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# Financial Stability and Monetary Policy

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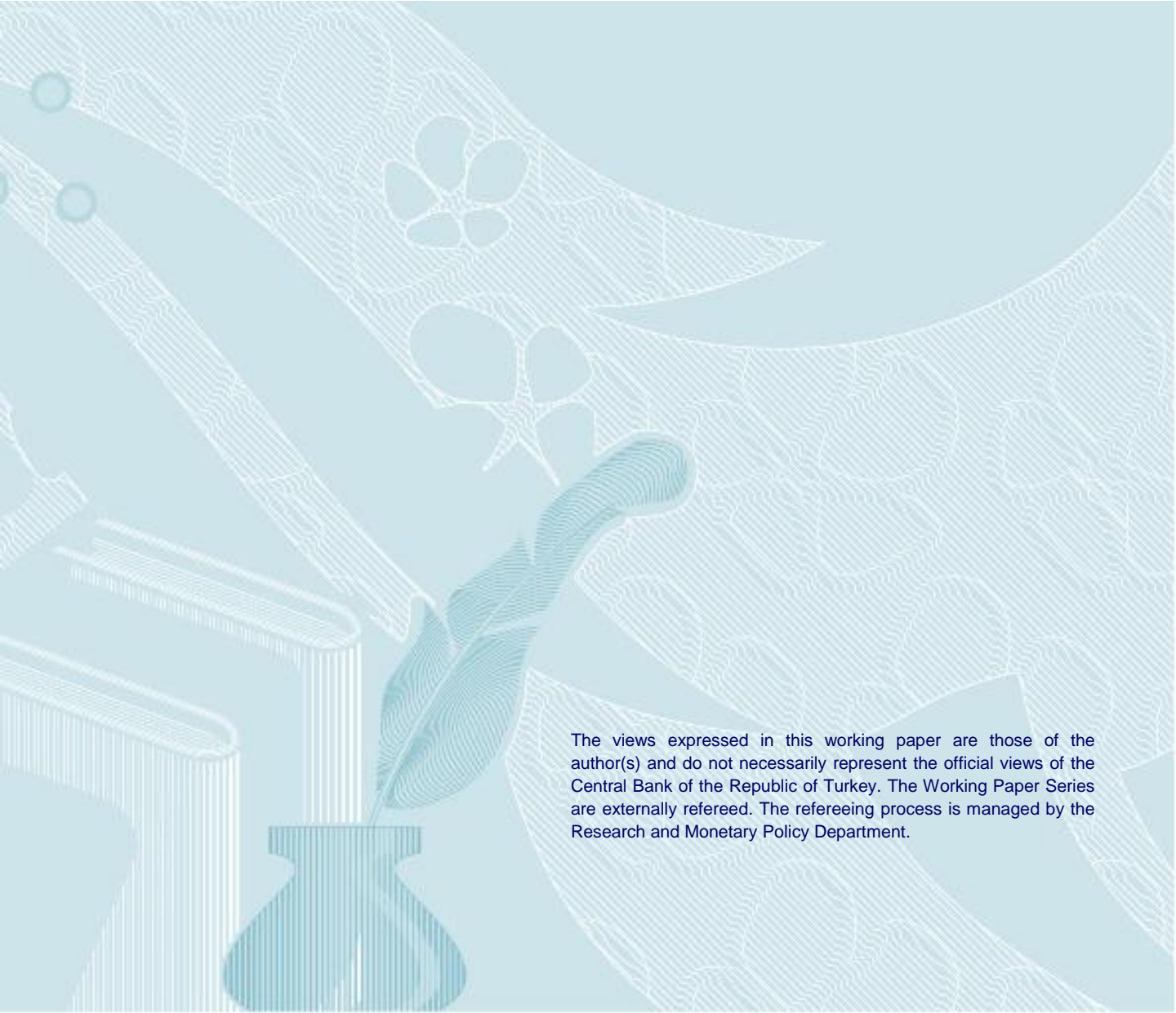
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# Financial Stability and Monetary Policy\*

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## Abstract

Rapid credit growth, short-term capital inflows, and associated macro-financial risks in the aftermath of the global crisis necessitated the use of alternative policy instruments in Turkey. Accordingly, the Central Bank of the Republic of Turkey (CBRT) has designed and adopted a new policy mix to incorporate financial stability into the inflation targeting framework by utilizing several complementary instruments. This study assesses the new policy strategy implemented by the CBRT. First we introduce the main structure of the new policy and explain how and for what purpose each instrument is used. We then elaborate on the communication strategy and assess the initial impact of the implementation. Although it is too early to draw firm conclusions, initial results so far suggest that a policy mix of lower policy rate, wider interest rate corridor, combined with higher reserve requirement ratios may serve as an appropriate strategy in dealing with short term capital inflows, especially in countries with current account deficits.

**Key words:** Monetary policy, financial stability, macroprudential policies

**JEL Classification:** E44, E52, E58

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## **I. Introduction**

Following the deepening of the global financial crisis in the final quarter of 2008, all countries focused on containing the damaging effects of the crisis. Turkey was not an exception in this regard and thus adjusted its monetary and fiscal policies to offset the adverse effects of the crisis. Accordingly, the CBRT not only provided substantial liquidity support to help maintain the functioning of money and credit markets but also delivered sizeable and front-loaded monetary easing in the form of 1025 basis points cumulative policy rate cut in one year.

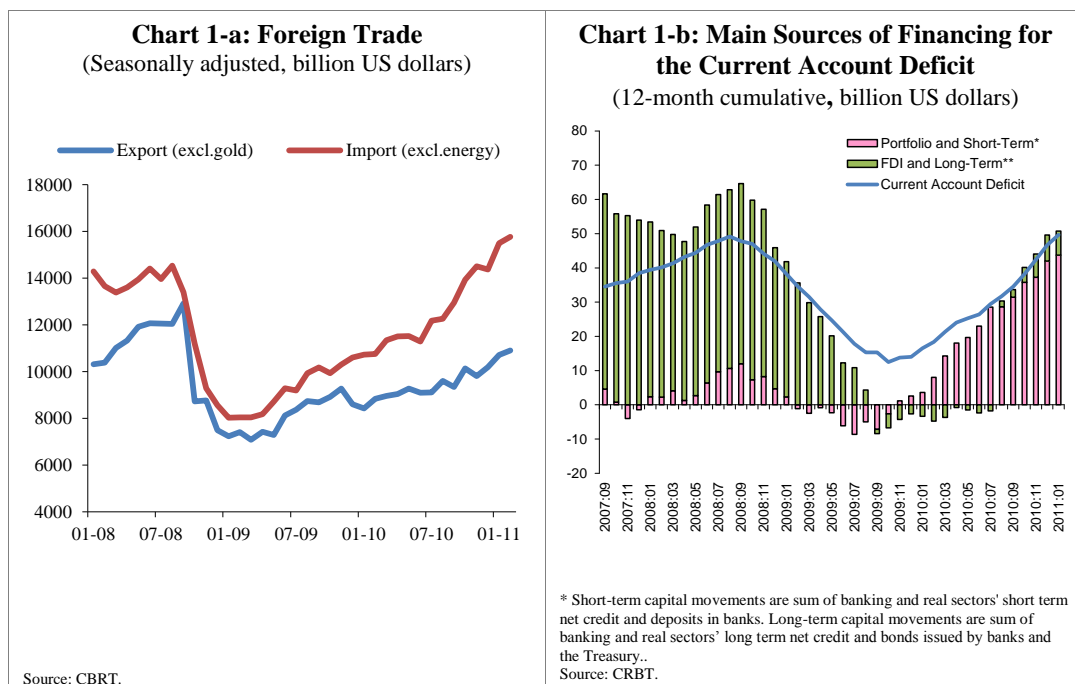
These measures, coupled with sound financial system and the strong household balance sheets, supported a rapid and domestic demand driven recovery in the Turkish economy.<sup>1</sup> The rebound in domestic demand and the appreciation of the Turkish lira led to an acceleration in import demand. Meanwhile, external demand remained relatively weaker during the post-crisis period because of depressed economic activity in Turkey's main export destinations.<sup>2</sup> As a consequence, the growth in exports lagged far behind the increase in imports (Chart 1-a), leading to a significant widening in trade deficit.

The surge in capital inflows further contributed to the widening of the imbalance between domestic and external demand through easier access to credit and appreciation of the Turkish lira. The rapid deterioration of the current account and the growing share of short-term capital inflows and portfolio investments in net capital inflows increased the economy's exposure to sudden changes in global risk appetite, thus, warranting an alternative policy approach to cope with mounting concerns over macroeconomic and financial stability (Chart 1-b). This paper assesses the new policy mix designed by the CBRT. To this end, we describe the background for the new policy approach, introduce the main tools of the policy mix, and explain how and for which purposes these instruments are employed and how they are communicated. Finally, we discuss the initial outcomes.

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<sup>1</sup> Alp and Elekdağ (2011) uses a Dynamic Stochastic General Equilibrium model to analyze the contribution of crisis period monetary easing to economic growth.

<sup>2</sup> Çınar et al (2010).



## II. A New Approach to Monetary Policy

Under the inflation targeting framework that has been implemented implicitly since 2001, and officially since 2006, the primary goal of monetary policy has been to achieve price stability, with short term interest rate being the main instrument to achieve this goal. This strategy has worked reasonably well to anchor inflation expectations and helped to build resilience to global shocks,<sup>3</sup> which brought inflation down permanently to single digit after many years of chronic high inflation.

Notwithstanding the merits of inflation targeting, the global crisis has taught us that ignoring financial stability can be harmful to macroeconomic stability and price stability in the medium to long run. In fact, it has been widely accepted that central banks should not overlook the risks accumulating in the financial system and the bubbles in asset prices. However, it is impossible for a central bank to target more than one variable with one instrument. The level of interest rates that would help maintain financial stability may be different than the level of rates that would sustain price stability. For example, in times of rapid economic growth driven by productivity gains, a low policy rate may suffice to keep inflation at targeted levels but fail to prevent the accumulation of macro financial risks.

In emerging markets, the gap between the policy rates required to ensure financial and price stability can be even greater in some occasions: For example, during a global boom

<sup>3</sup> Kara and Orak (2008) present a thorough assessment on inflation targeting in Turkey.

period, the increased risk appetite fuels capital flows towards emerging markets, magnifies balance sheet mismatches, and leads to an accumulation of financial stability risks by distorting resource allocation through rapid credit growth and real exchange rate appreciation. Under such circumstances, containing the macro financial risks associated with excessive exchange rate appreciation naturally calls for lower short-term policy rates. However, keeping policy rates low for a long time may further boost domestic absorption and, thus, threaten price stability. In other words, external and internal balances may require different interest rates. Therefore, if a central bank seeks to achieve price stability without hampering financial stability, it may have to resort to more than one instrument, especially in times of surging capital inflows.

Against this backdrop, starting from mid-2010, the CBRT has given an increased emphasis on global imbalances, capital flows, and associated macro financial risks. The CBRT stated explicitly that the rapid divergence between domestic and external demand as well as short-term capital inflows have contributed to financial stability risks, and underscored the need to use alternative instruments. To this end, the CBRT has launched a new policy mix to support financial stability without prejudice to price stability.

In order to contain the accumulated macro financial risks, the CBRT adopted two intermediate objectives: discouraging short term capital inflows (limiting excessive appreciation pressures) and containing domestic credit growth. To this end, the new framework employed instruments such as reserve requirement ratios and interest rate corridor in addition to conventional policy rate.

### **III. Implementation of the New Policy**

Starting from mid-2010, the Bank began to highlight the build-up of macro financial imbalances, stating that alternative policy instruments may be used more effectively to cope with this situation.<sup>4</sup> The CBRT started to employ reserve requirement ratio as an active policy tool in late-2010 to ease the trade-offs posed by massive capital inflows. First, to enhance the effectiveness of required reserve ratios as a policy instrument, the Bank stopped paying interest on required reserves. Secondly, the CBRT changed the operational framework to allow flexible use of liquidity management.<sup>5</sup> The one-week

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<sup>4</sup> “If the divergence in growth rates between domestic and external demand continues in the forthcoming period, it would be necessary to utilize other policy instruments such as required reserve ratios and liquidity management facilities more effectively.” (CBRT, 2010a).

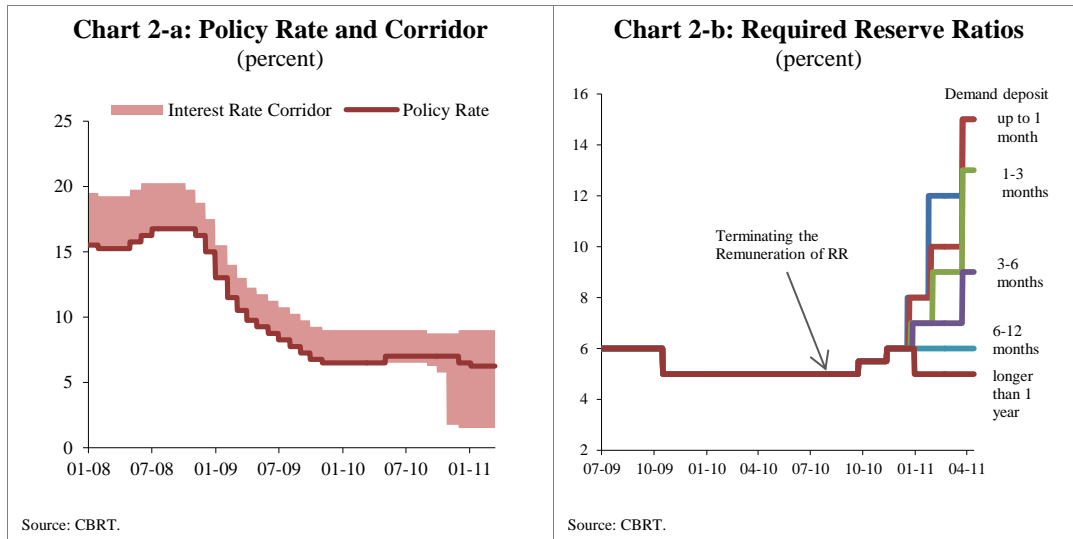
<sup>5</sup> For technical details on the liquidity management strategy, see (CBRT, 2010b).

repo auction rate became the main policy instrument, while overnight borrowing and lending rates defined the lower and upper bound of the interest corridor. By adjusting the amount of liquidity injected to the market, the CBRT increased the volatility of overnight market rates, and facilitated the use of the interest rate corridor as an active policy tool (details explained below).

By the last quarter of 2010, strong capital inflows, coupled with a widening current account deficit and rapid credit expansion, necessitated a policy response. Since hiking interest rates in response to rapid credit growth would attract further capital inflows and thus exacerbate the buildup of macroeconomic imbalances, the CBRT decided to employ alternative policy instruments. To this end, the CBRT adopted a policy mix by lowering short-term interest rates to discourage capital inflows, while containing credit growth by increasing reserve requirement ratios. Additionally, reserve requirements were differentiated to extend the maturity of the liabilities of the financial system.

The first pillar of the policy mix was to discourage short-term speculative capital inflows, and, thus, to reduce exchange rate misalignments and associated macro financial risks that might be driven by abrupt changes in the global risk appetite (sudden stop). Accordingly, the Bank first reduced the overnight borrowing rate (lower bound of the interest rate corridor) by 500 bps to 1.50 percent, and lowered the policy rate by 75 bps to 6.25 percent (Chart 2-a). Widening the gap between overnight borrowing and lending rates (the interest rate corridor) allowed active management of the volatility in short-term money market rates. By reducing the average return on short-term funds and by raising the volatility of the short term interest rates, the Bank aimed to lower the return-to-risk ratio for speculative short-term positions and to discourage short-term capital inflows.

The second pillar of policies for reducing macroeconomic and financial imbalances aimed at containing credit growth. To this end, the CBRT began to gradually increase reserve requirement ratios to tighten the liquidity and credit supply. The CBRT stopped paying interest on required reserves, increased the weighted average of reserve ratios, and broadened the coverage of liabilities subject to required reserves. In addition, in order to support financial stability by extending the maturity of banking sector liabilities, required reserve ratios were differentiated by maturity, with higher ratios for shorter term maturities (Chart 2-b).



Reserve requirement ratios affect credit growth mainly through: (i) the direct cost channel, (ii) the interest rate risk and liquidity channel. Since changes in reserve requirement ratios have a direct impact on banks' funding costs, a simple method can be used to quantify the direct cost channel under certain assumptions. In an economy with a relatively simple banking system like Turkey where primary liabilities are deposits, the direct cost of a hike in reserve requirement ratios can be roughly estimated by multiplying the deposit interest rate by the reserve requirement ratio.<sup>6</sup> In this regard, we roughly calculate that cancelling the remuneration on reserve requirements since September 2010 and bringing the weighted average of reserve requirement ratios up to 13.3 percent as of April 2011 have induced an extra intermediation cost of around 100 basis points. In other words, banks are paying a reserve requirement cost of 1 lira per 100 lira deposit they collect.<sup>7</sup>

Besides the direct cost channel, required reserve ratios may have an impact on the bank lending rates through interest rate risk and liquidity channels. This is mainly because a change in reserve requirement ratio induces a change in the composition of bank liabilities. In an inflation targeting regime with short term interest rate as the main policy tool, the liquidity withdrawn via required reserve hikes is injected back to the market through central bank funding, and therefore the main convention is that required reserve ratios should not have a significant impact on loans. However, in practice central bank funding and deposits may not be perfect substitutes. While the central bank funds have a

<sup>6</sup> In order for the direct cost channel to be effective, there should be no (or, compared to funding costs, much less) interest payment on required reserves. As stated above, the CBRT terminated the remuneration of reserve requirements as of September 2010 in order to increase the effectiveness of required reserve ratios as a policy tool.

<sup>7</sup> Banks may either pass this extra cost on interest rates for deposits and credits, or lower their profit margins, depending on the degree of interbank competition. Alper and Tiryaki (2011) present a comprehensive analysis on the transmission channel of required reserves.



maturity of one week, the average maturity of deposits is almost 50 days in Turkey (Chart 7-b). If banks try to compensate the entire liquidity gap resulting from required reserve hikes by borrowing from the central bank, they will have to bear the additional interest rate risk caused by the maturity mismatch. Moreover, borrowing from the central bank will reduce the liquid assets of the bank since central bank funding is collateralized. Therefore, when faced with higher reserve requirements, the banks may prefer to reduce their reliance on short term money market funds either through setting higher loan rates or tighter lending conditions. Both would lead to a slowdown in loan growth rates.

The interest rate risk associated with the higher reliance on the short-term funding will be even more pronounced if the future path of short term rates is uncertain. In fact, the CBRT has intentionally increased the volatility of short-term interest rates by late-2010 to strengthen the risk channel of required reserves. Moreover, the CBRT's strategy of providing liquidity primarily through quantity auctions (which means no full-allotment) further strengthened the interest rate risk and liquidity channels.

In sum, in the CBRT's policy strategy of widening the interest rate corridor, lowering the predictability of interest rates, and raising required reserves have been designed as complementary measures to restrain short-term capital inflows and credit growth.

#### **IV. Communicating the Monetary Policy**

Increased predictability of the macroeconomic relationships during the period of “great moderation” (from 1990s to mid-2000s), led to the misconception that economic dynamics can be described by a simple analytical framework. There was a broad consensus on the “science” of monetary policy. In fact, the communication policy of almost all inflation-targeting central banks during this period was based on a simple New-Keynesian model.<sup>8</sup> These models describe the central bank behavior in terms of one main objective (inflation) and one instrument (short-term interest rates), and, therefore, set out a very clear and simple framework for communication. This easy-to-understand and long-tested approach has helped to simplify the communication of monetary policy to a great extent during the great moderation period.

Nevertheless, the perception of monetary policy has changed dramatically after the global crisis. There has been a growing consensus that central banks should put more weight on

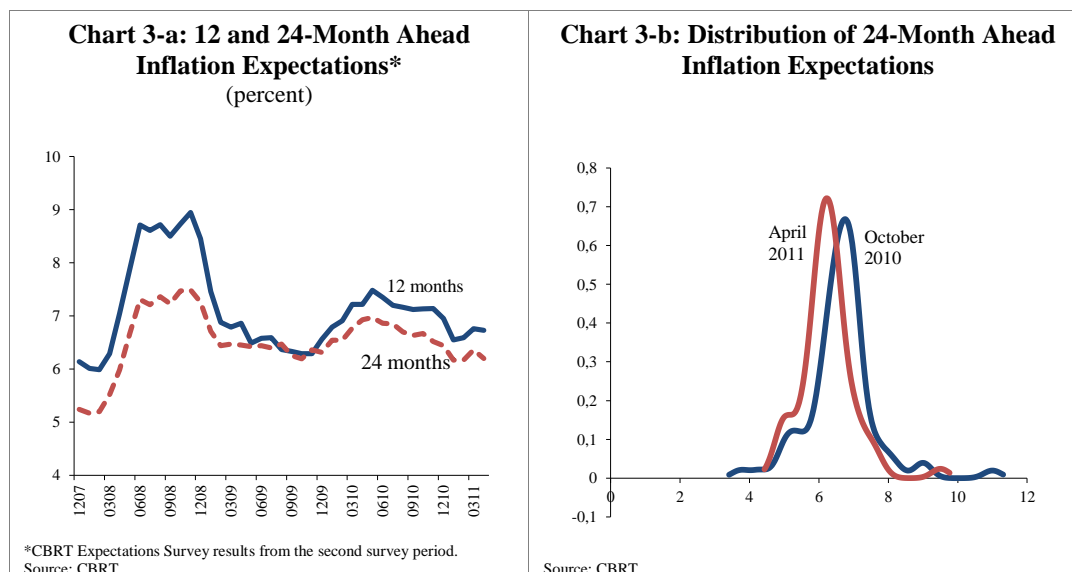
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<sup>8</sup> Clarida, Gali and Gertler (1999).

financial stability, credit growth, and asset prices. In fact, more and more studies have tackled the question of designing appropriate macroprudential instruments to deal with financial stability. This new approach of multiple instrument framework admits that the economy is more complicated than implied by simple log-linearized models.

In view of the changing global perspectives, the CBRT has changed its policy framework to incorporate financial stability into the inflation targeting framework. This strategy has initially generated some difficulty in communication as most economic agents and central bank watchers were not familiar with the new approach. Introduction of the new policy strategy, by construction, led to communication challenges, since these new policies were mostly based on judgment, without a widely-accepted theoretical framework or comprehensive empirical evidence. The uncertainty regarding transmission channels of new policy instruments such as the interest rate corridor and required reserves complicated the communication of the monetary policy strategy. Moreover, modifying the bank's objective function was an important challenge for communication since it could be perceived as abandoning the inflation targeting framework.

In order to address all these challenges, the CBRT has pursued an active communication strategy. To prevent a possible deterioration in inflation expectations, a cautious policy stance was adopted against inflation risks, highlighting the overriding objective of price stability on every occasion. Moreover, the CBRT reminded that ignoring current macro financial imbalances could threaten price stability in the longer term. In addition, it was emphasized that the CBRT would closely monitor the effects of the new policy measures on inflation and would not hesitate to implement additional measures if necessary. Thus, despite all concerns regarding the new policy mix, inflation expectations remained quite stable (Chart 3-a). Medium-term expectations even improved slightly, and the disagreement among inflation expectations declined (Chart 3-b). The timing of the implementation of the new policy mix coincided with a downtrend in inflation, which helped to reduce the risk of deterioration in inflation expectations.



The CBRT has been quite open with the public regarding the new policy framework and its limitations. It has been acknowledged that using reserve requirements alone may not be enough to contain rapid credit growth and domestic demand; hence macroprudential measures implemented by other institutions may be needed to support the monetary policy response. The CBRT has encouraged measures to restrain credit supply to enhance the effectiveness and efficiency of the new policy mix.<sup>9</sup> In other words, the CBRT underlined the crucial role of the fiscal prudence and the appropriate use of other macroprudential tools (such as the Banking Regulation and Supervision Agency’s –BRSA– loan to value ratio tool) for the success of the new policy approach.

Although it looks quite complicated at first sight, the framework is not significantly different from the conventional inflation targeting framework. The only difference is that, previously the policy instrument was the one week repo rate, but now the instrument is a “policy mix”—which consists of a combination of short-term interest rates, reserve requirement ratios, and an interest rate corridor. The CBRT has aimed to use these instruments in the right combination in order to cope with both inflation and macro-financial risks. Accordingly, the monetary policy stance in this framework is determined by a mixture of all instruments outlined above. Just like the conventional inflation targeting framework, the policy is forward looking and contingent on the economic outlook. The exact setting of the policy mix depends on the factors affecting price stability and financial stability.

<sup>9</sup> See (CBRT, 2011a).

The CBRT publicly shares its inflation forecasts through inflation reports. The forecasts also include a qualitative path for the near-term course of policy rates. Qualitative information on short-term interest rates has been published in inflation reports since 2006, except for October 2008, when uncertainty was at its peak during the worst times of the global crisis. After the adoption of the new policy strategy, the CBRT started to communicate the stance of monetary policy by using terms such as “policy mix” and “monetary tightening”, rather than announcing a course for a single policy rate. To ease the communication challenges due to multiple instrument framework, the CBRT established a soft reference range for the annual rate of credit growth. The degree of intended policy tightening was communicated through credit growth, which is easily observable and understandable by economic agents.<sup>10</sup> Additionally, inflation reports have provided detailed information on how and which policy tools would be used under alternative scenarios regarding global economic outlook.

Communicating macroprudential policies to support financial stability is, by definition, more challenging than communicating conventional monetary policy actions that merely target price stability. Financial stability is associated with a very large and diverse set of variables. Moreover, financial-stability risks may vary across countries depending on the structure of financial system. Therefore, it may be necessary to focus on different indicators at different times.

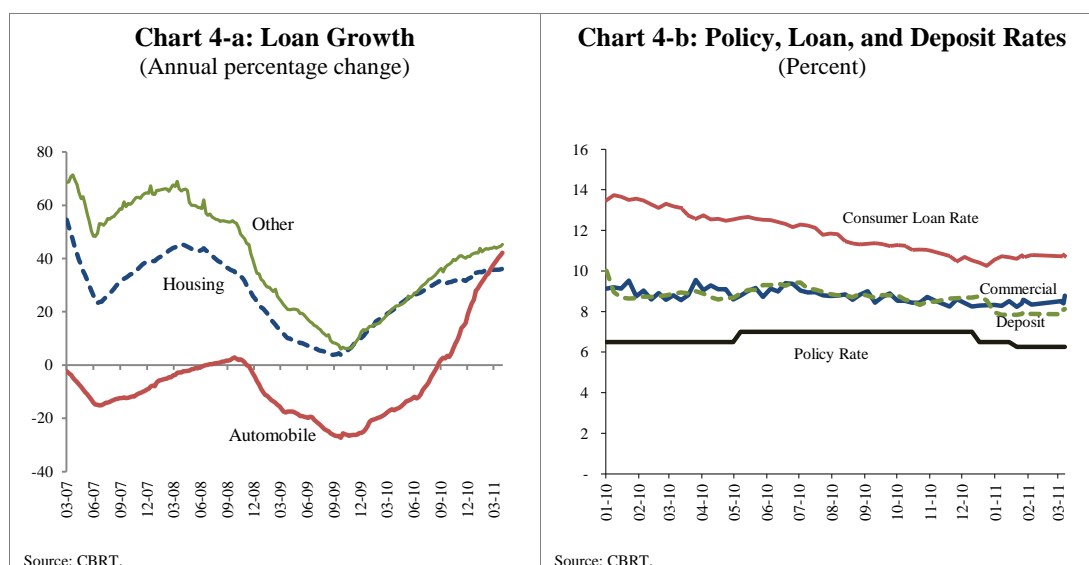
The CBRT’s increased focus on financial stability is a response to the repercussions of global imbalances. Ample short-term global liquidity have not only stimulated import demand in Turkey through appreciation of the local currency but also boosted credit supply, which, coupled with soaring commodity prices, resulted in a current account deficit with a deteriorating financing quality. The CBRT assessed that this situation increased the risk of a sudden stop, and thus, posed a threat to financial stability from a macro perspective. Therefore, the new monetary policy mix aimed at containing the impact of potential abrupt movements in global capital flows on the domestic economy. To this end, the CBRT focused on the current account, the quality of financing, and rapid credit growth.

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<sup>10</sup> For example, the January 2011 Inflation Report assumes that “a limited monetary tightening brought the loan growth rate down to 20-25 percent in 2011” (CBRT, 2011b).

## V. The Impact of the New Policy Mix on Credit and Financial Markets

The new policy mix aims to keep loan growth at reasonable rates to contain macro financial risks. It is too early to assess the impact of the recent policy measures on credit growth as the loans are expected to respond to policy actions with some lag. In fact, the new policy strategy which was launched by the end of 2010 does not seem to have an immediate impact on consumer loan growth, as the annual rate of loan growth continued to increase, albeit at a decelerating pace (Chart 4-a). Meanwhile, loan rates remained flat while deposit rates fell in line with the policy rate (Chart 4-b).<sup>11</sup>



Following a monetary policy decision, it takes a while for banks to adjust their balance sheets. Moreover, the degree to which the new policy affects loans through the liquidity channel is not linear. In fact, the increase in commercial loan rates following the sharp tightening in March supports the idea that the degree of substitution between central bank funding and deposits may weaken after a certain threshold (Chart 4-b).

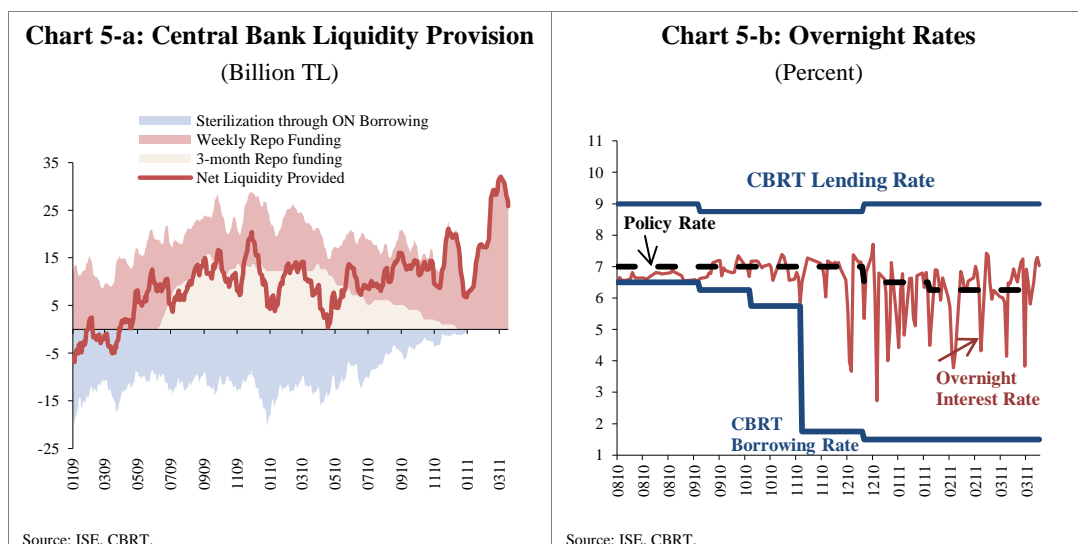
Market indicators suggest that, recently, the tightening in liquidity conditions may have strengthened the impact of the new policy mix on the lending behavior via *liquidity and interest rate risk*. The reserve requirement tightening from September 2010 to March 2011 have increased the liquidity need of the banking system through a liquidity drain of approximately 40 billion Turkish liras.<sup>12</sup> To cope with this additional liquidity gap, banks initially resorted to central bank funding. As seen in Chart 5-a, the CBRT has been

<sup>11</sup> In March, the CBRT decided to induce an additional tightening by increasing the weighted average of required reserve ratios by about 400 basis points. This decision was not in effect at the time this paper was written. The effects analyzed below show only of the decisions taken until February.

<sup>12</sup> This amount is around 12 percent of the total Turkish lira credit stock extended by banks to businesses and households.

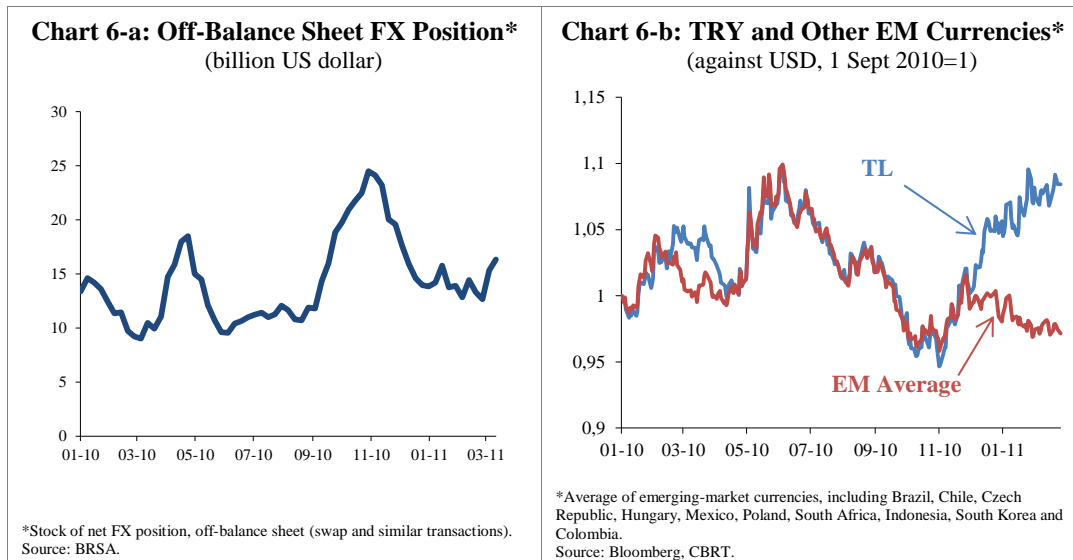
injecting large amounts of liquidity into the market lately via open market operations. The liquidity financed by the CBRT is expected to reach to unprecedented levels once the March reserve requirement decision becomes effective. To strengthen the impact of balance sheet channels (liquidity and interest rate risk), the CBRT has induced some volatility in short-term interest rates. As a matter of fact, the volatility of overnight rates in the money market have increased markedly after the sizeable cut in the CBRT borrowing rate in November, which significantly widened the interest rate corridor (Chart 5-b).

All these developments can be associated with the CBRT's strategy to weaken the substitutability of deposits with short-term funding. The increased need for central bank liquidity and the induced volatility in short-term interest rates are likely to cause financial intermediaries with large liquidity deficits to be more cautious regarding their liquidity management, leading to tighter credit supply conditions in the forthcoming period.

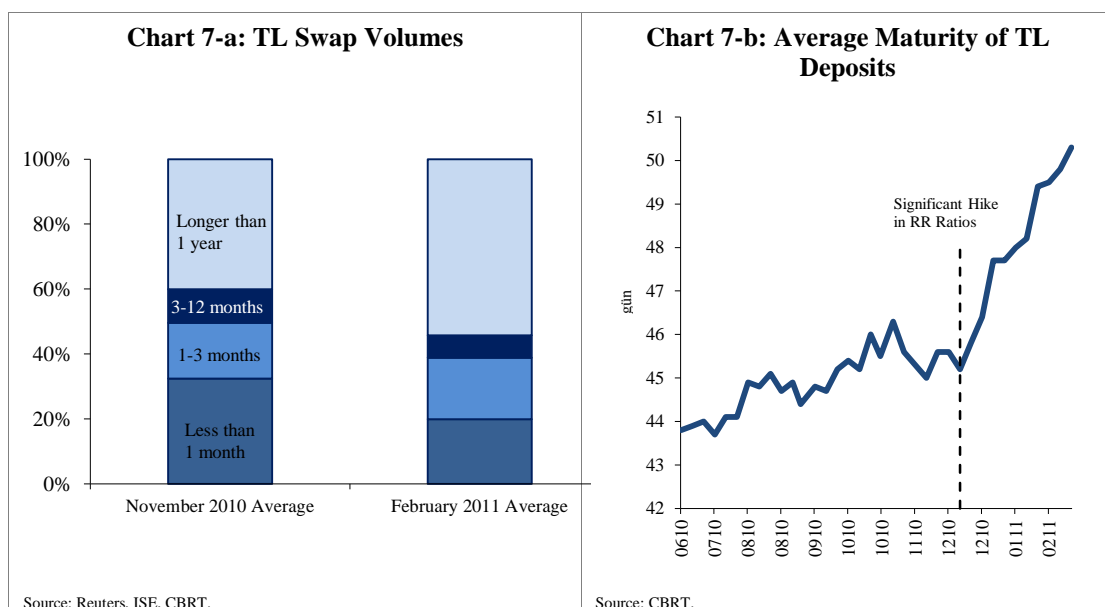


The second pillar of the new policy strategy is to avoid potential exchange rate misalignments that cannot be explained by economic fundamentals. The exchange rate movements caused by massive short-term capital inflows may exacerbate macroeconomic and financial imbalances by leading to inefficient allocation of resources. In order to discourage short-term and speculative capital inflows, the CBRT has (i) lowered central bank borrowing rates, (ii) allowed large swings in money market rates by widening the gap between overnight borrowing and lending rates (interest rate corridor) significantly, and (iii) reduced policy rate (1-week repo rate) by 75 basis points. All these measures proved highly effective in discouraging short-term speculative capital inflows. As seen in Chart 6-a, following the adoption of the new policy mix, there have been sizable outflows

from the swap market—a major source of short-term inflows.<sup>13</sup> Consequently, Turkish lira depreciated significantly vis-à-vis peer emerging-market currencies (Chart 6-b).

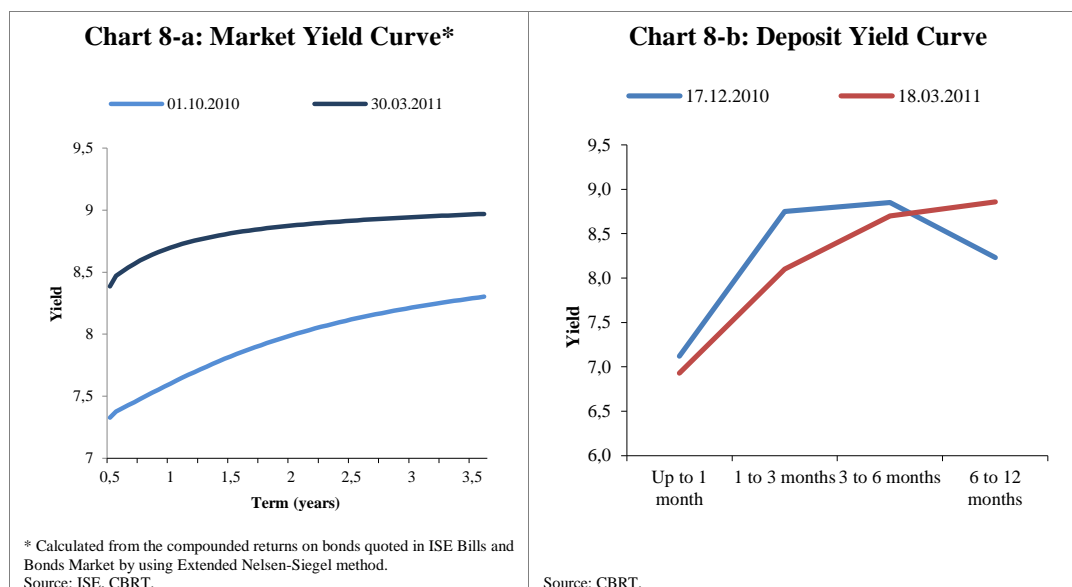


The new policy mix also aimed to increase the maturity of the liabilities of the banking system. The strategy of inducing more volatility for short-term interest rates may have also contributed to the maturity extension in money market operations. As depicted in Chart 7, after the adoption of the new monetary policy strategy, the share of Turkish lira swaps at longer maturities increased, while the share of short-term swaps declined significantly. This development has contributed to a reduction in roll-over and interest rate risk of Turkish banks. Moreover, differentiation of reserve requirements across maturities has led to a gradual lengthening in the average maturity of deposits.



<sup>13</sup> Net swap transactions can be tracked through off-balance sheet positions of the banking system.

The yield curve of bond rates are a direct indicator of how the CBRT's new measures affected monetary conditions. Following the adoption of the new policy mix, the rates on government domestic debt securities increased by about 50 to 100 basis points. This shows that the net effect of these measures have been on the tightening side. In addition, there has been a significant upward shift in long-term deposit rates, reflecting the impact of the differentiation of required reserve ratios across maturities, which encourages maturity extension in the banking system.



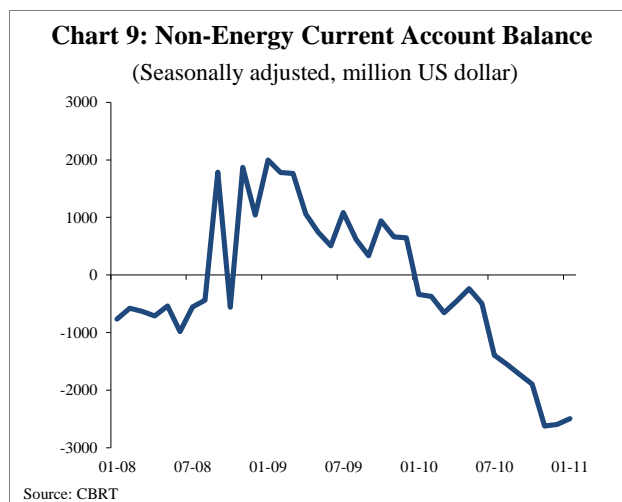
## VI. The Impact of the New Policy Mix on the Current Account Balance

As mentioned in the preceding sections, it is too early to assess the effects of the recently implemented monetary policies on macroeconomic variables, as it takes some time to see the transmission of policy actions to variables such as economic activity, inflation or external balances. However, the transmission to financial markets is much faster. Therefore, given the short time span between the implementation of new policy mix and the writing of this paper, we primarily focused on financial indicators in this study. Yet, in order to reveal a broader picture, it is important to assess whether the policy will achieve its objective of rebalancing the economy and containing macro financial risks, which boils down to a reduction in the current account deficit.

The current account series shown in Chart 1 above represent 12-month cumulative figures and are not adjusted for the rapid increase in oil prices, and, therefore, is not useful in gauging the underlying trend in external balances. In order to assess recent trends, we use seasonally adjusted monthly current account data, which indeed shows a slight



improvement in the non-energy current account balance (Chart 9). Admittedly, it is too early at this point to conclude whether this improvement will be long lasting, although the initial evidence is promising.



## VII. Conclusion and Final Remarks

Existing global imbalances require central banks' policies to be more creative. During the post-crisis recovery, the Turkish economy experienced the most dramatic divergence between the external and domestic demand in its recent history. Short-term capital inflows, the current account imbalance, and the rapid credit growth necessitated the use of alternative policy instruments to support financial stability. To contain macro financial risks, the CBRT designed a new policy strategy by utilizing several complementary instruments. Initial results so far seem promising, suggesting that a lower policy rate, a wider interest rate corridor, combined with higher required reserve ratios, may serve as an effective policy mix in dealing with rapidly increasing macro imbalances driven by short term capital inflows in countries running large current account deficits.

Nevertheless, it should be noted that the policy described in this paper features country and time specific aspects, and therefore, may not be appropriate for all emerging economies at all circumstances. The exact content of the policy mix and the set of policy tools would depend on several factors such as the structure and institutional setup of the financial system, the nature of the capital flows, and the state of the domestic and external business cycles.

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#### Türkiye İçin Yeni Reel Efektif Döviz Kuru Endeksleri

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