1. Overview

Economic activity, after having contracted sharply in the second quarter of the year due to the effects of the pandemic on domestic and external demand, recorded a marked V-type recovery in the third quarter due to the support of the normalization process and strong credit impulse. In the early stages of the pandemic, maintaining the production potential was prioritized and steps have been taken to ensure a healthy continuation of the interaction between the real sector and the financial sector. In addition to the monetary measures taken by the CBRT, other policy-making institutions have also taken measures to limit market volatility and support the economy.[1] Credit supply, which was led by the state-owned banks, made a significant contribution to the uninterrupted flow of credit to the real sector and the economic recovery process. In the third quarter of the year, economic activity exceeded its pre-pandemic level, with exports following a stronger course than projected in addition to the rapid increase observed in deferred domestic demand. High-frequency data indicate that the economic recovery continues in the last quarter, and thus, the possibility of positive growth in 2020 is considered to be very strong.

The rapid economic recovery achieved on the back of strong credit impulse has significant repercussions on the external balance and inflation outlook. While the rapid credit expansion contributed substantially to the economic recovery, it has curbed demand-side disinflationary effects and with the additional impact of the depreciation of the Turkish lira, inflation followed a higher-than-envisaged path. Moreover, as the normalization proceeded gradually, the impact of capacity constraints on unit costs continued, albeit at a diminishing pace. As the inflation trend remained above the year-end and medium-term inflation targets, the upward revisions in inflation expectations became more apparent. This outlook poses risk to pricing behavior and the medium-term inflation outlook.

Despite the stronger-than-envisaged recovery in the exports of goods, which is supported by competitiveness gains, the fall in export of services and the rise in imports widened the current account deficit. Due to the contraction in global demand and travel restrictions, a significant drop was observed in exports and tourism revenues. After sharp declines in March and April, exports started to recover in May and reached their pre-pandemic levels in September in seasonally- and calendar-adjusted terms. Owing to deferred demand as well as liquidity and credit policies implemented in the framework of the pandemic measures, import demand has revived since May. Moreover, the elevated level of global uncertainties and growing dollarization trend led to a significant rise in the demand for gold which became an important component of the deterioration in the external balance. Excluding gold, the export/import coverage ratio is hovering at historically high levels, showing that the real exchange rate level supports the adjustment in the external balance. Accordingly, as the pandemic-specific credit policies normalize, the rebalancing effects of the real exchange rate are expected to become more apparent and the additional import demand stemming from strong credit impulse is expected to weaken. Thus, the strong recovery in exports of goods, relatively low levels of commodity prices and the level of the real exchange rate will continue to support the current account balance in the upcoming periods.

Although uncertainties surrounding the course of the pandemic and the effects of economic policies remain high on a global scale, normalization of the pandemic-specific policy mix was needed to ensure the stable continuation of economic recovery. Monetary and fiscal measures aimed at curbing the adverse effects of the pandemic and maintaining productive capacity have contributed significantly to the recovery process in the economy. Nonetheless, it is crucial to restore disinflation and to reduce the long-term interest rates along with country risk premium in order to steer the economy towards a healthy growth path. In this framework, the CBRT has gradually strengthened the tightening steps that it has been taking since August to bring inflation expectations under control, to restore the disinflation process and to support price stability.

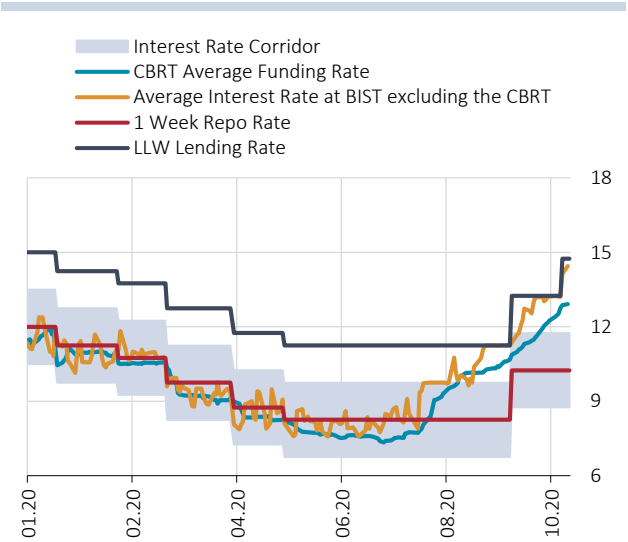
[1] The challenges faced in the implementation of monetary policy in emerging market economies and in this context the discussions about integrated policy framework employing several policy instruments against fluctuations in global risk appetite and capital movements are included in Box 1.1 and Box 1.2.

The ongoing tightening in monetary and liquidity policies will have a positive impact on the external balance and the inflation outlook in the upcoming period. The rise in the weighted average funding rate and the moderation in the supportive stance of state-owned banks have had strong impact on loan rates and brought a significant tightening in financial conditions. While the increase in consumer loan rates has been more pronounced, the normalization trend in commercial and retail loans has become more significant recently. The expected moderation in imports has started with the phasing out of pandemic-related supportive policies. At this point, controlling inflation expectations and restoring the disinflation process as soon as possible are of critical importance for the economic growth to continue in a healthy and stable way. Accordingly, in October, flexibility in liquidity management was increased with a tightening bias and a framework adopted in which a tight monetary policy stance will be maintained until a significant improvement is achieved in the inflation outlook. The envisaged improvement in inflation and current account balance owing to the normalization in the pandemic-specific policies, the slowdown in loan growth and the tight stance in monetary policy will support macro-financial stability.

1.1 Monetary Policy Decisions

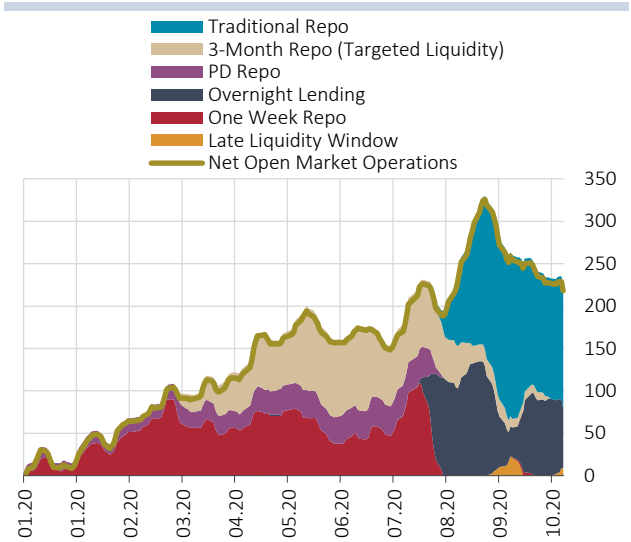
The CBRT started to take tightening steps regarding liquidity management in August. The CBRT, considering the rebound in the economic activity and its reflections on macro balances, assessed that conditions had evolved to allow for the gradual withdrawal of the pandemic-specific supportive policy actions and took tightening steps in the context of liquidity management. Accordingly, targeted additional liquidity facilities started to be phased out. In addition, one-week repo auctions were suspended as of 7 August; liquidity limits offered to primary dealer banks were first reduced to half, and then to zero; and banks' borrowing limits at the CBRT Interbank Money Market for overnight transactions were reduced by half.[2] As part of the tightening steps taken under liquidity management, traditional repo auctions started on 13 August. As a result of these steps, the CBRT weighted average funding rate gradually increased and began to materialize above the CBRT overnight lending rate (Chart 1.1.1).

Chart 1.1.1: CBRT Rates and Short-Term Interest Rates (%)



Sources: BIST, CBRT.

Chart 1.1.2: CBRT Open Market Operations (One-Week Moving Average, TRY Billion)



Source: CBRT.

In August, in line with the monetary tightening steps, the Turkish lira and FX reserve requirement ratios were raised for banks fulfilling the real credit growth conditions. These decisions related to reserve requirements became effective in increasing the funding need of the system. A significant portion of the funding need was met through TL currency swap transactions at the CBRT and BIST. However, the composition of funding provided through open market operations (OMO) since August changed noticeably due to the

[2] Decisions related to monetary policy actions in the current reporting period are summarized in Table 1.1.

phasing out of the new facilities that were launched following the pandemic. In this period, while the share of funding through weekly and three-month repo auctions decreased, the amount of funding through overnight transactions and traditional auctions increased (Chart 1.1.2).

The CBRT, following the rate cuts it delivered in the March-May period due to the pandemic, kept the policy rate constant in June and July considering the inflation outlook. During the period until May, international commodity prices affected inflation favorably. However, since May, the pandemic-driven rise in unit labor costs has led to an increase in the trends of core inflation indicators. The CBRT judged that supply-side factors, which prevailed in the short term due to pandemic-related restrictions, would phase out and disinflationary effects would become more prevalent in the second half of the year, and decided to keep the policy rate unchanged in June and July.

In August, given that uncertainties regarding domestic and external demand conditions remained significant due to the course of the pandemic, the CBRT decided to keep the policy rate unchanged, while continuing with liquidity measures. It was stated that along with the pandemic-related rise in unit costs, exchange rate and credit developments restrained the demand-side disinflationary effects, and core inflation indicators, which had been on the rise since June, sustained their rise in this period. Accordingly, the gradual normalization of the pandemic-specific financial regulations and the tightening steps taken in liquidity management to contain volatilities seen in the domestic markets in August were judged to support macro financial stability. Nevertheless, as uncertainties regarding domestic and external demand conditions remained significant due to the course of the pandemic, it was decided to keep the policy rate unchanged in August, while continuing with liquidity measures.

In September, the CBRT decided to increase the policy rate by 200 basis points to restore the disinflation process and support price stability. The CBRT's projections before September were that the pandemic-related supply-side inflationary factors would gradually phase out during the normalization process and demand-driven disinflationary effects would become more prevalent. However, due to the gradual realization of normalization, the supply-side inflationary effects related to the pandemic continued, and as a result of the rapid economic recovery with strong credit impulse and the developments in financial markets, inflation followed a higher course than envisaged. The ongoing rise in inflation expectations poses a risk to pricing behavior and the medium-term inflation outlook. The CBRT assessed that the tightening steps taken since August should be reinforced in order to contain inflation expectations and risks to the inflation outlook.

Tightening steps taken in liquidity management were maintained in September. Soon after the September MPC decision, the CBRT held a one-week repo auction, however due to the price movements seen in markets, the Bank suspended the weekly repo auctions again and started to fund the system through overnight maturity. In the following period, financial market developments called for stronger tightening steps in liquidity management and the CBRT has resumed its repo auctions held via the traditional auction method since 2 October. In line with the tightening steps in open market funding, the CBRT also raised the interest rate applicable in TL currency swap transactions against foreign exchange. As a result of these tightening steps, the BIST overnight repo rates started to hover between the CBRT overnight lending rate and the late liquidity window (LLW) rate (Chart 1.1.1).

Other institutions also accompanied the normalization of the pandemic-specific policies in a coordinated manner. Other major actions as part of the gradual withdrawal of the measures taken to contain the adverse effects of the pandemic were the flexibility introduced by the BRSA in derivative transactions as well as in calculation of asset ratios, and the tax reduction in foreign exchange transactions. In line with the normalization steps, the CBRT, with its reserve requirement decisions of 12 October, aimed to support the monetary transmission mechanism and financial stability by contributing to lowering the banking system's intermediary costs (Table 1.1).

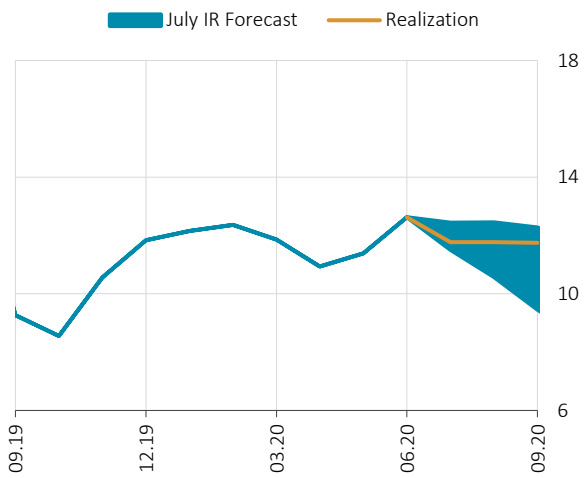
A noticeable tightening was achieved in financial conditions, and credit growth slowed down. On the back of the changes in the composition of funding, the CBRT weighted average funding rate increased progressively and started to form above the CBRT's overnight lending rate. Parallel to this, deposit rates also increased. Thus, the credit growth-based reserve requirement regulations and the pandemic-related liquidity measures taken in the second half of 2020 became less supportive for funding conditions. The monetary tightening and balancing in the supportive stance of state-owned banks have reflected rapidly and strongly on loan rates. The rise in loan rates curbed the demand for new loans, leading to a significant deceleration initially in the use of commercial loans, and then in personal loans.

In October, despite keeping the policy rate unchanged, the CBRT decided to keep the tight stance of the monetary and liquidity policies until the inflation outlook displays a significant improvement. The operational framework of the monetary policy was adjusted with a tightening bias in the liquidity management so as to set the margin between the CBRT LLW lending rate and overnight lending rate at 300 basis points. Thus, a flexible framework was formed, which would enable a quick response to market volatilities linked to the fluctuations in risk appetite amid high global uncertainties. Nevertheless, to resume the disinflation process as soon as possible under current circumstances, the CBRT shifted to a framework in which a tight monetary stance will be maintained.

1.2 Medium Term Projections

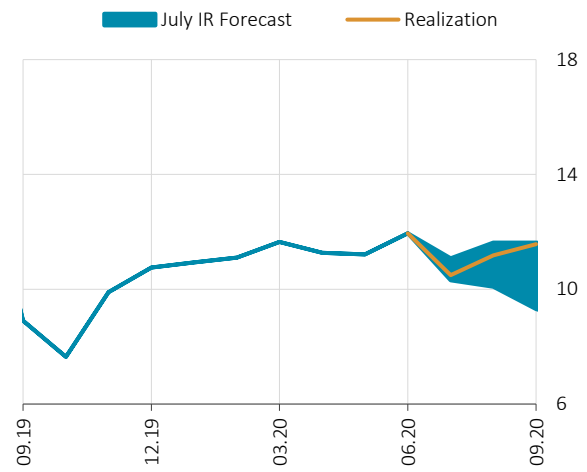
In the third quarter, annual consumer inflation stood at 11.75%, hovering close to the upper bound of the forecast range in the July Inflation Report. In this period, the B index, which is one of the core indicators, also followed a similar course (Chart 1.2.1 and Chart 1.2.2). Compared to the framework presented in the July Inflation Report, the stronger-than-projected course in aggregate demand conditions on the back of a stronger credit impulse, and exchange rate developments became the prominent factors that drove the trend of inflation up.

Chart 1.2.1: July CPI Inflation Forecast and Actual Inflation * (%)



Sources: CBRT, TURKSTAT.
* Shaded area denotes the 70% confidence interval for the forecast.

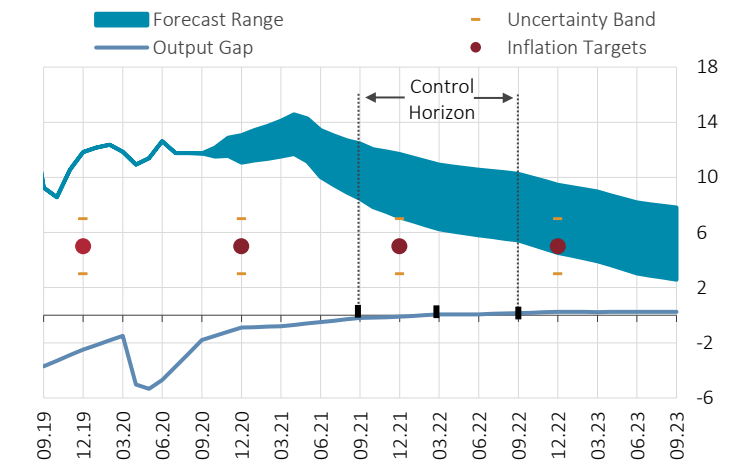
Chart 1.2.2: July Forecast and Actual Rates for Inflation Excl. Unprocessed Food, Energy, Alcohol-Tobacco and Gold (B Index)* (%)



Sources: CBRT, TURKSTAT.
* Shaded area denotes the 70% confidence interval for the forecast.

Based on the outlook for Turkish lira-denominated import prices, aggregate demand conditions, and food prices, inflation forecasts have been revised upwards. Under the current monetary policy stance and strong policy coordination, inflation is projected to converge gradually to the targets. Accordingly, inflation is projected to be 12.1% at the end of 2020 and fall to 9.4% at the end of 2021, before stabilizing around 5% over the medium term. With a 70% probability, inflation is expected to be between 11.1% and 13.1% (with a mid-point of 12.1%) at end-2020 and between 7.1% and 11.7% (with a mid-point of 9.4%) at end-2021 (Chart 1.2.3).

Chart 1.2.3: Inflation and Output Gap Forecasts*



Sources: CBRT, TURKSTAT.
* Shaded area denotes the 70% confidence interval for the forecast.

The above-mentioned projections are based on the assumption that there will be no second wave of pandemic that will require substantial mobility restrictions and no additional deterioration in the global risk appetite. As advanced and emerging economies maintain their expansionary monetary and fiscal stance, the low interest rate environment is expected to last for a long time. The projections also rely on an outlook in which maintaining the tight monetary policy stance until the inflation outlook displays a significant improvement and determining the macro policy mix in coordination with an inflation-focused manner will contribute to the improvement in the country risk premium.

The rapid recovery in economic activity recorded in the second half of the year is expected to give way to a milder and more balanced growth trend in the following period. Despite the recent significant tightening in financial conditions following the monetary policy and liquidity management steps, the growth outlook for 2020 has noticeably improved due to the lingering lagged effects of credit expansion, strengthened supportive stance of the public sector via the spending channel, and the continued strong course of exports. It is estimated that the effects of the rapid expansion in credits and monetary aggregates on external balance and the inflation outlook will gradually weaken following the steps towards policy normalization. Reinforcing the macroeconomic policy coordination is expected to contribute to the improvement in macro balances and the disinflation process. Within a framework in which the monetary stance will be determined by considering the indicators of the underlying inflation trend to ensure the continuation of the disinflation process and its consistency with the medium-term inflation target, inflation is projected to assume a downtrend following the first quarter of 2021.

1.3 Key Risks to Forecasts

The outlook underlying the medium-term projections presented in the Inflation Report is based on the Monetary Policy Committee's judgments and assumptions. The major downside and upside macroeconomic risks that may lead to a change in the baseline projections and the associated monetary policy stance are as follows:[3]

- Uncertainties regarding the course of the pandemic and global economic policies
- Uncertainties regarding capital flows towards emerging markets
- Geopolitical risks and volatilities in country risk premium
- Elevated levels of medium-term inflation expectations and uncertainties regarding the backward-indexation behavior

[3] Evaluations of how and through which channel these risks may affect the inflation forecasts cited in the previous section are summarized in Table 3.2.2 in Chapter 3.

- Risks to the coordination between monetary, fiscal and financial policies
- Risks to food prices

Uncertainties regarding the spread of the pandemic and the global economic recovery remain high. Uncertainties regarding the course of the pandemic and the effects of economic policies lead to volatility in the global risk appetite and the capital flows to emerging economies. Geopolitical risks and elevated levels of country risk premium increase the vulnerability of the economy to shocks. Despite the competitive advantage brought about by the level of the real exchange rate, there are both upside and downside risks to exports of goods and services depending on the spread of the pandemic, likely measures, and consumer behavior, particularly in European economies. Accordingly, the spread of the pandemic may have a disinflationary impact through aggregate demand conditions and commodity prices but this impact may remain limited due to the cash flow and balance sheet channels though it may differ across sectors. On the other hand, the recent elevated levels of international food prices and unprocessed food prices keep the upside risks to food inflation assumptions alive.

With year-end and medium-term inflation expectations hovering above the targeted levels, risks to the inflation outlook remain in place through the pricing behavior channel. The strong backward-indexation mechanism in wage and price adjustments may delay the expected decline in inflation. Additionally, if the interaction between the exchange rate, expectations and inflation strengthens, the exchange rate pass-through may increase. Meanwhile, the weak course in demand conditions observed in some sectors may limit the cost pass-through insofar as profitability allows.

Restoring the disinflation process is a key factor for achieving lower sovereign risk, lower long-term interest rates, and stronger economic recovery. The country risk premium and the exchange rate volatility, which remain elevated due to global uncertainties as well as country-specific factors, may pose a downside risk to economic activity through financial conditions and the balance sheet channel and an upside risk to inflation via the costs and expectations channels. Determining the macro policy mix in a way that will ensure a disinflation process through a strong coordination between monetary, credit and fiscal policies during the rebalancing process will help contain macro financial risks and maintain stable growth.

Table 1.1 Monetary Policy Actions

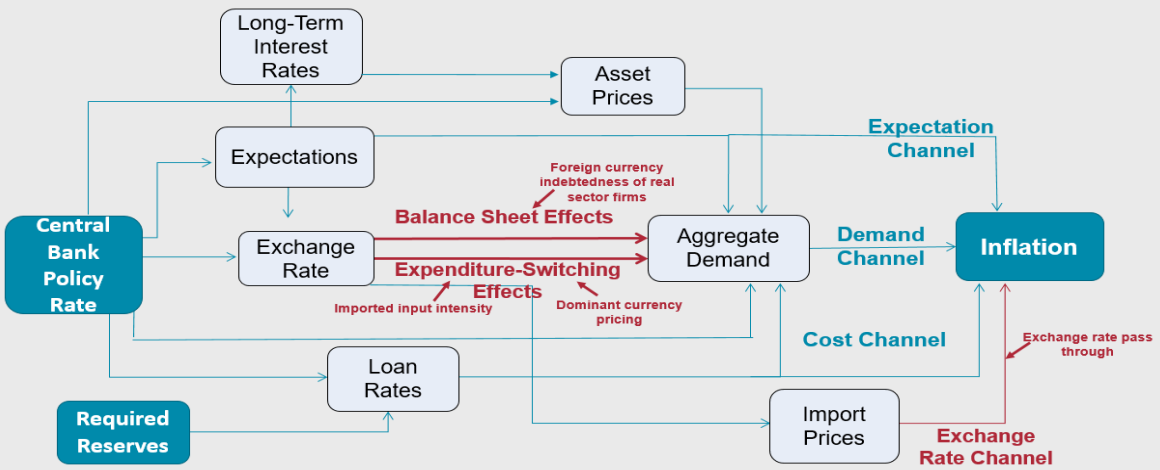
Date	Institution	Policy Decision
6 August 2020	CBRT	• With the normalization in economic activity starting from early August, it was announced that the targeted additional liquidity facilities would be phased out.
	BRSA	• The right to exemption from restrictions on the access to the Turkish lira, which had been granted to International Development Banks, was also given to banks abroad for certain transactions.
7 August 2020	CBRT	• Under liquidity management, liquidity limits offered to primary dealers in the framework of Open Market Operations were reduced by half effective from 10 August 2020.
10 August 2020	BRSA	• The Asset Ratio target value was reduced to 95% from 100% for deposit banks and to 75% from 80% for participation banks.
11 August 2020	CBRT	• Under liquidity management, liquidity limits offered to primary dealers in the framework of Open Market Operations were reduced to zero effective from 12 August 2020.
13 August 2020	CBRT	• In the framework of the tightening steps taken under liquidity management, repo auctions via the traditional method started to be conducted.
18 August 2020	CBRT	• In the framework of the tightening steps taken under liquidity management, banks' borrowing limits at the CBRT Interbank Money Market for O/N transactions were reduced by half effective from 19 August 2020.
20 August 2020	CBRT	• TL and FX reserve requirement ratios for banks fulfilling real credit growth conditions were raised.
24 August 2020	CBRT	• It was announced that due to the increased share of traditional repo auctions under liquidity management, the amount of funding provided by the CBRT through Borsa Istanbul repo markets might be reduced on the days deemed necessary.
25 September 2020	CBRT	• The TL interest rate for the CBRT's TL currency swap transactions was raised to 10.25% from 9.75%.
	BRSA	• The BRSA eased the regulatory capital restriction on banks' derivative transactions with non-residents where banks receive and pay Turkish liras at the maturity date.
28 September 2020	BRSA	• The Asset Ratio target value was reduced to 90% from 95% for deposit banks and to 70% from 75% for participation banks.
30 September 2020	Turkish Presidency	• The Banking and Insurance Transactions Tax applicable to FX and gold buying transactions, and the withholding tax rates on Turkish lira deposits were lowered.
9 October 2020	CBRT	• The TL interest rate for the CBRT's TL currency swap transactions was raised to 11.75% from 10.25%.
12 October 2020	CBRT	• The remuneration rates for Turkish lira required reserves were raised to 7% from 5%. • The commission rates applied to the portion of FX required reserves that should be maintained for deposit/participation fund liabilities were reduced by half.
22 October 2020	CBRT	• The operational framework of the monetary policy was adjusted, and the margin between the CBRT Late Liquidity Window lending rate and overnight lending rate was set at 300 basis points.

Box 1.1

Factors Limiting the Effectiveness of Monetary Policy in Emerging Economies

The channels and the extent of the effect of monetary policies implemented by central banks on market rates, aggregate demand, economic activity and inflation are explained by the monetary transmission mechanism. Processes of the transmission mechanism in emerging economies (EMEs) may differ from those in developed economies. Idiosyncratic factors such as vulnerability to global financial cycles, dominant currency pricing, asset and liability dollarization and currency mismatch in bank and firm balance sheets negatively affect the monetary policy transmission mechanism in EMEs, posing a number of challenges to policy makers. Effects of these elements on the transmission mechanism are shown in red in Chart 1.

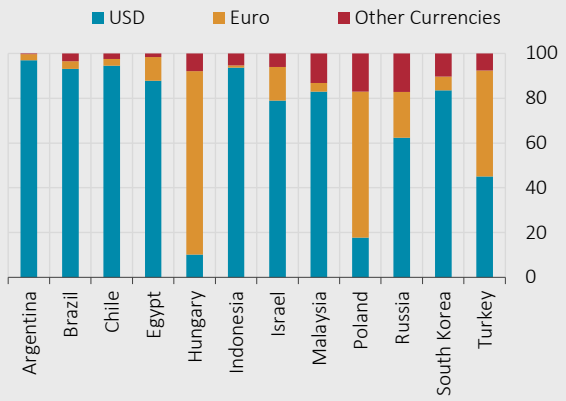
Chart 1: Monetary Transmission Mechanism



Capital flows towards EMEs may fluctuate due to global liquidity conditions. This can cause an adverse loop among loan growth, asset prices and exchange rate, posing a threat to price stability and financial stability. For example, domestic loan growth may accelerate in periods of excessive capital inflows and easing in external financing conditions, which may result in an accumulation of macro-financial risks due to overheating in the economy, appreciation of the real exchange rate and deterioration in the external balance. An interest rate cut made by the central bank to restrict capital inflows may cause an additional boost in domestic demand, leading to a further increase in credit growth and associated risks. On the other hand, in a period of capital outflows and tight global financial conditions, a tightening policy response in the domestic country will cause an additional deterioration in economic activity. In such a case, while inflation rises due to the depreciation of the local currency, aggregate demand may weaken and policy tradeoffs increase. These examples suggest that global financial cycles may be constraining in determining the monetary policy independently, even with a floating exchange rate regime in small open economies.[1] Still, it is considered possible to determine the monetary policy independently in view of domestic circumstances in the face of these global financial cycles only thanks to the measures on capital flows and macro-prudential policies (Rey, 2016).

[1] When there is a currency mismatch in the balance sheets of banks and firms, a monetary policy easing under tight global financial conditions can lead to an additional depreciation in the local currency, decreasing the equity of banks and firms and tightening the leverage constraints, which can result in the contraction of economic activity. This is defined as an "expansionary lower bound" in policy rate in EMEs (Cavallino and Sandri, 2019).

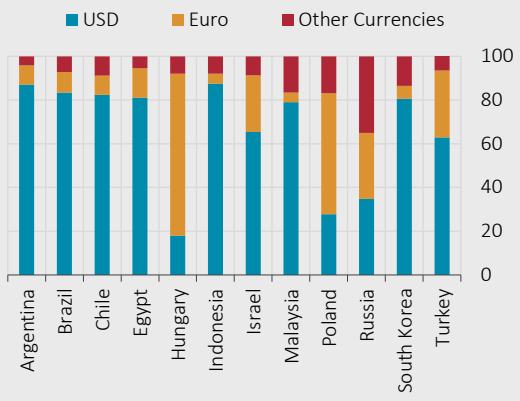
Figure 1: Currency of Export Invoicing* (2019 Shares, %)



Source: Boz et al. (2020), TURKSTAT.

* Export data is from 2018 for Brazil and 2019 for all other countries.

Figure 2: Currency of Import Invoicing* (2019 Shares, %)



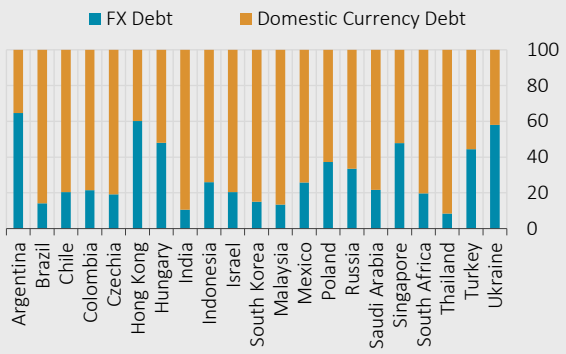
Source: Boz et al. (2020), TURKSTAT.

* Import data is from 2018 for Brazil and 2019 for all other countries.

In addition to the fluctuations in capital flows, certain structural factors specific to EMEs may also reduce the effectiveness of the monetary policy. The first of these is *dominant currency pricing*. In foreign trade, using reserve currencies such as the US dollar or euro rather than any one of the currencies of the two trading countries is called *dominant currency pricing*. EMEs invoice large part of their import and export in US dollars, while the EU member countries, and in the countries with high trade volume with the EU, such as Israel, Russia and Turkey, euro invoicing has also reached significant rates (Figures 1 and 2). In an economy where pricing is made according to any of the currencies of the two countries, if the currency of the domestic country depreciates, the import demand decreases, while exports increase as the currency becomes more competitive (Expenditure-Switching Effect). In such a case, which describes the traditional trade channel, the increase in net exports becomes expansionary by supporting aggregate demand. However, in dominant currency pricing, the price of the traded commodity in terms of US dollars or euro remains constant, which inhibits the price advantage of the depreciation of the local currency. Therefore, a higher depreciation in the exchange rate is needed compared to local currency pricing for the necessary adjustment in the balance of trade. Dominant currency pricing reduces the effectiveness of monetary policy by limiting the expansionary effects of depreciation and the adjustment in the external balance (Chart 1).[2] In addition, dominant currency pricing may cause a strong transmission of the exchange rate to domestic prices depending on the export conditions and increase the exchange rate pass-through driven by the cost channel (use of imported inputs) (Chart 1).

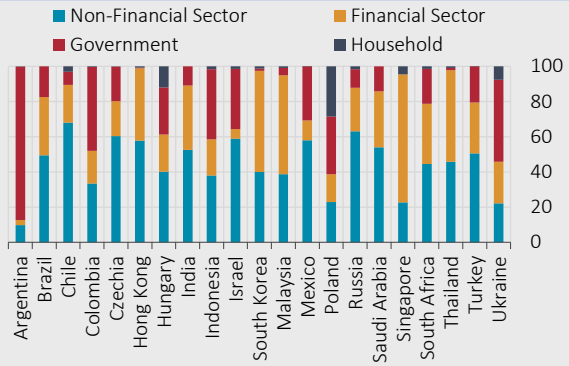
[2] The intensive use of imported inputs is also a factor limiting the adjustment in the external balance following a depreciation in the local currency. Please refer to Akgündüz and Fendoğlu (2019) for the imported input intensity of exports in Turkey

Figure 3: Currency Composition of Borrowing* (2009-2019 Average, %)



Source: IIF.

Figure 4: Borrower Composition of Foreign Currency Borrowing (2009-2019 Average, %)



Source: IIF.

Other factors that reduce the effectiveness of monetary policy in EMEs are foreign currency indebtedness and asset dollarization. The amount of foreign currency borrowing in EMEs is significantly high while that in countries such as Argentina, Hong Kong and Ukraine is above 50% (Chart 3). An analysis of foreign currency indebtedness by debtors reveals that household indebtedness is relatively high in countries such as Poland and Hungary, and real sector indebtedness in countries such as Chile, Czechia and Russia (Figure 4). In cases where firms' foreign exchange indebtedness is high, the depreciation of local currency may adversely affect aggregate demand through the balance sheet channel, limiting or completely eliminating the expansionary effect of net exports (Chart 1). In this way, the balance sheet channel may increase the impact of external shocks and increase policy tradeoffs by causing a negative feedback loop between the real sector and financial intermediation during periods of severe depreciation. In addition to foreign currency indebtedness in emerging economies, it is also common for economic units to hold foreign currency assets in order to hedge against foreign currency risk. In the case of high asset dollarization, a shock that drives the exchange rate up may increase the consuming propensity of foreign currency savers through the wealth effect, limiting the effectiveness of the monetary policy response to the effects of a rising exchange rate.

In sum, fluctuations in the global risk appetite pose a threat to macroeconomic and financial stability, and the idiosyncratic structural characteristics of EMEs further increase the effects of the shocks and negatively affect the monetary policy mechanism. Therefore, using solely the policy rate tool to deal with the shocks affecting the economy may not be sufficient. This points out the need for a policy framework that allows the use of an optimal combination of different policy instruments in view of country-specific circumstances to increase the effectiveness of monetary policy in EMEs and to minimize the trade-offs.

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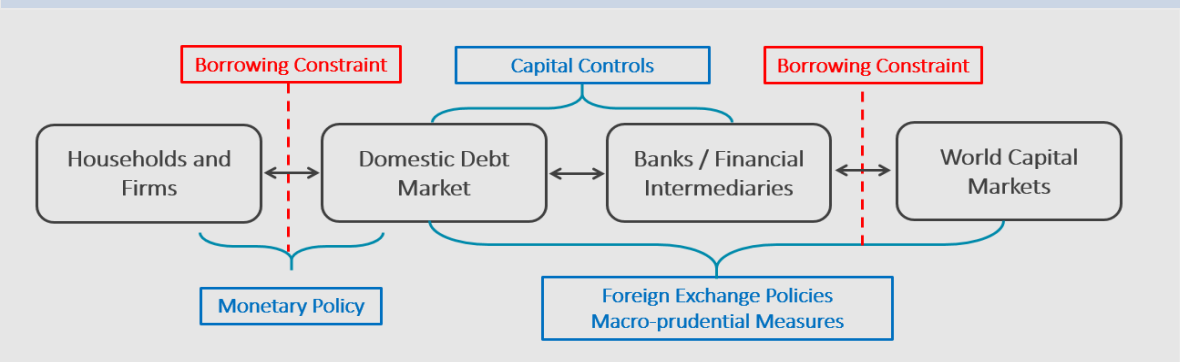
Box 1.2

Integrated Policy Framework

In emerging market economies (EMEs), issues such as dominant currency pricing in foreign trade, dollarization in assets and liabilities, maturity and currency mismatch in banks' and firms' balance sheets, external financial constraints, and worsening inflation expectations lead to differences in the functioning of the monetary transmission mechanism and policy trade-offs from those in developed economies. These problems make EMEs more vulnerable to such shocks. In the face of capital outflows and major domestic currency depreciation, central banks may have to trade raising interest rates to control inflation expectations off against driving the economy into a sharp slump. Due to these constraints affecting the exchange rate pass-through to inflation and the real economy, the interest rate policy alone may not be sufficient to establish price stability and financial stability. In that case, the optimal policy requires a combination of many policy tools such as capital controls, exchange rate policies, and macro-prudential policies. Consequently, central banks in the EMEs respond to shocks by implementing other tools than interest rate policy. For example, central banks in countries with high exchange rate pass-through and massive foreign currency debt intervene aggressively in exchange rate volatility, while, in other countries with fewer vulnerabilities, they intervene more limited (BIS, 2019; Basu et al., 2020). Therefore, in EMEs, a policy framework is required that determines when, how, and to what extent policy tools should be implemented to reach policy goals taking into account each country's characteristics. Thus, the IMF has presented the Integrated Policy Framework incorporating monetary policy, capital controls, macro-prudential policies, and exchange rate policies to address these needs (Basu et al., 2020; Adrian et al., 2020).

Chart 1 shows how macro policies incorporated within the Basu et al. (2020) model transmit to the economy through different agents and markets to show those policies' implementation within the integrated policy framework.

Chart 1: Integrated Policy Framework



Source: Basu et al. (2020) is used for the scheme.

In the integrated policy framework, monetary policy influences the interest rates banks apply to households and firms. The model incorporates both domestic and foreign borrowing constraints. Domestic financial intermediaries borrow in foreign currency but issue bonds in domestic currency and this generates currency mismatch in their balance sheets. Besides, since financial intermediaries have limited capital, and cannot fully alleviate the exchange rate risk as they are subject to external borrowing constraints, they charge a risk premium on bonds because of the default risk. The policy instrument moderating the currency mismatch risk in financial intermediaries' balance sheets is modeled as taxes on capital inflows. This policy tool limits excessive borrowing and minimizes the currency mismatch in the pre-crisis period or mitigates capital inflow volatility induced by global financial cycles.

In the integrated policy framework, the exchange rate policy incorporates the central bank's *foreign exchange transactions*. The central bank also affects financial intermediaries' lending and borrowing capacity through reserve requirement ratio. Thus, the central bank affects the risk premium on foreign borrowing by regulating financial intermediaries' balance sheets, thereby affecting the exchange rates.

In the integrated policy framework, the optimal policy is determined as a function of shocks and each country's vulnerabilities. For example, each country's initial conditions, financing constraints, the foreign exchange market's depth, and the currency and maturity mismatch in balance sheets generate a discrepancy in the optimal policies that differ across countries.

Since both benefits and costs are endogenous in this approach, it is not optimal to implement all policy tools simultaneously because employing a policy tool affects other tools' cost-benefit analysis. For example, implementing capital controls in the pre-crisis period affects the cost-benefit analysis of the monetary policy conducted during a crisis. Limiting capital inflows in the absence of a crisis restricts aggregate demand and debt accumulation, thereby preventing risk exposure and vulnerability in the economy, and reducing the monetary policy's need to stimulate demand by mitigating the impact of any adverse shock. Consequently, although the model presents different policy tools to analyze the integrated policy framework, the optimal policy is determined according to each country's specific conditions.

Chart 2: Risk Premium Shock

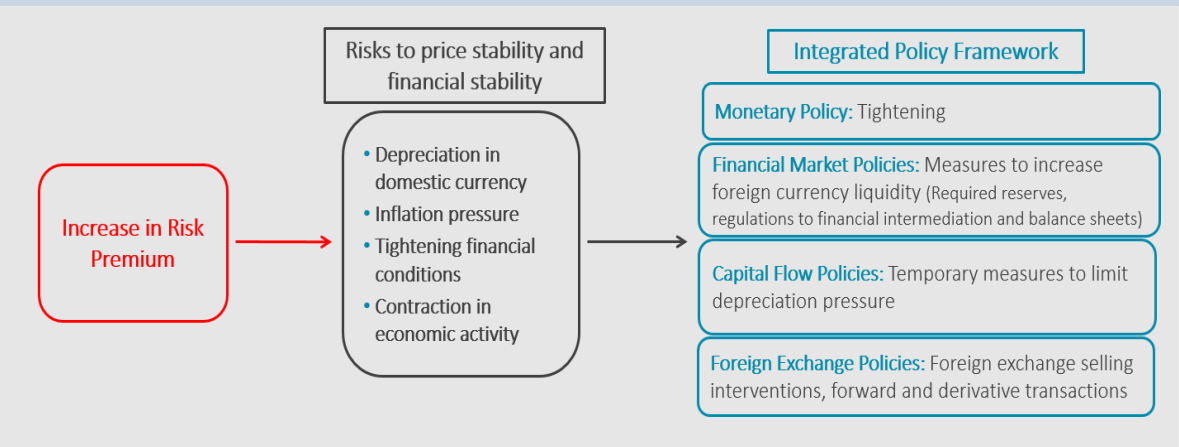


Chart 2 shows the risks induced by unexpected domestic currency depreciation in a country with high exchange rate pass-through and currency mismatch in balance sheets, and the integrated macro policy conducted in response. The domestic currency depreciation raises inflationary pressures through the exchange rate pass-through channel. The currency mismatch in balance sheets means that the domestic currency depreciation and exchange rate volatility tighten domestic financial conditions through external financing and balance sheet channels. This leads to a contraction in credit capacity and subsequently slows down economic activity. The integrated policy framework also proposes a policy rate increase to moderate price stability risks, as in classical models. However, unlike classical models, supplementing monetary policy with exchange rate policies or capital inflow taxes in the integrated policy framework limits domestic currency depreciation and reduces policy tradeoffs.

Chart 3: Rise in Global Risk Appetite

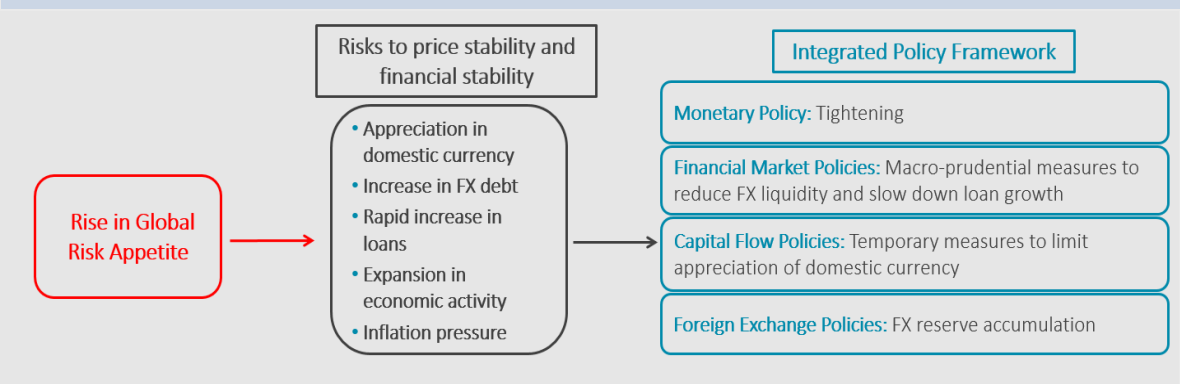


Chart 3 shows risks induced by a rise in global risk appetite and macro policies to be implemented in the integrated policy framework in response to those risks. A rise in global risk appetite relaxes financial constraints, thereby leading to foreign currency debt accumulation, acceleration in capital inflows, and appreciation in the domestic currency. This situation also relaxes domestic financial constraints, for instance causing growth in consumer credits and thereby expanding economic activity. However, growing consumer credit capacity worsens the current account, raising the possibility of a sharp domestic currency depreciation and fueling financial stability risks. In case of such a threat to price stability, monetary policy may require tightening. However, in times of strong risk appetite, tightening monetary policy may lead to further domestic currency appreciation, therefore, monetary policy should be supported by macro-prudential policies restricting borrowing (such as rising required reserves , cutting maturities in consumer loans, reducing credit/value or loan/income ratios, etc.) to moderate risks to financial stability. As for exchange rate policies, central banks are advised to accumulate foreign exchange reserves during such periods.

Due to coronavirus epidemic, many countries experienced more than one economic shock simultaneously. For example, many EMEs have recently experienced shocks that have adversely affected domestic and foreign financial conditions, raised risk premiums, and contracted global demand. In such a period, it became necessary to make use of different policy instruments together. The integrated policy framework model provides a setup in which policy tools can be determined according to each country's characteristics. Since this new approach incorporates many policy tools, the policy communication clarifying when and how those policy tools will conducted becomes more important.

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