Capital flows, monetary policy, and macroprudential policy: reflections from the Turkish experience

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* The views expressed are those of the presenter and not necessarily reflect the official view of the Central Bank of Turkey
Outline

1. Turkey and South Africa: Fraternal twins?
2. Global financial flows and the policy dilemma
3. Turkish experience in dealing with trade-offs
4. The outcome and reflections
## Comparing South African and Turkish Economy

### Differences

<table>
<thead>
<tr>
<th>South Africa</th>
<th>Turkey</th>
</tr>
</thead>
<tbody>
<tr>
<td>➢ Commodity exporter</td>
<td>➢ Commodity importer</td>
</tr>
<tr>
<td>➢ NIIP low negative</td>
<td>➢ NIIP high negative</td>
</tr>
<tr>
<td>➢ Sizeable budget deficit</td>
<td>➢ Low budget deficit</td>
</tr>
<tr>
<td>➢ Low currency mismatch</td>
<td>➢ Significant currency mismatch in NFC balance sheets</td>
</tr>
</tbody>
</table>

### Similarities

- ➢ Inflation targeting, low saving rate, current account deficit
GDP Growth Rates
(percent, YoY)

Source: Bloomberg, CBRT
Last Observation: 2016 Q2

* GDP weighted arithmetic mean of annual GDP growth rates of China, Brazil, India, Mexico, Russia, Poland, Indonesia, Argentina, Thailand, Malaysia, Colombia, Hungary, Romania, Philippines, Chile, Peru.
GDP Growth Rates (percent, YoY)

* GDP weighted arithmetic mean of annual GDP growth rates of China, Brazil, India, Mexico, Russia, Poland, Indonesia, Argentina, Thailand, Malaysia, Colombia, Hungary, Romania, Philippines, Chile, Peru.

Source: Bloomberg, CBRT
Last Observation: 2016 Q2
Nominal Exchange Rate Volatility
(2006-2016, Coefficient of Variation)
Pass-through From Exchange Rate to Inflation
(at the end of 12-month period, Percent)

Source: Various papers
Exchange Rates

Lira and Rand vis-a-vis US Dollar

Moving Correlation Between Lira and Rand (104 weeks)*

* Moving coefficients of correlation between weekly changes in USD/TRY and USD/ZAR exchange rates.

Source: Bloomberg

Last Observation: October 21, 2016
CDS Premia and Bond Yields

5-Year CDS Premia
(basis points)

10-Year Government Bond Yields
(percentage points)

Source: Bloomberg
Last Observation: October 21, 2016

* Arithmetic mean of the 5-year CDS premia of Brazil, Chile, Colombia, Hungary, Indonesia, Mexico, Malaysia, Peru, Philippines, Poland, Romania, Russia and Thailand.
Dealing with capital flow and exchange rate volatility
The Dilemma

- Capital flows to emerging economies have been extremely volatile in recent years
  - Fragile recovery during the post-crisis period
  - Unconventional monetary policy in advanced economies
- Exchange rates are driven by global risk perceptions and thus do not necessarily reflect domestic fundamentals.
  - Exchange rate as a shock amplifier?
- Such an environment poses complicated trade-offs and significant challenges for small open emerging economies.
Interaction between exchange rate, credit, and capital inflows: Amplifying channels

- Global Liquidity ↑
- Capital Inflows ↑
- Improved risk perceptions
- Currency Appreciation
- Rapid Credit Growth
- Balance sheet and collateral effects, further credit growth
US Dollar and the Commodity Prices

Dollar Index and Commodity Prices

(annual percentage change)

Source: Bloomberg
Last Observation: October 21, 2016

** Rolling coefficients of correlation between monthly changes in Dollar Index and Goldman Sachs Commodity Price Index.
Balance sheet effect of exchange rates in Turkey: Sensitivity Analysis

The impact of a 10% depreciation on the profitability of non-financial corporates (percentage of profit excluding financial expenses)
Implications for the policy design

- Significant policy trade-offs between price stability and financial stability

- Expanding the toolkit by devising multiple instruments may improve the outcome.
The Turkish Experience of dealing with policy trade-offs
The need for a macro approach have intensified after the QE, with rapid credit growth and marked currency appreciation.

**Total Loan Growth Rates**
(13 Weeks Moving Average, Annualized, FX Adjusted, Percent)

**Real Exchange Rate (2003=100)**

Source: CBRT
Sharp widening in the current account deficit, financed with short-term inflows called for an immediate policy action.

Current Account Balance
(Seasonally Adjusted, Quarterly Average, Billion USD)

Main Sources of External Financing*
(12-months Cumulative, Billion USD)

*Short-term capital movements are sum of banking and real sectors’ short term net credit and deposits in banks. Long-term capital movements are sum of banking and real sectors’ long term net credit and bonds issued by banks and the Treasury.
Source: CBRT.
Credit booms, exchange rate misalignments, and financial stability

- Credit booms and an overvalued exchange rate are the most robust and significant predictors of financial crises.

- A rise in the household debt to GDP ratio predicts lower output growth over the medium-run.
  - Mian, Sufi and Verner (2015)
Historically, sharp capital flow reversals (sudden stops) in Turkey are associated with large output losses.

<table>
<thead>
<tr>
<th>Crisis Year</th>
<th>Cumulative Output Loss</th>
</tr>
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<tbody>
<tr>
<td>1994</td>
<td>14.3%</td>
</tr>
<tr>
<td>2001</td>
<td>12.3%</td>
</tr>
<tr>
<td>2008-2009</td>
<td>15.1%</td>
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</tbody>
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* As of Q2, annualized. Source: CBRT.
## Monetary Policy Framework: Financial stability augmented IT

<table>
<thead>
<tr>
<th></th>
<th>Conventional Policy</th>
<th>Unconventional Policy</th>
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</thead>
<tbody>
<tr>
<td><strong>Objectives</strong></td>
<td>Price Stability</td>
<td>Price Stability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Financial Stability</td>
</tr>
<tr>
<td><strong>Policy Tool(s)</strong></td>
<td>Policy Rate</td>
<td>Policy Rate</td>
</tr>
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<td></td>
<td></td>
<td>Interest Rate Corridor</td>
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<td></td>
<td></td>
<td>Reserve Req. Policy</td>
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</tbody>
</table>
Using monetary policy tools as macroprudential instruments

- Rapid credit growth and widening current account deficit have required an urgent response by the end of 2010.
- No institution had the mandate and/or explicit objective at the time to deliver the necessary MaP response.
- The CBRT stepped in by
  - Incorporating financial stability into the IT framework
  - Redesigning the toolkit to respond to macro financial risks
- Reserve requirements and interest rates were used jointly for both monetary policy and MaP purposes.
Initial response: a flexible interest rate policy joint with tighter Reserve Requirements

- Interest Rate Corridor
- Overnight Rate (%5-day MA)
- One-Week Repo Rate (%)
- Reserve Requirement ratio (RRR)
- Effective RRR
Yet, the new approach posed challenges for policy communication.

- Complex transmission mechanism of new tools
- Inherently vague nature of financial stability: difficulty of linking each tool to objectives (unlike IT)
- Even so, this episode has increased the awareness for the need to adopt a more explicit institutional MaP framework.
  - Paved the way for the foundation of a financial stability committee.
Second Phase of MaP Implementation:
Financial Stability Committee
Financial Stability Committee (FSC) was a significant step for the establishment of a formal institutional framework for MaP.

Organization Structure

- Founded in June 2011.
- Enhances information sharing, coordination, and cooperation.
- Main duties are to assess the systemic risks, identify necessary measures, and make relevant policy recommendations.
- No decision power or tools; the power rests with the authorities represented in the Committee.
- Each institution has its own mandate and responsibility.
Broad Objectives of Macroprudential Policy

- Dampen the financial amplification channels
  - Interaction between capital flows, credit, and exchange rate

- Lower the probability of a sudden stop
  - Contain credit growth and household overborrowing
  - Improve the quality of financing
New tools were developed to dampen the amplification mechanisms.

MAIN TOOLS:

- **Wide Interest Rate Corridor**
  - Flexible interest rate policy against sudden shifts in capital flows

- **Reserve Option Mechanism**
  - Build reserves with low sterilization costs during inflows.
  - Reduce sensitivity of credit and exchange rates to capital inflows.
The policy toolkit has been expanded to weaken the amplification mechanisms triggered by global liquidity cycles.

- Global Liquidity
- Capital Inflows
- Flexible Interest Rate Corridor
- Reserve Option Mechanism
- Currency Appreciation
- Rapid Credit Growth
- Improved risk perceptions
- Balance sheet and collateral effects, further credit growth
MaP measures were taken to contain credit growth and change the composition of credit to reduce the share of household borrowing.

MAIN TOOLS:

Financial Institutions Based
- Risk weights
- Loan-loss provisions

Borrower Based
- LTV ceilings
- Maturity limits
- Limits on # of installments
Household borrowing displays a strong relationship with the current account deficit.

**Consumer Loans and the Current Account**
(Change YoY, % of GDP for Consumer Loans, % of GDP for Current Account Deficit)

Source: TURKSTAT, CBRT.
The macroprudential measures to smooth credit cycle and to contain household debt were implemented in two major steps.

First Round (2011)
- Higher risk weights and provisions for consumer loans.
- Limits to credit card payments
- LTV cap for housing loans

Second Round (2013-2014)
- Caps, limits, and higher risk weights on credit cards
- Maturity restrictions (36 months) for uncollateralized consumer loans
- LTV cap for vehicle loans
Macroprudential policies have succeeded in containing loan growth.

Loan Growth Rates
(Annual percentage change)

Source: CBRT.

Last Observation: October 14, 2016.
Inclusive of loans extended by all types of banks (deposit banks, Participation banks, and development/investment banks). FX adjusted.
The share of consumer loans in total loans have declined considerably since 2011.
The MaPs have been instrumental in reversing the upward trend in the household indebtedness ratio in recent years.
Real exchange movements since 2011 have boosted the competitiveness of the economy.

Real Effective Exchange Rate
(CPI Based. 2003=100)

Source: CBRT.

Last Data: July 2016.
Reserve requirement ratios were used to increase the quality of financing (liabilities of the banking system)

- **MAIN TOOLS:** reserve requirement policy
- **Strategy:** adjust RRR and remuneration rates to favor
  - Core liabilities over non-core liabilities
  - Long-term over short-term
  - TL over FX
Reserve Requirements were used in several dimensions to improve the quality of external finance and bank liabilities.
RR measures have been effective in extending the maturity of the noncore liabilities...

Maturity Breakdown of Non-Core FX Liabilities
(Percentage Share)

RR Measures to encourage maturity extension

02/14 04/14 05/14 07/14 08/14 09/14 11/14 12/14 01/15 02/15 03/15 04/15 06/15 07/15 10/15 11/15 01/16 02/16 03/16 05/16 06/16 07/16 09/16
0 10 20 30 40 50 60 70

Up to 1-Year

Longer than 3-Years

1 to 3-Years

Source: CBRT.

Last Observation: September 9, 2016.
... as well as stabilizing credit to deposit ratios.

Credit/Deposit Ratio
(Percent)

Source: BRSA

Last Observation: October 5, 2016.
Macro Outcomes of MaP Implementations
The interaction between capital flows, exchange rate and bank loans have been dampened considerably since the implementation of MaPs.

Capital flows, exchange rate, and credit cycles
(HP filtered, standardized)

Loans (t)  REER (t+3)  Inflows (t+3)

The new policy mix

Source: CBRT.
Current account balance has shown a persistent and sizeable improvement in recent years, despite the volatility in capital flows.

**Current Account Deficit and Net Capital Inflows**

(12 Month Cumulative, Billion USD)

Source: CBRT.
The share of long-term and FDI inflows have increased since 2011.

**Net Capital Inflows**
(12-Months Cumulative, Billion USD)

*Long term inflows are sum of banking and real sectors’ long term net credit and bonds issued by banks and the Treasury.
**Short term capital movements are sum of banking and real sectors’ short term net credit and deposits in banks.

Source: CBRT.

Last Observation: August 2016.
GDP growth stayed relatively stable since 2011, despite the heightened volatility in capital flows.

Source: CBRT.
The contribution of global factors to Turkey’s monetary and financial conditions have declined after the implementation of MaP policies.

% Share of Global Factors* in Explaining Turkey’s Financial Conditions

*Global Factors are VIX index, global growth, US treasury 10-year yield and 10-2 year spread.

Source: Kara, Özlü and Ünalmiş (2015)
Inflation expectations improved during the initial stages; yet deteriorated since the taper tantrum due to persistent depreciation in TL.

Source: CBRT.
Estimated coefficients from a Time Varying Parameter Phillips curve

FX Pass-through coefficient

Import Price Pass-through

Output Gap Coefficient

Unit Labor Cost Coefficient
Contributions to inflation during the last 10 years
Final Remarks

- Macroprudential policies in Turkey have engineered a soft landing and alleviated the adverse impact of capital flows.

- The Turkish experience suggests that targeted macroprudential policies can improve the policy tradeoffs.
  - Building buffers in good times, using them in bad times

- Yet, neither monetary policy nor macroprudential policy can substitute for deeper structural reforms.
Main Lessons

- Turkey has tried various forms of inflation targeting in the past 10 years.
- Multiple tools - multiple instruments framework eases some of the tradeoffs posed by the global financial cycle but may introduce additional challenges especially under low credibility of inflation targets.
  - Complexity and communication challenges
Simplicity is the ultimate sophistication.

*Leonardo Da Vinci*
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