

# Forecasting and Policy Analysis System of the National Bank of Georgia

National Bank of Georgia

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Workshop on Monetary Policy Modeling: Forecasting and Policy Analysis

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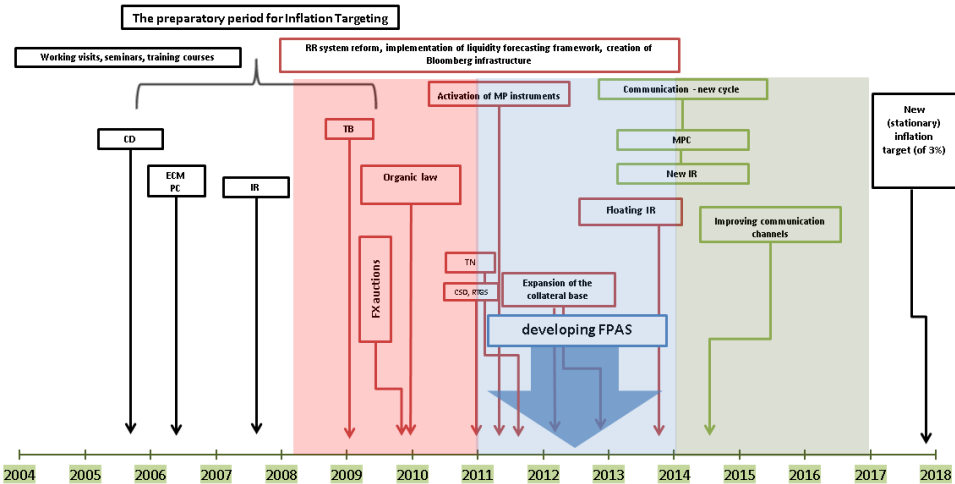
# Overview

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# Preconditions for Successful IT

- ① Legal and institutional framework:
  - mandate to achieve price stability ✓
  - instrument independence ✓?
- ② Capacity to influence real economy through monetary policy instrument ?
- ③ Financial system health ✓
- ④ Sound methodology for macroeconomic forecasting and policy analysis -
- ⑤ Effective organizational arrangements within central bank: -
  - monetary policy committee
  - clarification and redefinition of functional responsibilities
  - efficient coordination of work between departments
- ⑥ Transparency mechanisms and communication strategy to build credibility and accountability -

# Efficiency of the Framework - Evolving Over Time

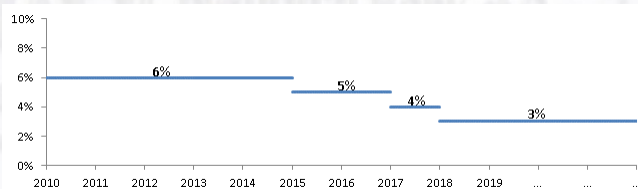


## Legal Framework

Georgia has moved to Inflation Targeting since 2009. The main objective of the NBG is to maintain price stability:

- 1 Constitution of Georgia
- 2 Organic Law of Georgia

NBG gradually reduced inflation target towards its long-term value of 3 percent. From 2018 inflation target is set at 3%.



## Developing Operational Framework (2008-2010)

*Money Market* || *Quantity-based* ⇒ *Price-based* ||

- refinancing loans in **unlimited quantity** for a given monetary policy rate
- **standing facilities** to create a corridor for short-term interest rates
- reserve requirements mainly for long-term policies.

*FX Market* || *Price-based* ⇒ *Quantity-based* ||

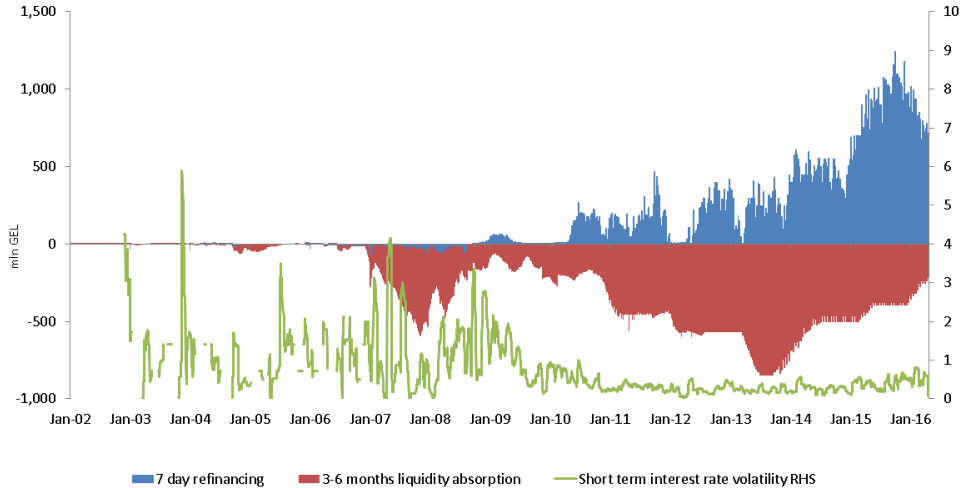
- FX auctions with quantity-based interventions
- level of exchange rate determined by the market

# Monetary Policy Instruments

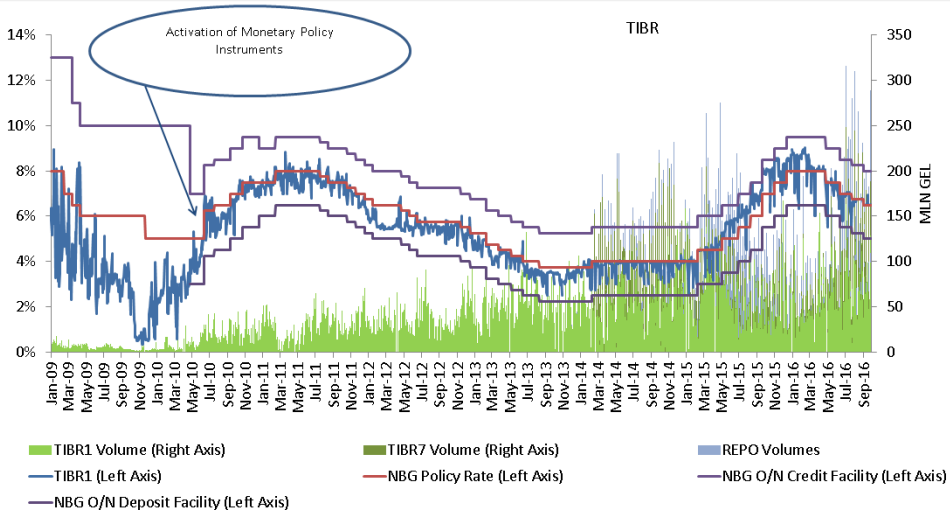
- ① Monetary policy rate (refinancing loans)
  - The main instrument of monetary policy is one-week refinancing rate
  - Used to manage short-term liquidity, so that market rates hover around the policy rate
- ② Standing facilities: overnight loans and deposits
  - Creating +/- 1.5 pp. interest rate corridor; volatility in interest rates decreased
  - In 2010 NBG introduced one week guaranteed refinancing loans: refinancing risk decreased for commercial banks, confidence increased in refinancing loans and commercial banks started using this instrument more actively
- ③ Reserve requirements
  - Differentiated depending on currencies and maturities, so that domestic currency liabilities and long-term borrowings are encouraged



# Monetary Policy Instruments



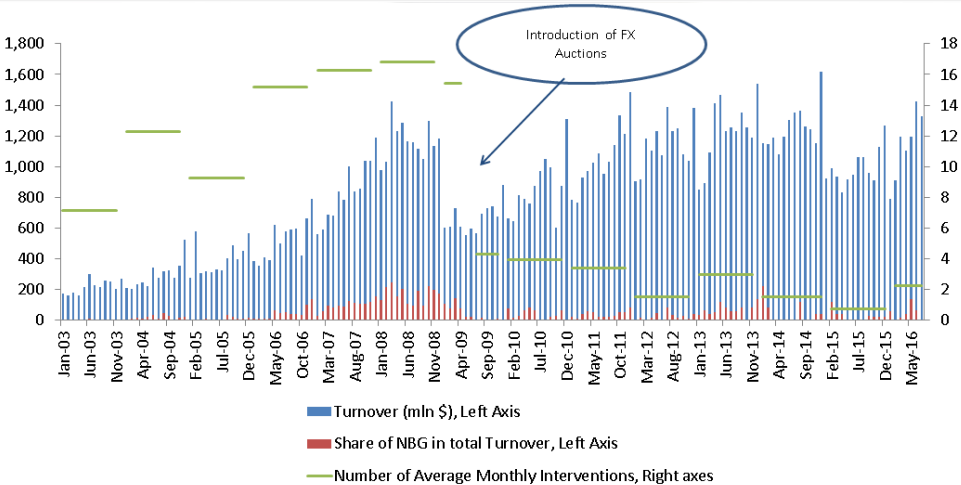
# Monetary Policy Instruments



# Exchange Rate Regime

- 1 FX market reform was implemented in 2009 - introduction of FX auctions
  - foreign exchange policy of the NBG implies minimum intervention on the foreign exchange market
- 2 The main goals of FX auctions are:
  - accumulation of international reserves to optimal level
  - smoothing out excessive short-term volatility in the exchange rate due to temporary surges in inflows or outflows of foreign capital, until financial market is sufficiently developed
  - partially balancing the private and government FX financing gap

# Exchange Rate Regime



## Exchange Rate Regime

Given open capital account, *independent monetary policy requires floating exchange rate regime*. Flexibility of exchange rate has a number of advantages:

- Serves as a buffer and mitigates the impact of negative shocks on the economy  
⇒ **stable inflation and economic growth**
- Limits speculative pressures on exchange rate and international reserves  
⇒ **volatility in the short-run** ↑; **volatility in the long-run** ↓

## Exchange Rate Regime

- 1 Sound banking sector with **conservative supervision** is essential for overcoming *fear of floating* in a financially dollarized economy.
- 2 Using **macroprudential policy** to eliminate shock-amplifying role of financial sector, especially under dollarization.

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## Developing FPAS (2011-2013)

- 1 Technical assistance missions from IMF
  - human capacity development
  - training of the staff
- 2 NBG staff visit to IMF for training in 2011
- 3 Cooperation with the international consulting company OG Research to develop the model in 2012-2013 financed by EBRD
  - on-site visits
  - training of the staff
- 4 On going technical assistance from IMF aiming at improving the core model and streamlining the FPAS

▶ jump to FPAS structure

## Fostering Communication (2014-2016)

High credibility of the central bank ensures better management of inflation expectations

Gaining credibility needs:

- 1 Clear mandate
- 2 Independence
- 3 **Transparency and communication**

External shocks in 2014-2015 especially raised the need for improving communication with the public



## Fostering Communication

- 1 **Press-releases** right after MPC decisions (*8 times a year*)
- 2 **Press-conferences** after MPC decisions (*4 times this year; 8 times from next year*)
- 3 Publication of **Monetary Policy Report** (*4 times a year*)
- 4 Regular **meetings with analysts** (*4 times a year, after MPR publication*)
- 5 Close **communication with commercial banks**
- 6 Additional **lectures and presentations** on different topics
- 7 **Surveys** on inflation expectations, lending conditions and business activities
- 8 Improved **access to statistical data**

# Monetary Policy Report

- ① Forward-looking since 2013
  - publication of inflation and GDP forecasts
  - alternative forecast scenario
- ② Forward guidance since 2015
  - verbal guidance on future policy rate
  - publication of policy rate fanchart since 2016
- ③ Goind ahead
  - publication of exchange rate fanchart

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## Importance of Capacity Building

- NBG relies on economic analysis and macroeconomic modeling in conducting monetary policy. Macroeconomic models represent an effective tool for forecasting:
  - ① takes the endogeneity of monetary policy into account
  - ② models expectations explicitly
  - ③ structures thinking about how economy works
- Yet, a good macroeconomic model does not necessarily help a better policy choice, unless part of a broader analytical decision-making framework:
  - ① a model is a simplified version of reality and there are suite of models - **expert judgment indispensable**
  - ② feeding a model with the right assumptions on exogenous processes has a very big effect of the final outcome - **alternative scenarios and policy analyses.**
  - ③ a model does not tell the story, staff does - but **it's the stories that policies are based on**

# Importance of Capacity Building

- ① Hence, developing an FPAS is more about capacity-building than model-building
  - staff is behind a forecast, not a model
  - invest in staff - start with small team, use extensively external trainings, get bigger additionally with internal trainings
- ② Capacity building is not only about training staff, but all levels of the central bank
  - development of FPAS also means training users of its output
  - use of external experts in training policy-makers beneficial not only because of their knowledge, but also credibility
- ③ Models should be simple enough to be explainable in plain language
  - start small to manage easily and buy in policy-makers
  - add other features later after the model gains credibility

# Overview of the FPAS

Incorporates several analytical tools classified into three categories:

- ① Short term forecasting instruments
  - BVAR
  - ECM
  - Factor models
- ② Medium term forecasting tool (core model)
  - Semi structural model balancing the desired empirical properties with the New-Keynesian approach (DSGE-type)
- ③ Additional satellite models

Expert judgment involved in all three parts

[▶ back to FPAS introduction](#)

## Core of the FPAS

The core of the FPAS is the semi-structural macroeconomic model with four main blocks:

- 1 Aggregate demand or IS-type equation
- 2 Price setting or New Phillips curve
- 3 Uncovered interest rate parity equation
- 4 Monetary policy rule

External sector is exogenous to the core model and includes trading partners as well as global environment

- 1 IMF World Economic Outlook
- 2 Bloomberg forecasts for trading partners
- 3 Own judgment

## Key Parts Tailored to Georgian Realities

- 1 Modeling balance sheet effects of exchange rate changes
  - *working on demand side - modified IS curve*
  - *working on supply side - modified Phillips curve*
- 2 Nonlinear effects coming from endogenous credibility that weakens asymmetrically when overshooting the inflation target
- 3 Incorporating yield curve explicitly for analyzing liquidity and maturity issues
- 4 Making distinction between effective exchange rate (net export effect) and GEL/USD exchange rate (balance sheet effect)
- 5 Modeling steady states as unit roots



## Process of Forecasting

	<i>Time</i>
Data collection and technical preparation of the model	
Issue meeting and setting initial conditions	week 1
Forecast review and reconciliation	week 2
Drafting Monetary Policy report	week 3
Pre-MPC Meeting	week 3
MPC Meeting	week 3
Presentation of Monetary Policy Report to analysts	week 4
Publishing Monetary Policy Report	week 4

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## Key Takeaways

- 1 For starting transition to inflation targeting, there's no need to meet all the preconditions for successful IT. Minimum set of preconditions from the outset are willingness of reform and some independence
- 2 Lowering interest volatility and increasing the exchange rate flexibility contributes to long-term stability
  - Money market instruments:  $Q$ -based  $\Rightarrow$   $P$ -based
  - FX market interventions:  $P$ -based  $\Rightarrow$   $Q$ -based
- 3 Sound banking sector with conservative supervision is essential for overcoming fear of floating in a financially dollarized economy
- 4 Forecast is not a model output, but a product of staff
  - importance of capacity building
  - story should be behind every forecast

## Contact Details

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