period.

The ODA balance and the share of ODA in general-purpose loans continued to increase, which is thought to be driven by the regulation imposing a monthly growth limit on general-purpose loans excluding ODA. The ODA instrument, for which an installment facility has been offered in recent months, has had a share of nearly 30% in general-purpose loans. The share of cash advance balance in PCC debt, which had approached 25% in the first half of 2023, dropped sharply in the first half of 2024 following the increase in the cash withdrawal interest rate and the reduction in cash withdrawal limits (Charts III.1.14 and III.1.15).

Chart III.1.14: Periodic Development in ODA (TRY Billion, %)

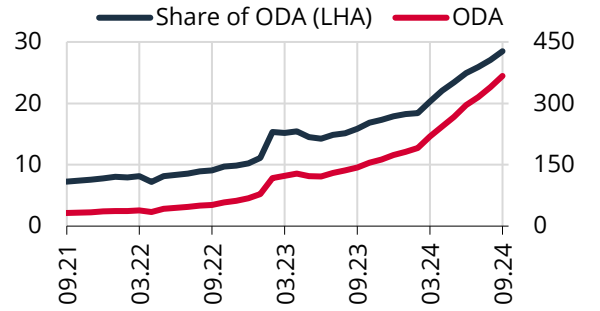
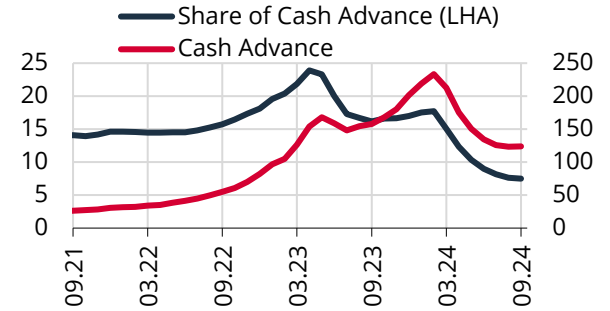


Chart III.1.15: Periodic Development in Cash Advances (TRY Billion, %)



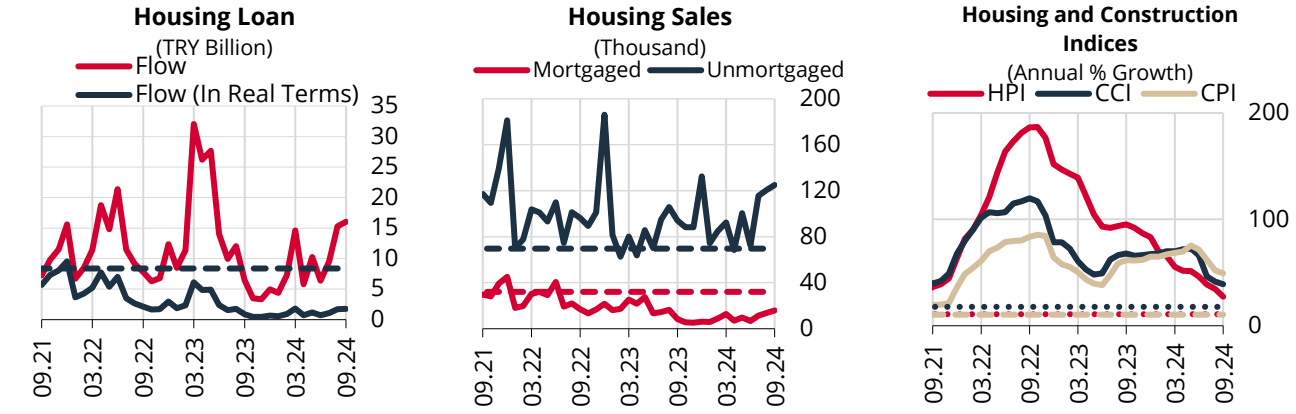
Source: BRSA Last Observation: 09.24

Note: "Share of ODA" is the share of real persons' ODA in general-purpose loans.

Housing loan utilization remains below its historical average, while houses are sold mostly without mortgages.

The current level of house prices, the continued tightening in financial conditions, macroprudential policies for multiple home ownership, and the long period since a revision in loan-to-value ratios have limited housing loan utilization (Chart III.1.16). Against this backdrop, the annual rate of increase in house prices continued to decelerate, falling below the increases in the construction cost index (CCI) and the CPI. However, house sales and, accordingly, housing loan utilization have accelerated somewhat in recent months. Despite this acceleration, the share of mortgaged sales in total house sales has been significantly low in the recent period.

Chart III.1.16: Housing Loans, House Sales and House Prices



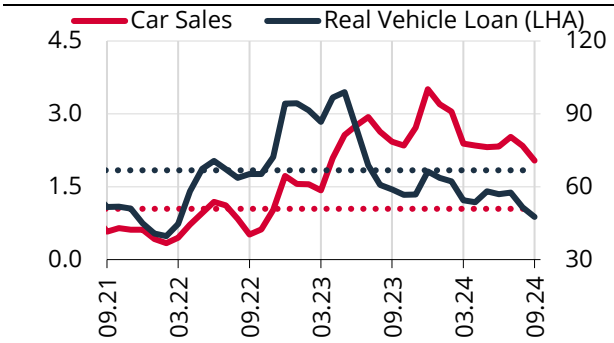
Source: CBRT Last Observation: 09.24

Note: Housing loans are shown in terms of monthly flow disbursements. Dashed lines show the average annual index changes in the 2012-2019 period (2016-2019 period for the CCI), real housing loans extended, and related house sales. Data have been deflated by the house price index (HPI).

While vehicle loan utilization remains weak, campaigns continue to boost new car sales.

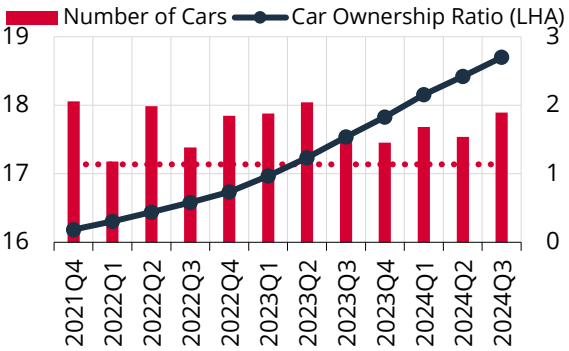
Sales of new cars still hover above their historical average despite a decline in recent months, while loan utilization has slowed (Chart III.1.17). Ongoing vehicle sales campaigns by firms as well as the normalization in vehicle supply boost the sales of new cars. On the other hand, in the loan-to-value ratio regulation, which is applied on a gradual basis according to vehicle prices, has significantly slowed the vehicle loan utilization. While the number of vehicles changing hands rose in the third quarter of 2024, the vehicle ownership ratio continued to increase as in recent years and approached 19% (Chart III.1.18).

Chart III.1.17: Vehicle Loans and New Car Sales (Thousand Units, TRY Billion, 3-Month MA)



Sources: ODD, BRSA Last Observation: 09.24
Note: Data for monthly flow vehicle loans of banks and financing companies, and new car sales have been used. Deflated by the vehicle prices sub-index of the CPI. Dashed lines show the average real vehicle loan disbursements and car sales between 2012 and 2019.

Chart III.1.18: Number of Used Car Sales and Car Ownership Ratio (Million Units, %)



Source: TURKSTAT Last Observation: 2024Q3
Note: Used car sales refer to vehicles whose ownership has changed hands once or more through public notaries. Shows the quarterly sums of the number of vehicles changing hands. Dashed line shows the average number of used car sales amounting to 1.1 million between 2012 and 2019 in quarterly periods. Car ownership ratio is the ratio of cars registered in traffic to the total population.

The share of TRY deposits and mutual funds in households' financial asset composition increases, whereas that of equities declines.

Among household financial assets, the ratios of TRY savings deposits and mutual funds to GDP remained on the rise (Table III.1.2). In this period when the shares of TRY deposits and non-deposit financial instruments increased, the share of FX-protected instruments decreased to 7.2%. In addition, there has been a significant increase in investor interest in low-risk, easily accessible liquid money market funds, which offer higher return compared to TRY deposits. The share of these funds has risen by 4.4 points since end-2023 to almost 6%. The rise in the share of TRY savings deposits is expected to continue on the back of the high levels that deposit and money market fund interest rates have reached in real terms following the monetary tightening, as well as the improvement in exchange rate expectations.

Table III.1.2: Household Financial Assets

	09.23		03.24		09.24		3-Month Growth (Annualized)
	TRY Billion	Ratio to GDP	TRY Billion	Ratio to GDP	TRY Billion	Ratio to GDP	
Total Assets	**10,613**	**46.5**	**12,995**	**42.3**	**15,540**	**39.5**	**40.7**
TRY Savings Deposits	1,833.6	8.0	3,197.7	10.4	5,072.4	12.9	90.2
KKM and DDM	2,495.5	10.9	1,617.2	5.3	1,114.3	2.8	-63.8
FX Savings Deposits	2,091.8	9.2	2,566.9	8.4	2,356.2	6.0	22.9
- (Billion USD)	*76.7*		*79.8*		*69.4*		*3.8*
Precious Metal Deposits	707.9	3.1	1,065.1	3.5	1,299.5	3.3	132.4
- (Billion USD)	*25.9*		*33.1*		*38.3*		*96.4*
Bonds and Bills	250.4	1.1	308.1	1.0	336.6	0.9	25.2
Mutual Funds	1,436.6	6.3	2,318.7	7.5	3,408.7	8.7	123.1
Pension Mutual Funds	593.3	2.6	803.0	2.6	1,006.7	2.6	51.6
Other Mutual Funds	843.3	3.7	1,515.7	4.9	2,402.0	6.1	165.4
Money Market Funds	128.5	0.6	290.9	0.9	889.5	2.3	703.3
Equity Securities	1,652.2	7.2	1,801.5	5.9	1,751.1	4.4	-33.2
Repo	16.2	0.1	23.5	0.1	30.7	0.1	293.8
Currency in Circulation	129.0	0.6	96.2	0.3	170.5	0.4	45.7

Sources: CBRT, MKK, PMC
Note: Month-end exchange rates have been used. Pension mutual funds show the total funds of participants in the Voluntary Participation System (IPS) and the Auto Enrollment System (AES), minus the state contribution. Deposits refer to resident real persons' deposits. Estimated value for 2024Q3 GDP data.

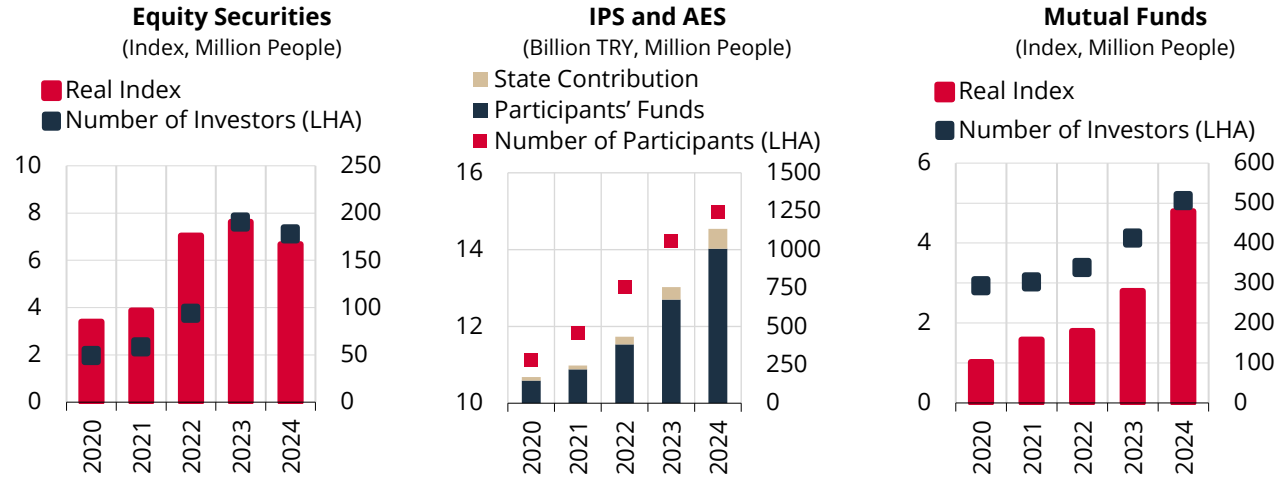
The share of households' holdings of equities, pension funds and mutual funds in their total financial assets has exceeded 33%.

Households' tendency to invest in the equity market, which had strengthened in recent years, has weakened in the recent period. The number of equity investors, which hit a historic peak at 8.5 million in the last quarter of 2023, dropped to 7.1 million at the end of September 2024. The real index of household equity portfolio decreased by more than 10% compared to end-2023.

Funds in the Voluntary Participation System and Automatic Enrollment System, which are among the major asset items of households, continue to increase at a moderate pace. Likewise, the number of participants in the pension system rose by approximately 5% to 15 million compared to the end of last year. Households' tendency to save in long-term instruments in long-term instruments is expected to contribute to financial stability.

Households' holdings of mutual funds continue to increase steadily. The number of investors in mutual funds was 5.1 million as of September 2024, while the size of mutual funds reached TRY 2.4 trillion. Compared to the end of 2023, the real index of households' mutual funds portfolio went up by more than 70% (Chart III.1.19).

Chart III.1.19: Changes in Households' Non-Deposit Assets



Sources: MKK, PMC

Last Observation: 09.24

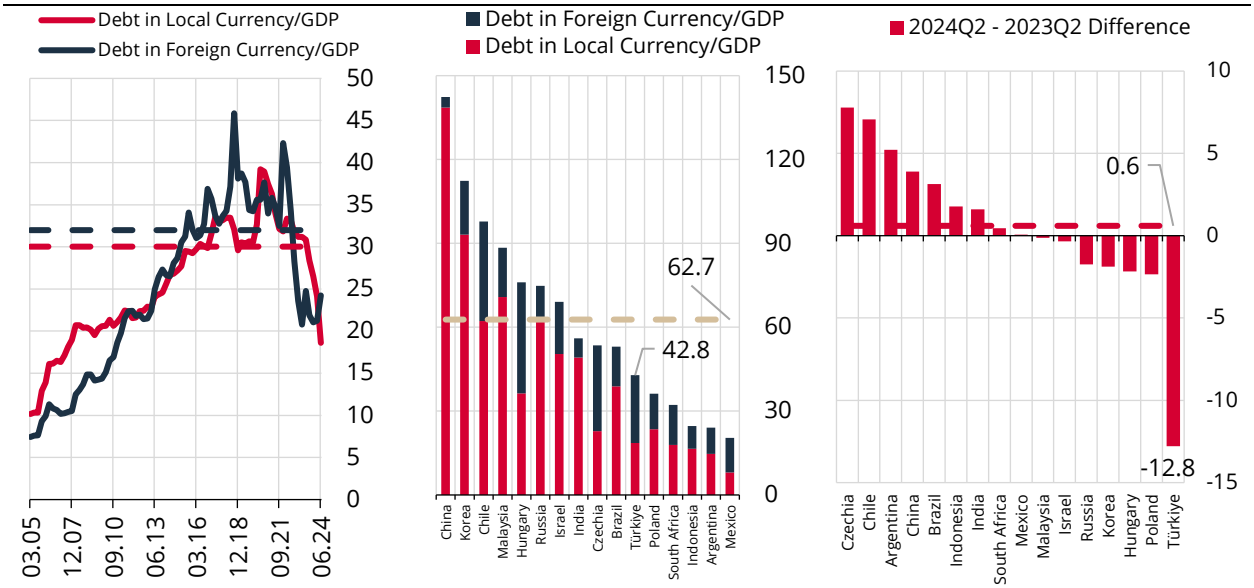
Note: The real index for equities and mutual funds is CPI-adjusted and indexed to 100 in January 2021. IPS and AES data are in aggregated terms, and the number of participants has been aggregated. Real index values for equities and mutual funds are 3-month moving averages.

III.2 Corporate Sector Developments

Financial indebtedness of corporate sector firms declined significantly.

The ratio of firms' Turkish lira debt to GDP continues to decline, whereas the FX-debt-to-GDP ratio has increased slightly. Meanwhile, the ratios of the corporate sector's Turkish lira debt and FX debt to GDP have increased slightly but remain below their historical averages. Over the past one-year period, the corporate sector debt-to-GDP ratio decreased by around 13 percentage points, while indebtedness in peer countries edged up (0.6 percentage points). Consequently, Türkiye's corporate sector debt-to-GDP ratio (42.8%) has fallen significantly below the average of peer countries (62.7%) (Chart III.2.1).

Chart III.2.1: Indebtedness Indicators of the Corporate Sector and Peer Countries (%)



Source: IIF Last Observation: 06.24

Note: Dashed lines on the left chart denote the 2012Q4-2021Q4 historical average of the relevant ratio. The middle chart is based on the breakdown of debt in local and foreign currencies. Countries are presented in descending order according to their 2024Q2 Total Debt/GDP ratios. Dashed line shows the average of peer countries' indebtedness in 2024Q2. The chart on the right shows the average of the 2024Q2-2023Q2 change in peer countries.

The ratio of firms' Turkish lira loans to GDP continued to decline due to the weakening loan demand amid rising Turkish lira financing costs and the measures taken to limit Turkish lira loan growth. Meanwhile, the ratio of firms' FX loans to GDP rose moderately due to the relatively low FX financing costs and the measures taken against FX loan growth despite the improved exchange rate expectations. Over the past one-year period (between August 2023 and August 2024), the ratio of the corporate sector's financial debt to GDP fell by 8.8 percentage points to 37.8%. The decline in the financial debt ratio was mainly driven by Turkish lira loans and external financing (8.8 percentage points in total), while domestic FX loans recorded a limited decline (0.4 percentage points) (Table III.2.1).

The corporate sector maintained its relatively low financial leverage level.

In addition to the decline in the financial liabilities of the corporate sector, the ratio of financial assets to GDP also declined slightly, as firms turned to internal financing due to high credit costs. Despite the decline in firms' Turkish lira debt, the financial leverage ratio edged up as a result of the rise in FX debt and the slowdown in asset growth (Chart III.2.3). The current levels of the leverage ratio indicate that firms are resilient to tighter financial conditions and rising financing costs, while also limiting the potential risks to financial stability.

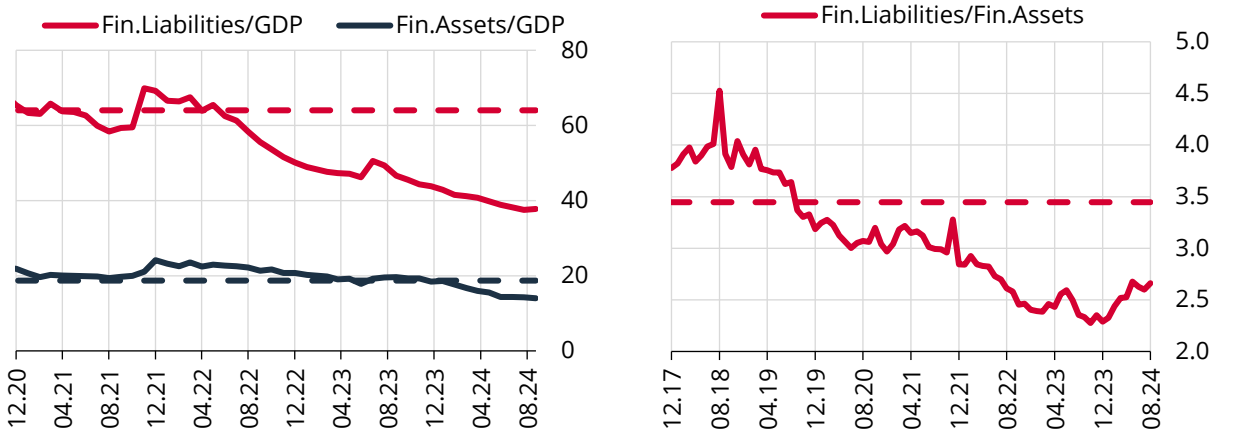
Table III.2.1: Financial Liabilities of the Corporate Sector (Billion TRY)

	08.23		05.24		08.24		3-Month Growth (Annualized) (%)
	Billion TRY	Ratio to GDP	Billion TRY	Ratio to GDP	Billion TRY	Ratio to GDP	
I. Domestic Loans (i+ii)	**7,198.1**	**33.2**	**9,423.7**	**28.0**	**10,259.7**	**27.0**	**40.5**
i. Turkish Lira	4,333.8	20.0	5,139.6	15.4	5,417.5	14.3	18.4
A. Bank	4,023.7	18.6	4,735.9	14.1	4,933.2	13.0	17.7
B. NBFI	239.4	1.1	336.2	1.0	342.1	0.9	7.1
C. Bonds Issued	70.8	0.3	121.5	0.2	142.3	0.2	88.2
ii. FX (FX-indexed loans included)	2,864.3	13.2	4,230.1	12.6	4,842.2	12.8	71.7
USD Equivalent (A+B+C)	107.4		131.7		142.8		38.2
A. Bank	102.2		126.5		137.1		38.1
B. NBFI	4.6		4.6		5.1		48.3
C. Past-Due Loans Taken Over by SDIF	0.5		0.5		0.5		0.7
II. External Loans	**2,699.6**	**12.5**	**3,301.0**	**9.8**	**3,652.2**	**12.3**	**49.8**
USD Equivalent	*101.2*		*102.7*		*107.7*		*20.6*
III. Bonds Issued Abroad	**210.2**	**1.0**	**294.7**	**0.9**	**429.0**	**1.1**	**349.1**
USD Equivalent	*7.9*		*9.2*		*12.6*		*261.5*
Total Financial Debt (I+II+III)	**10,108.0**	**46.6**	**13,019.4**	**38.6**	**14,340.8**	**37.8**	**47.2**
For Info: Total FX Loans (Billion USD)	*216.5*		*243.6*		*263.1*		*21.5*

Sources: CBRT, BRSA Last Observation: 08.24

Note: The "Ratio to GDP" columns show the ratio of the relevant items to GDP. The last column denotes the annualized three-month change between May 2024 and August 2024. The last row shows the total FX loan balance difference between August 2023 and August 2024.

Chart III.2.3: Financial Debts and Assets of the Corporate Sector (%, Ratio)



Source: CBRT Last Observation: 08.24

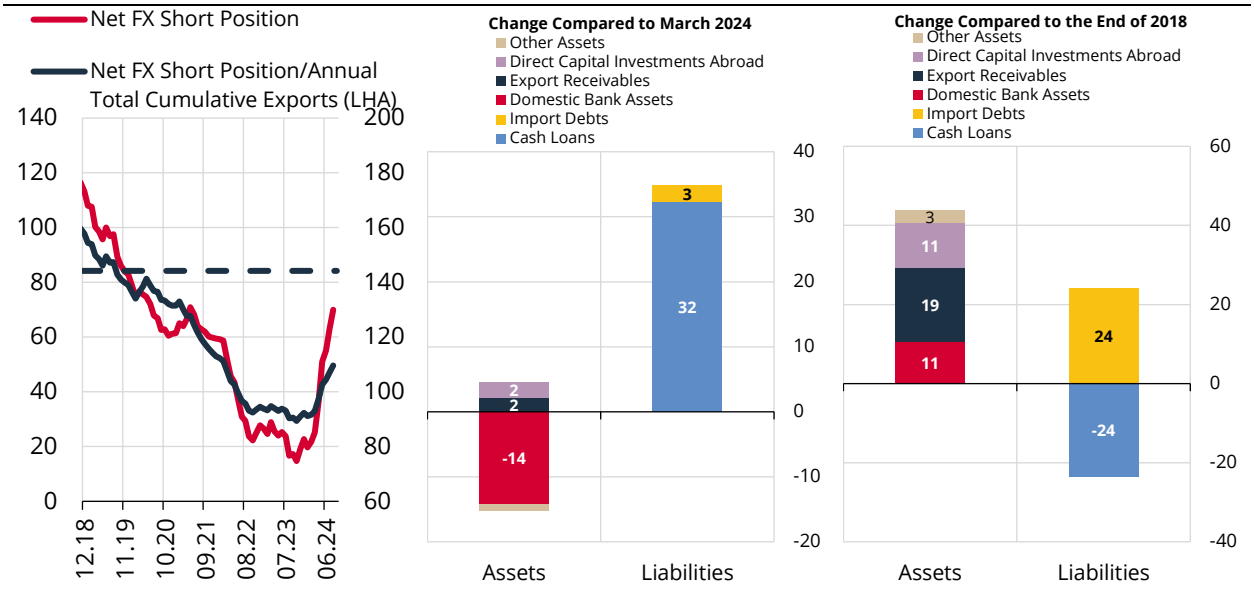
Note: Financial liabilities include the corporate sector's domestic and external loans, leasing, factoring debts, and bond issuances. Financial assets include Turkish lira and FX deposits and securities, but direct capital investments abroad and export receivables are not included. The CBRT calculates the 12-month cumulative GDP figures. The latest GDP data is the CBRT's estimate. Calculations are based on month-end foreign exchange buying rate. Dashed lines denote the historical average of the relevant ratio between December 2017 and December 2021.

Following the rise in FX loans and the decline in FX assets, the corporate sector's FX short position increased.

The increase in the FX short position of the corporate sector began in the last quarter of 2023, reaching USD 130 billion in August 2024, up from USD 75 billion in October 2023. The ratio of the FX short position to

12-month exports rose to 50% but remained low and below its historical average (84%). The increase in the net FX short position was driven by the rise in FX loans extended by domestic banks to firms and the decline in FX deposits at domestic banks (Chart III.2.4). In light of the amended regulation in July 2024, aiming to curb the rising risks in FX loans, the monthly growth limit for FX loans was reduced to 1.5%. In the period ahead, the increase in the FX short position is expected to be more moderate amid the rebalancing in FX loans.

Chart III.2.4: FX Position of the Corporate Sector (Billion USD, %)

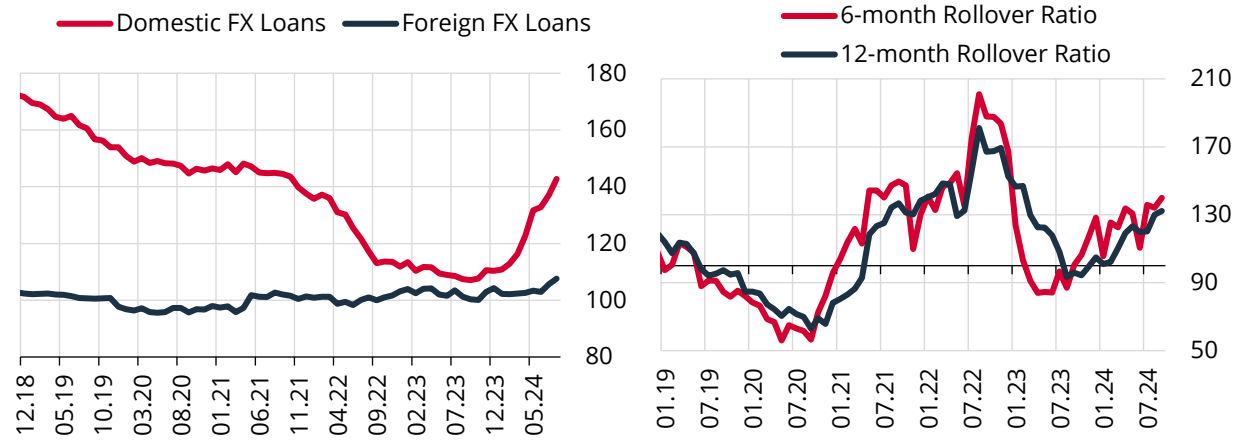


Source: CBRT Last Obsv.: 08.24 Source: CBRT Last Obsv.: 08.24 Source: CBRT Last Obsv.: 08.24

Note: Export values are the sum of 12-month cumulative amounts. The change in the "Other Assets" item covers the change in the assets and securities with banks abroad. Dashed line denotes the historical average of the Short Position/Export ratio between December 2017 and December 2021.

Corporate sector firms continued to have access to external financing in the current reporting period, and their external debt rollover ratio rose above 130% (Chart III.2.5). The improvement in the macroeconomic outlook, the falling country risk premium, and rating upgrades have been instrumental in bolstering corporate sector firms' access to external financing. Moreover, the increase in firms' bonds issued abroad has fueled the upward trend in external debt rollover ratios.

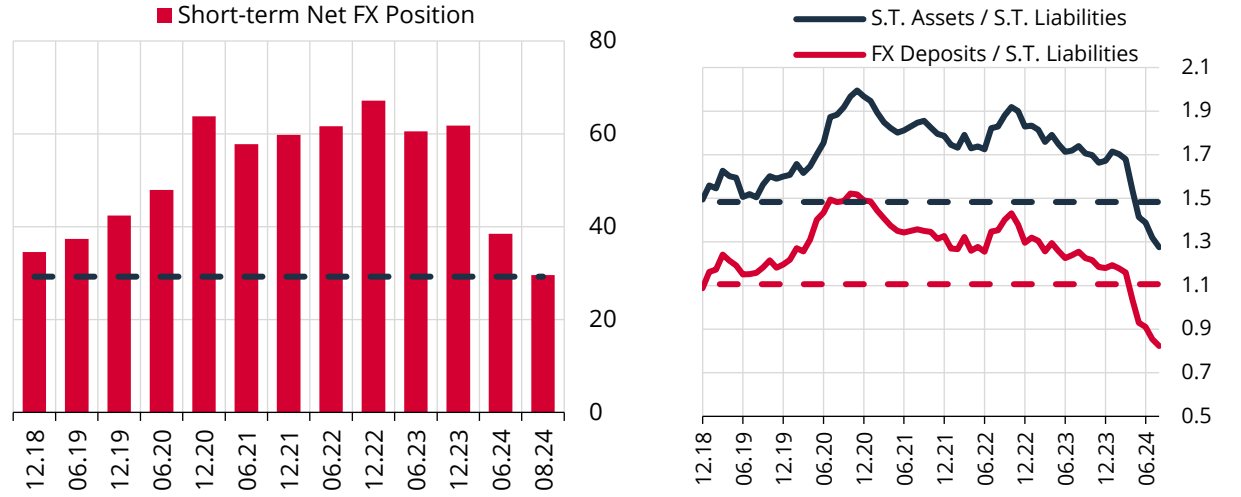
Chart III.2.5: Indicators of Corporate Sector's FX Loans and Debt Rollover (Billion USD, %)



Source: CBRT Last Observation: 08.24 Source: CBRT Last Observation: 09.24

Note: External debt rollover ratio shows the ratio of the cumulative external borrowing over a 12-month and 6-month periods to the debt repayment in the same period.

Chart III.2.6: Indicators of Corporate Sector's Exchange Rate Risk (Billion USD, Ratio)



Source: CBRT

Last Observation: 08.24

Note: FX deposits are the total amount of FX deposits held by resident corporate sector firms at domestic and foreign financial institutions. Net FX position calculations include FX-protected deposits. Dashed lines show the historical average of the relevant data between January 2012 and December 2021. ST stands for "short-term."

Firms' short-term net FX long position decreased, while the capacity of short-term FX assets to cover liabilities fell below its historical average.

The short-term net FX position, which was USD 61.8 billion at end-2023, fell below USD 30 billion as of August 2024 (Chart III.2.6). Despite this decline, the short-term net FX position remains slightly below its historical average. As firms' financial assets shifted towards Turkish lira and they opted for FX loans in their bank borrowings, short-term FX debt service coverage ratios declined. Nevertheless, firms still hold liquid FX assets that are approximately 1.3 times higher than their short-term FX debt. The CBRT closely monitors the FX loan and FX asset preferences of corporate sector firms so that they can effectively manage their exchange rate risks and to maintain the financial stability.

Firm-based indebtedness indicators show an increase in the number of firms utilizing FX loans, while these firms' capacity to cover their FX debt from export revenues continues to improve.

Pursuant to the May 2018 regulation, the FX credit utilization of firms with an FX credit risk of less than USD 15 million has been linked to their export revenues for the last three years. The FX credit utilization tendency of firms with an FX credit risk of less than USD 15 million (affected by the regulation) and more than USD 15 million (not affected by the regulation) has been analyzed using micro data. Accordingly, the FX credit risk of firms with an FX credit risk of less than USD 15 million increased by 30% from USD 22.3 billion as of October 2023 to USD 29.2 billion as of August 2024. Among this group, the number of firms utilizing FX loans increased by 32% to more than 29 thousand. Meanwhile, the credit risk of firms with an FX credit risk of more than USD 15 million increased by 12% from USD 166 billion as of October 2023 to USD 186 billion. The number of firms with FX loans in this group has increased by 19% (Chart III.2.7).

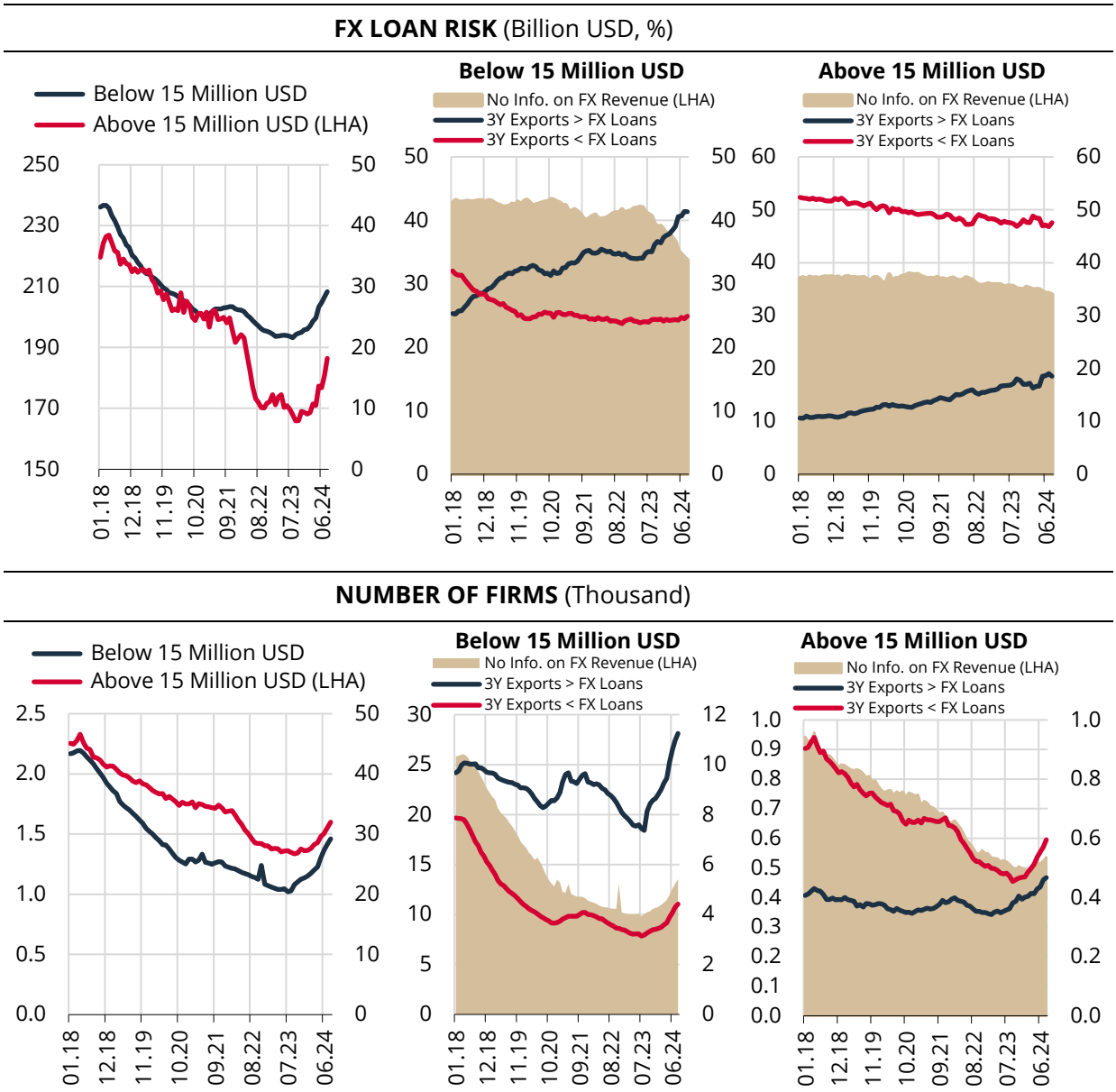
The share of firms whose export revenues for the last three years exceed their FX credit risk among the firms with an FX credit risk of less than USD 15 million has continued its upward trend since May 2023, reaching 41% as of August 2024. Among the firms with an FX credit risk of USD 15 million and above, and with no restrictions imposed by the regulation, the share of firms whose export revenues for the last three years exceed their FX credit risk has also increased. As the export tendency of firms increase, the share of firms with no available FX income information decreased.[1]

An analysis in terms of the number of firms reveals that the number of firms with FX loans increased in both groups. On the other hand, this increase in the group "Below USD 15 Million" was mainly driven by

[1] FX income calculation is based on foreign trade data including only exports of goods. Therefore, firms with no available FX income information are likely to have FX income through exports of services.

firms with three-year export revenues above their loan balance. These indicators suggest that despite the increase in the FX credit risk and the number of firms utilizing FX loans, the improvement in the coverage of firms' FX credit risk by export revenues continues.

Chart III.2.7: FX Loan Balances and Number of Firms (Billion USD, Thousand)



Sources: Risk Center, CBRT, Ministry of Trade Last Observation: 08.24

Note: FX credit risk calculation includes loans extended from abroad via domestic banks and excludes direct loans used from abroad. Firms' export revenues represent only the total revenues from exports of goods. Export revenues for the 2018-2024 period have been calculated using the 36-month sliding window method. Firms with no export revenue records in the database during the period covered for the export revenue calculation are classified under "No Information on FX Revenue." Firms that recorded export revenue even in one month during the period analyzed are classified as firms with FX revenue and placed under the relevant category through a comparison of their calculated three-year export amount and their FX credit risk.

While the share of Turkish lira deposits in the corporate sector's financial asset composition is growing, that of FX deposits is decreasing.

The upward trend in Turkish lira deposits of firms continued during the current reporting period (Table III.2.2). This trend was driven by the macroprudential policy steps taken by the CBRT in favor of the Turkish lira deposit preference to strengthen the monetary transmission mechanism and the improvement in expectations due to the decline in exchange rate volatility. Owing to the adopted macroprudential

measures, the shares of KKM and FX commercial deposits have been gradually declining. Firms continue to opt for internal financing amid tightening financial conditions. As a result of this internal financing tendency, the ratio of total assets to GDP declined slightly, yet the corporate sector's financial assets grew by 32% in annualized terms in the last three months.

Table III.2.2: Financial Assets of the Corporate Sector (Billion TRY)

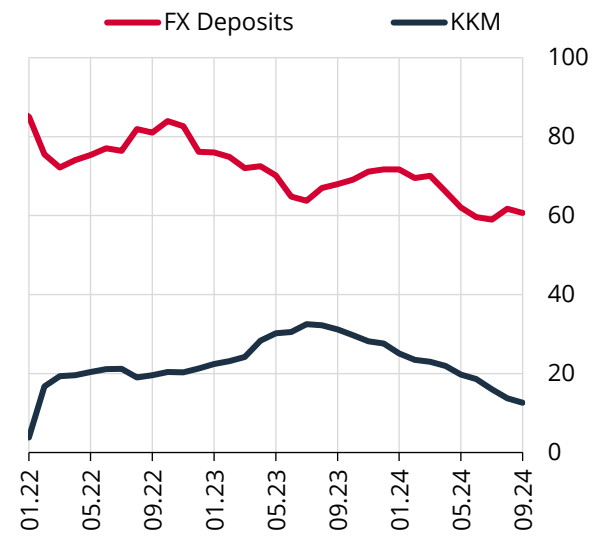
	09.23		06.24		09.24		3-Month Growth (Annualized)
	Billion TRY	GDP Share	Billion TRY	GDP Share	Billion TRY	GDP Share	
Turkish Lira Commercial Deposits	2,654	11.7	3,280	9.3	3,533	9.0	34.6
KKM Accounts	809	3.6	578	1.6	394	1.0	-78.4
FX Commercial Deposits	1,829	8.1	1,938	5.5	2,018	5.1	17.6
(Billion USD)	*67*		*59*		*59*		*0.4*
Public Debt Instruments	44.0	0.2	53.3	0.2	60.6	0.2	66.5
Private Sector Debt Instruments	85.7	0.4	119.0	0.3	162.7	0.4	249.4
Total Assets	**4,613**	**20.4**	**5,391**	**15.4**	**5,775**	**14.7**	**31.7**
Total Assets / GDP	20.4		15.4		14.7		

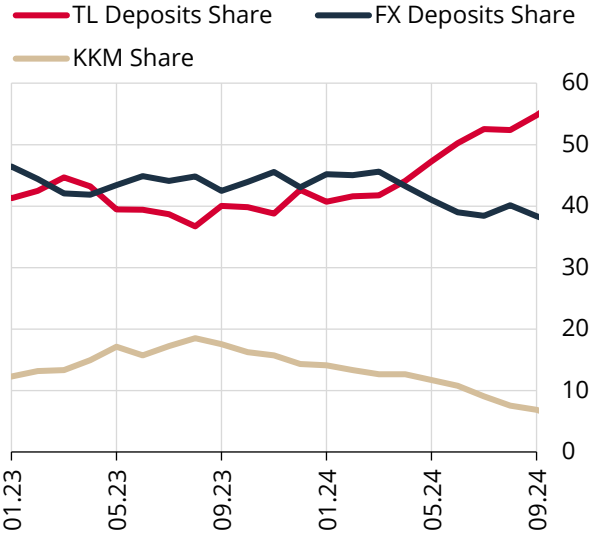
Source: CBRT Last Observation: 09.24

Note: "GDP Share" shows the ratio of the relevant item to GDP. The last column denotes the annualized three-month change between June 2024 and September 2024.

The downward trend in firms' KKM accounts and FX deposits continues (Chart III.2.8). The share of Turkish lira deposits in total deposits, which has been on an upward trend since August 2023, has surpassed the share of FX deposits since April 2024. As of September, the share of Turkish lira deposits reached 55%, whereas that of FX deposits fell below 40%. In addition to the improved inflation and exchange rate expectations as a result of the ongoing tight monetary policy, firms' shift towards Turkish lira assets has also been driven by the policy steps such as reducing the minimum interest rate applicable to KKM accounts, amendments to KKM targets, termination of the tax exemption for legal person accounts, introduction of the withholding tax on KKM interest yields and abolition of the additional returns.

Chart III.2.8: Commercial Deposits (Billion USD, %)





Source: CBRT Last Observation: 09.24 Source: CBRT Last Observation: 30.09.2024

Note: FX deposits are the four-week moving averages. As of September 30, 2024, the shares of Turkish lira deposits, FX deposits, and KKM were 54.7%, 38.4%, and 6.9%, respectively.

In 2024, the profitability and financial expense coverage indicators of publicly traded firms deteriorated slightly, while their liquidity remained relatively strong.

Due to the recent adoption of inflation accounting in the reporting of balance sheets of firms listed on the BIST, comparisons with pre-2022 balance sheets are not feasible. Therefore, first, the balance sheet items of firms listed on the BIST, which have been revised applying inflation accounting for the period after 2022, are analyzed to provide information on the development of firms' profitability, liquidity, and solvency in the near term. Accordingly, profitability ratios, which were high in 2022 and 2023, have declined slightly in the first two quarters of 2024 due to rising financing costs. The current ratio, which measures liquidity, indicates that firms continue to meet their short-term liabilities. However, the liquid asset ratio, which shows the share of firms' liquid assets and inventories in assets, declined slightly in 2024. The decline in this indicator was also reflected across firms. The development in this indicator is attributed to the fact that firms reduced their bank debts due to tighter financial conditions and turned to their existing liquid assets (internal financing) to meet their financing needs. The financial expenses coverage ratio (FECR), which shows the capacity of firms to cover their financial expenses with their operating income, has been on a downward trend due to rising financing costs as a result of the tight monetary policy. On the other hand, more than half of the firms have a financial expenses coverage ratio above the threshold value of 1.5 (Table III.2.3). Even though the reflection of the tight financial conditions on firms' profitability and liquidity indicators is considered to be limited, the development in these indicators is closely monitored.

Table III.2.3: Profitability, Liquidity, and Indebtedness Indicators of Corporate Sector Firms Based on Inflation Accounting

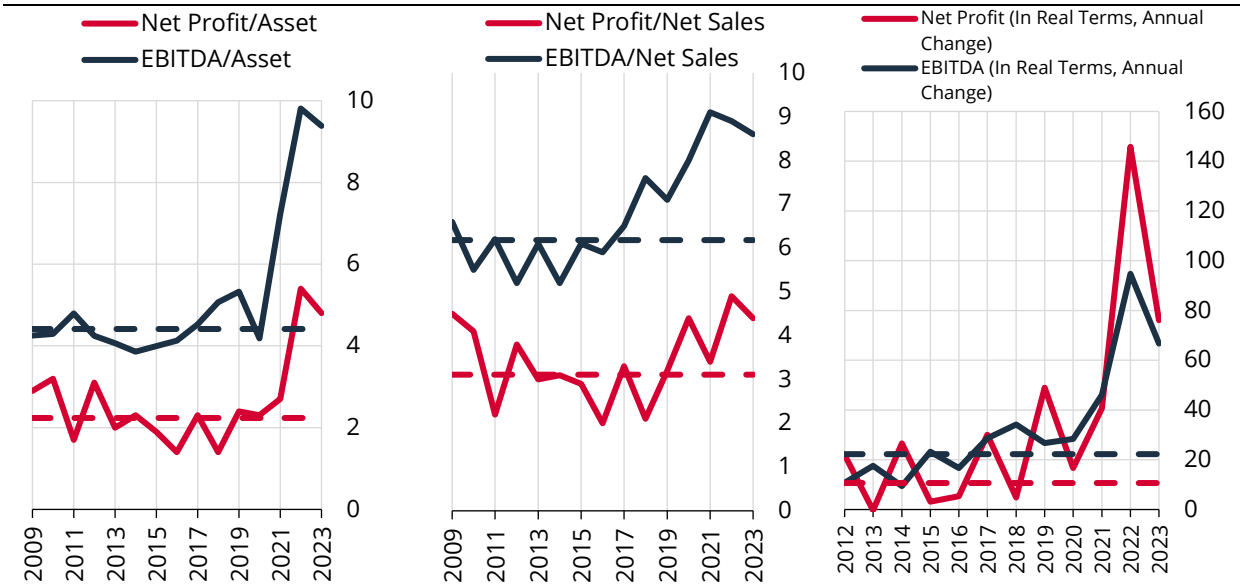
Indicator Types	Indicators	Long-Term Average	2022Q4	2023Q4	2024Q1	2024Q2
Profitability	**EBITDA/Net Sales %)**	13.5	13.4	13.7	11.0	11.7
Profitability	**Net Profit/Net Sales (%)**	6.3	7.9	10.7	4.6	5.0
Liquidity	**Liquid Asset Ratio %)**	21.7	22.6	20.8	19.4	18.7
Liquidity	**Current Ratio**	1.37	1.39	1.43	1.42	1.43
Liquidity	**Share of Firms with Liquid Asset Ratio > 20%**	53.8	57.5	52.8	47.6	47.5
Liquidity	**Share of Firms with Current Ratio > 1 (%)**	74.9	81.5	82.9	82.4	79.9
Indebtedness	**FECR Ratio**	3.27	3.02	2.10	1.61	1.58
Indebtedness	**Share of Firms with FECR >1.5 (%)**	59.9	67.9	61.8	50.3	51.9
	Number of Firms		395	392	380	398

Note: The analysis includes BIST-listed companies that have or have not applied inflation accounting. Financial indicators are median values of the relevant period. EBITDA = Net Operating Profit/Loss + Amortization Expenses. FECR= EBITDA/Financial Expenses. Liquid Asset Ratio = (Liquid Assets + Inventories)/Assets. Current Ratio = Current Assets/Short-Term Liabilities. The long-term average is the average of the annualized data between 2011Q4 and 2023Q3.

The profitability ratio of corporate sector firms, which is above the historical average, declined slightly in 2023.

In addition to the BIST sample, which consists primarily of a sample of large firms and enables the analysis of recent trends in the corporate sector, the CBRT's company accounts statistics, which also encompass data on whole non-financial firms, facilitate a more comprehensive analysis of the corporate sector. However, due to the approximately nine-month delay in relevant data publication, it is not feasible to conduct near-term analyses. Based on these reports, profitability indicators of the corporate sector remained flat from 2009 until the onset of the pandemic. Nonetheless, corporate sector profitability increased significantly above its historical average, in line with inflation realizations and strong domestic demand conditions after 2021. Due to increased monetary tightness, profitability ratios in the corporate sector began to decline, yet remained at robust levels as of the end of 2023 (Chart III.2.9).

Chart III.2.9: Profitability Indicators of Corporate Sector (%)

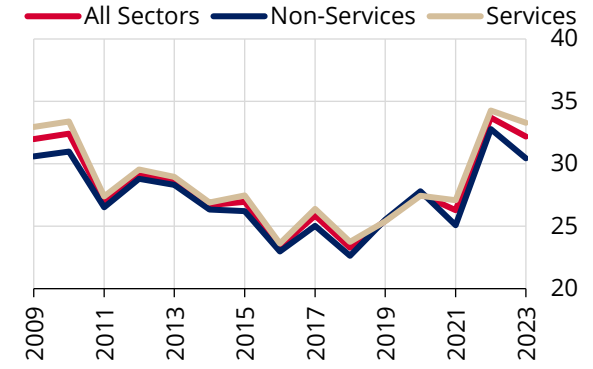


Source: CBRT-Company Accounts Last Observation: 2023

Note: Dashed lines show the average annual real changes in long-term EBITDA/Asset, Net Profit/Asset, EBITDA, and Net Sales Income. These average values are calculated for the 2009-2019 period. The chart on the right shows the change in real three-year moving averages in EBITDA and Net Profit/Loss.

After 2021, in an environment of rising inflation, the number of companies that increased their profitability relative to their assets has increased. The share of firms with a net profit to assets ratio of 5% or above was 32%, while this ratio was 30% and 33% in the services and non-services sectors, respectively (Chart III.2.10). The share of firms with an EBITDA-to-total assets ratio of 5% or above is 45% (Chart III.2.11). The widespread rise in profitability ratios to historically high levels prior to 2023 has boosted bank balance sheets and capital structures and formed an important buffer for firms during the monetary tightening period.

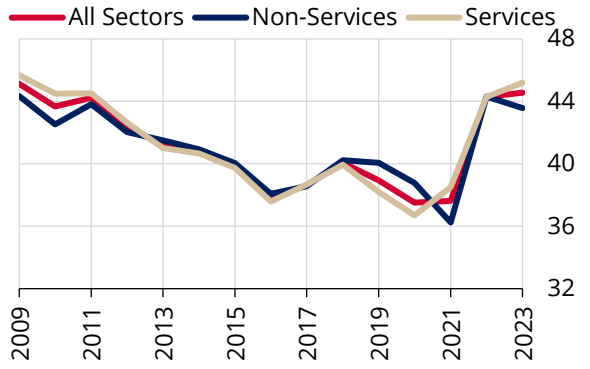
Chart III.2.10: Share of Firms with a Net Profit/Asset Ratio Above 5% (%)



Source: CBRT- Company Accounts Last Observation: 2023

Note: The shares of services and non-services firms are calculated using the number of firms in these sectors. Micro-scale firms are not included.

Chart III.2.11: Share of Firms with an EBITDA/Asset Ratio Above 5% (%)



Source: CBRT- Company Accounts Last Observation: 2023

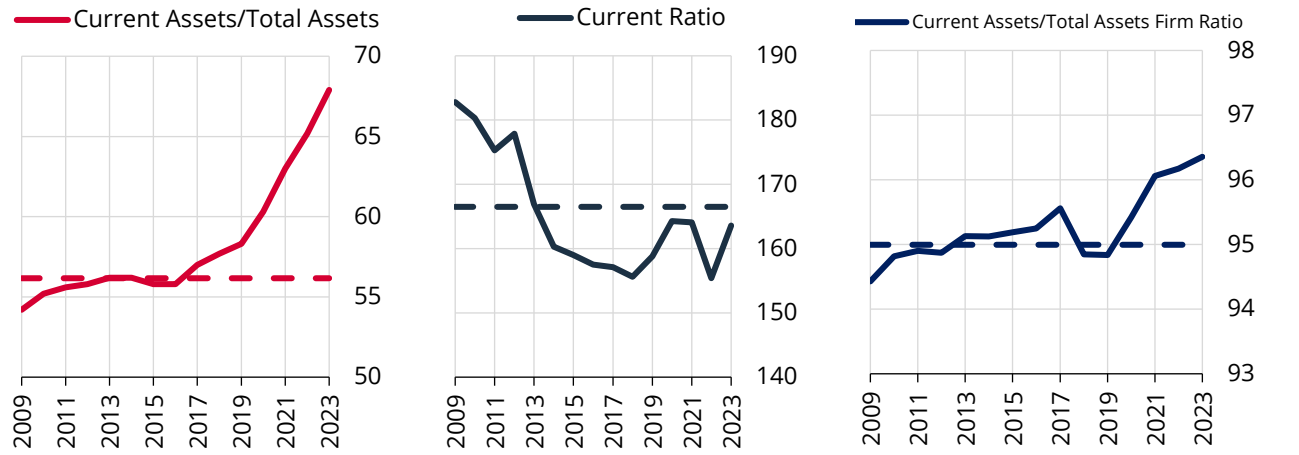
Note: The shares of services and non-services firms are calculated using the number of firms in these sectors. Micro-scale firms are not included.

The corporate sector had strong liquidity buffers prior to the financial tightening.

The ratio of current assets, including liquid assets, inventories, and receivables, to total assets indicates that the liquidity of the corporate sector is highly robust. The current ratio, which shows the sector's capacity to meet short-term liabilities, is very close to its historical average. The high levels of liquid assets of firms provide a buffer against potential fragilities and strengthen their balance sheets, along with their strong profitability (Chart III.2.12). Although liquidity indicators of BIST firms point to a downturn in 2024,

firms with strong liquidity buffers were able to cover their financing needs with their existing liquidity instead of borrowings, given the rising loan costs.

Chart III.2.12: Liquidity Indicators of Firms (%)



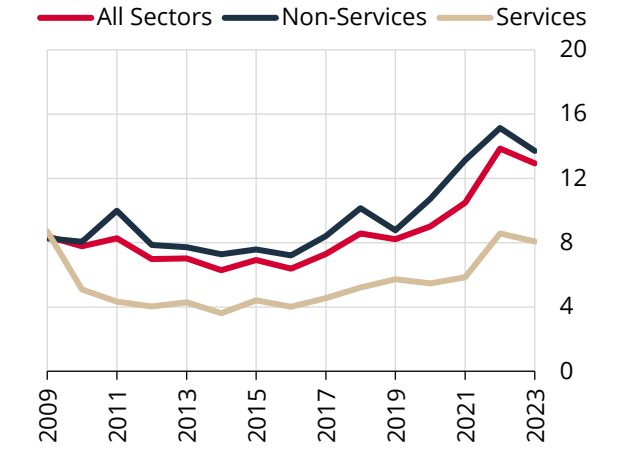
Source: CBRT-Company Accounts Last Observation: 2023

Note: Current assets are the sum of liquid assets and inventories for all firms. The Current Assets/Total Assets ratio is the median value of liquid asset ratios calculated for all firms. Current ratio is calculated as the ratio of current assets to short-term liabilities. Current Assets/Total Assets firm ratio shows the share of firms with a Current Assets/Total Assets ratio above 20%. Dashed lines show the historical average of the relevant indicator. Historical averages are calculated for the 2009-2019 period.

The high level of profitability has supported the corporate sector's debt service capacity.

The ratio of corporate sector's operating profitability to debt is on the rise, driven by the sector's high EBITDA, particularly over the past three years. Despite the fact that the EBITDA-to-debt ratio in the services sector remained below the corporate sector average, this ratio stood above the services sector's historical average (Chart III.2.13). Meanwhile, the number of firms with an EBITDA-to-debt ratio above 25% was higher in the services sector than in non-services sectors (Chart III.2.14). The fact that the corporate sector had a high debt service capacity before the monetary tightening not only supported the corporate sector against rising financing costs but also contributed to the low NPL ratio.

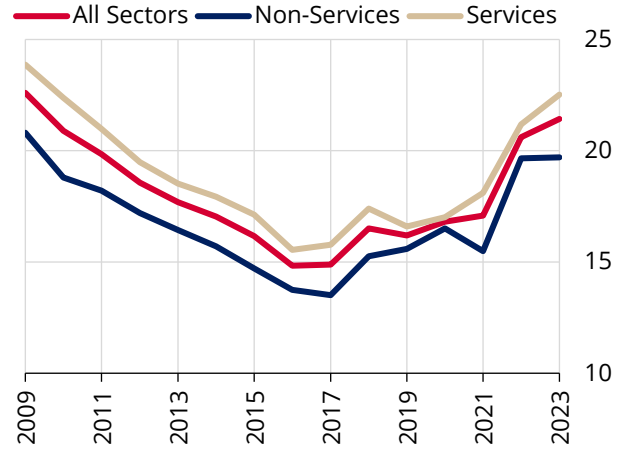
Chart III.2.13: EBITDA/Debt Ratio of Corporate Sector Firms (%)



Source: CBRT-Company Accounts Last Observation: 2023

Note: Shows the median EBITDA/Total Debt ratio. Micro-scale firms are not included.

Chart III.2.14: Share of Firms with an EBITDA/Debt Ratio Above 25% (%)



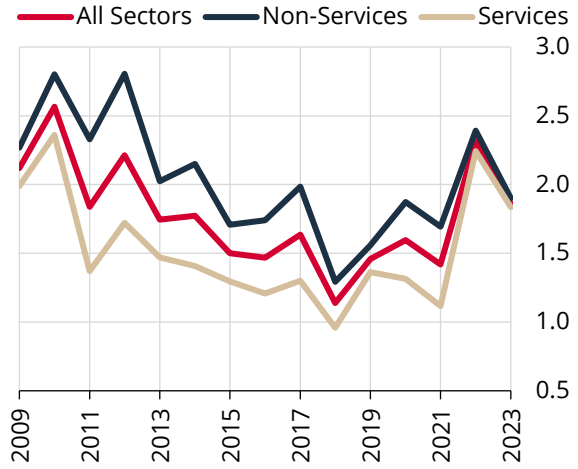
Source: CBRT-Company Accounts Last Observation: 2023

Note: Shows the ratio of firms with an EBITDA/Total Debt ratio above 25% to the total number of firms. Micro-scale firms are not included.

The corporate sector has the profitability outlook sufficient to cover its financial expenses.

The capacity of the corporate sector to cover its financial expenses improved considerably due to the high inflation realizations and declining financial expenses amid the low interest rate environment during the 2021-2023 period. Despite the somewhat limited financial expenses coverage ratio after June 2023, due in part to monetary tightening, the sector's high profitability and robust liquid assets maintained the ratio at a high level (Chart III.2.15). Similarly, the share of firms with a financial expenses coverage ratio above 1.5 is quite close to the historical average and reflects the sector's strong debt service capacity (Chart III.2.16).

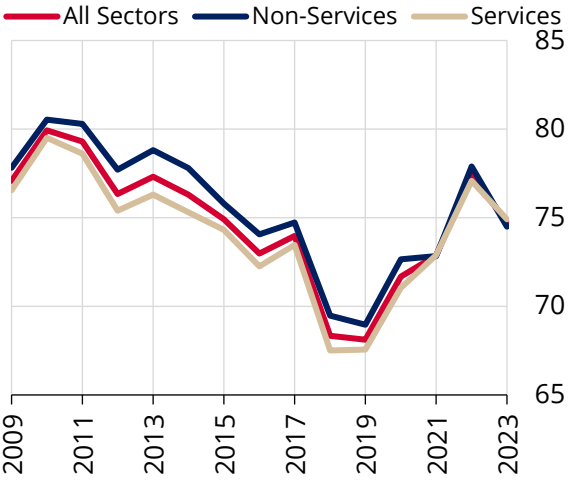
Chart III.2.15: Corporate Sector Firms' Financial Expenses Coverage Ratio (Ratio)



Source: CBRT-Company Accounts Last Observation: 2023

Note: FECR = EBITDA/Financial Expenses. Micro-scale firms are not included.

Chart III.2.16: Share of Firms with Financial Expenses Coverage Ratio Above 1.5 (%)



Source: CBRT-Company Accounts Last Observation: 2023

Note: Shows the ratio of firms with an FECR ratio above 1.5 to the total number of firms. Micro-scale firms are not included.

Box III.2.I: Firm Assets, Credit Utilization and Price Expectations

Firms' expectations about the prices of the goods and services they produce and their pricing strategies are a significant supply-driven factor affecting the inflation outlook and price stability. In fact, firms aiming to hedge against inflation uncertainty during periods of strong upward price pressures prefer to operate with high levels of cash equivalents and inventories (stocks), taking into account the possible high input costs in the following period[1]. Coibion et al. (2020) study on the Italy case shows the positive correlation between firms' inflation expectations and their inventory holding preferences. In this context, the financing preferences of real sector firms when they implement short-term asset holding strategies during inflationary periods are also significant in terms of the interaction of financial stability with price stability. The literature on inflation expectations suggests that deterioration in inflation expectations may have an impact on the amount, maturity, and cost of loan financing (Coibion et al, 2020; Ropele et al., 2022; Akgündüz et al., 2024).

Using the case of Türkiye, this study analyzes the correlation between firms' balance sheet composition and their pricing expectations in periods when inflationary pressures gain strength and different monetary policy strategies (easing and tightening) were implemented. From a theoretical perspective, firms that have high levels of inventories are expected to be less likely to change their prices when demand conditions weaken (such as during monetary tightening) due to their relatively lower need to maintain production. On the other hand, if firms with large inventories also utilize a high amount of credit, the upside deterioration in price expectations is expected to increase amid shrinking demand conditions. In this case, increased financing costs due to monetary tightening and the effort to maintain production against contracting demand may play a role. The results of this analysis suggest that firms operating with high levels of inventory and liquid assets have much higher price expectations during periods of monetary easing. Moreover, it takes time for heightened price expectations of these firms to return to historical averages during periods of monetary tightening. Additional analysis reveals that the high course of price expectations is more pronounced for firms with high loan debt during periods of monetary expansion.

Data and Methodology

The study utilizes various micro data sources. In the first stage, real sector firms' expectations regarding price changes are collected from the Business Tendency Survey (BTS) data (Ayanoğlu et al., 2024). To elaborate, the answers to the question “How do you expect your selling prices to change over the next 3 months?” in the BTS are used in the firm panel format. The expectations of BTS participants regarding pricing policies are measured by the distribution of categorical answers to the question (increase/ remain unchanged/decrease). The sampling excluded those firms that did not respond to the question measuring expectations for price changes. In the second stage, financial statement data of firms were obtained from the administrative records of the Revenue Administration (RA) and matched with price expectations. In the third and final stage, the micro-level credit data provided by the BRSA were aggregated both at the firm and time dimensions and merged with other databases. At the end of this sampling process, those analyses included in the study cover 3,200 firms operating in the manufacturing industry during the sampling period January 2018-August 2024.

The basic empirical specification is constructed as follows:

$$Price\ Expectation_{it} = \beta(Policy\ Stance_t\ x\ Inventory\ Ratio_i) + \delta_i + \theta_t + \varepsilon_{it} \quad (1)$$

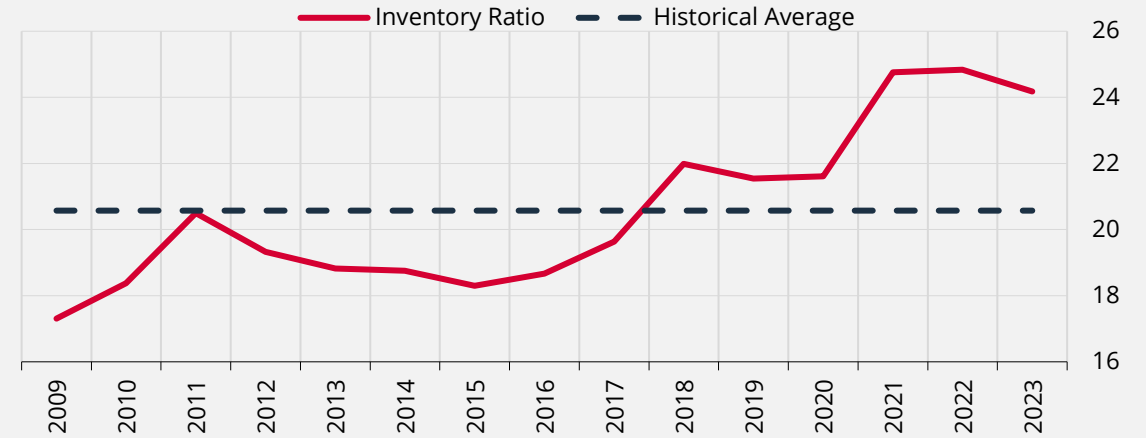
In Equation (1) the $Price\ Expectation$ variable, which tracks the trend of firms' product and service prices (at the near-term forecast horizon), takes the value 1 for firms expecting an increase in sales prices in the next three months and 0 for other firms. The $Policy\ Stance$ variable captures the cyclical variation in the monetary policy stance, and is represented by the $Expansion$ and $Tightening$ series in different analyses. The $Expansion$ indicator, based on the course of the CBRT's weighted average funding rate, which is deflated by actual inflation, takes the value of 1 for the September 2021-May

[1] Throughout the note, inventory refers to stocks under liquid items in the balance sheet, and inventory ratio refers to the stocks to total assets ratio.

2023 period and 0 for the January 2018-August 2021 period. The $Tightening$ variable, which tracks the period when the CBRT initiates monetary tightening, is assigned a value of 1 for the June 2023-August 2024 period and 0 for the January 2018-August 2021 period.[2]

The differentiation among the strategies adopted by firms against price uncertainties in an inflationary environment is monitored through the behavior of holding short-term inventories. In fact, for the analyzed sample, in the recent period when pressures on price stability were elevated, firms' inventories have also gone above historical trends (Chart III.2.I.1). In this context, the $Inventory\ Ratio$ variable (as of 2021), which is constructed in the cross-sectional dimension, takes the value of 1 for firms with a ratio of inventories to total assets above the sampling average and 0 for other firms. The model also includes firm (δ_i) and time (θ_t) fixed effects. Standard errors are clustered at the firm-month level.

Chart III.2.I.1: Firm Inventories (BTS Sampling, %)



In the following stage of the analysis, we examine how the firm inventory ratio-price expectation relationship differs according to firms' credit utilization behavior in an inflationary environment (and under different monetary policy practices). The specification in Equation (2) is used for the relevant analysis.

$$Price\ Expectation_{it} = \beta_1(Policy\ Stance_t\ x\ Inventory\ Ratio_i) + \beta_2(Policy\ Stance_t\ x\ Inventory\ Ratio_i\ x\ Credit_i) + \beta_3(Inventory\ Ratio_i\ x\ Credit_i) + \delta_i + \theta_t + \varepsilon_{it} \quad (2)$$

In Equation (2), price expectations, monetary policy periods and variable definitions for balance sheet composition tendency and fixed effects are constructed as in Equation (1). In addition, the $Credit$ variable included in the model indicates the tendency of real sector firms to obtain financing through bank loans. This variable takes the value 1 for firms whose total loan utilization in the September 2021-August 2024 period is above the sampling average and 0 for other firms.

Results

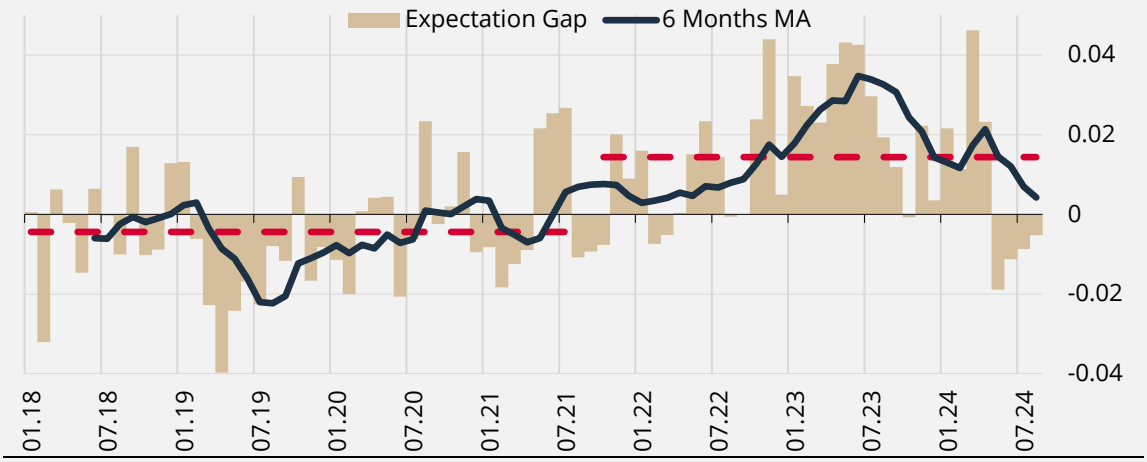
Within the scope of the descriptive analysis, the historical course of price expectations of firms with different inventory levels are analyzed. To this end, we first calculated the average $Price\ Expectation$ series for firms (treatment group) and other firms (control group) that went through the period of accelerating inflationary pressures (2022-2023) with high stock levels (as of end-2021). In the following step, the difference of the average expectation values (and the medium-term trend of this difference) is taken. As illustrated in Chart III.2.I.2, the deterioration in price expectations has been higher in the

[2] June 2023-August 2024 observations are excluded in the analyses employing the $Expansion$ variable and September 2021-May 2023 observations are excluded in the analyses using the $Tightening$ variable.

group with a higher ratio of inventories in the balance sheet composition, since the launch of the expansionary policy mix. Although the trend of the expectations gap between the two groups declined in the tightening monetary policy period, it hovered above historical averages. On the other hand, the recent improvement in general inflation expectations has spilled over into the pricing policies of firms with high inventories.

Econometric results based on equations (1) and (2) are reported in Table III.2.I.1. The estimation results in column (1) quantify the effect of the inventory level on price expectations following expansionary policies in a scenario where other factors are controlled. The coefficient of the $Expansion\ x\ Inventory\ Ratio$ interaction term is statistically significant and positive. This suggests that firms with higher inventories on their balance sheets are more likely to revise their pricing policies upwards when inflationary pressures gain strength.[3]

Chart III.2.I.2: Average Price Increase Expectation Ratio Spread
(Comparison of Treatment and Control Group, %)



Note: The dashed lines in red indicate the averages of expectation differences for the periods of January 2018-September 2021 and October 2021-August 2024.

Table III.2.I.1: Estimation Results

	(1) Price Expectation (Increase = 1, Other = 0)	(2) Price Expectation (Increase = 1, Other = 0)	(3) Price Expectation (Increase = 1, Other = 0)	(4) Price Expectation (Increase = 1, Other = 0)
Expansion x Inventory Ratio	0.0199***	0.0010		
	(0.0063)	(0.0071)		
Expansion x Inventory Ratio x Credit		0.0423***		
		(0.0151)		
Tightening x Inventory Ratio			0.0268***	0.0079
			(0.0072)	(0.0082)
Tightening x Inventory Ratio x Credit				0.0811***
				(0.0170)
Price Expectation (Average)	0.3833	0.3833	0.3644	0.3644
Number of Observations	99,589	99,589	91,671	91,671
Corrected R^2	0.348	0.348	0.342	0.342
Firm Fixed Effects	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes

[3] When the absolute magnitude of the coefficient (0.019) is compared to the average sample value of price expectations (0.383), the level of economic significance is relatively high.

Note: Standard errors clustered at the firm-month level are shown in parentheses. In columns (2) and (4), $Expansion\ x\ Credit$ and $Tightening\ x\ Credit$ variables, respectively are added to the model but are not indicated in the table since they are completely controlled by firm fixed effects. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels.

Column (2) of Table III.2.I.1 investigates the role of firms' propensity to utilize credit in the expansionary period (through the firm's balance sheet structure) on price expectations. The estimation results based on equation (2) reveal that the triple interaction variable (Expansion $x\ Inventory\ Ratio\ x\ Credit$) has a statistically significant positive coefficient. This emphasizes that if firms operating with a high inventory ratio also opt to utilize a high amount of credit, the deterioration in price expectations of these firms proves higher than that of other firms.

Columns (3) and (4) encompass and repeat similar analyses for the period of monetary policy tightening. In these analyses, the $Policy\ Stance$ variable is represented by the $Tightening$ indicator. The results show that firms that go through the tightening period with high inventories continue to have significantly higher price expectations than other firms despite the tightening. Moreover, according to the findings in column (4), firms with high inventories have higher price expectation tendencies (compared to other firms) in the tightening period when they rely more on credit financing. The findings for the tightening period imply that firms with liquid assets on their balance sheets owing to high inventories and strong access to credit have higher expectations for price increases despite the tightening policies.

In the robustness analyses not included in the box, revisions were made based on the model in column (1). Accordingly, a control variable representing firm size is included in the regressions at first. Secondly, the decision was made on the categorization of firms into groups according to their propensity to hold high and low levels of inventory based on the median (rather than the mean) value of the inventories/total assets ratio (as of 2021). Thirdly, we repeated the treatment and control group separation by measuring the degree of benefiting from the inflationary environment using an alternative indicator.[4] In the fourth robustness analysis, the propensity score matching method was used to simulate other characteristics of firms with high and low inventory ratios (firm size, capital ratio, sales volume, profitability and liquidity). All these analyses indicate that the liquid asset composition of the balance sheet leads to pricing rigidity during the expansionary policy period. In the fifth and final robustness analysis, instead of $Price\ Expectation$ as the target variable, the $Unit\ Cost\ Expectation$ variable, which can also be traced from the BTS sub-questions, is taken as the target variable. The estimation results of the revised model suggest that the cost expectations of firms with high levels of short-term assets were also strong during the expansionary period.

Concluding Remarks

Anchoring real sector firms' inflation expectations in line with policy targets is an important prerequisite to achieving price stability. However, firms' price expectations may also be related to their balance sheet structure and financing behavior. One of the strategies that firms can adopt to avoid the impacts of an inflationary environment is to increase the level and weight of asset items with inventory characteristics. This study analyzes the correlation between firms' inventories and price expectations in the recent period of elevated inflationary pressures by handling the Turkish case as a case study and analyzing the correlation between firms' inventories and price expectations across different monetary policy stance periods. The course of firms' price expectations is monitored through the data collected by the BTS. The results of the analysis show that the deterioration in price expectations of firms that entered the monetary easing period with a higher inventory ratio is more notable than the historical averages. Moreover, subsequent to the monetary tightening steps, the trend of price expectations of these firms remains above historical averages compared to other firms. Additional analyses imply that the effects on price expectations are stronger when firms operating with high inventory ratios rely more on credit utilization. In sum, while the impact of tight monetary policy on pricing behavior is heterogeneous across firms, the rigidity in the pricing behavior of firms with more liquid assets and high access to credit (during monetary tightening) is worth noting.

[4] In this robustness analysis, instead of “Stocks (Inventories)/Total Assets” ratio “, “(Financial Tangible Assets + Real Assets+ Depreciable Assets + Other Tangible Assets)/Total Assets” ratio is used.

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