

**CAREC Institute Research Workshop**  
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***Is There a Case for Inflation  
Targeting in the Kyrgyz Republic?***

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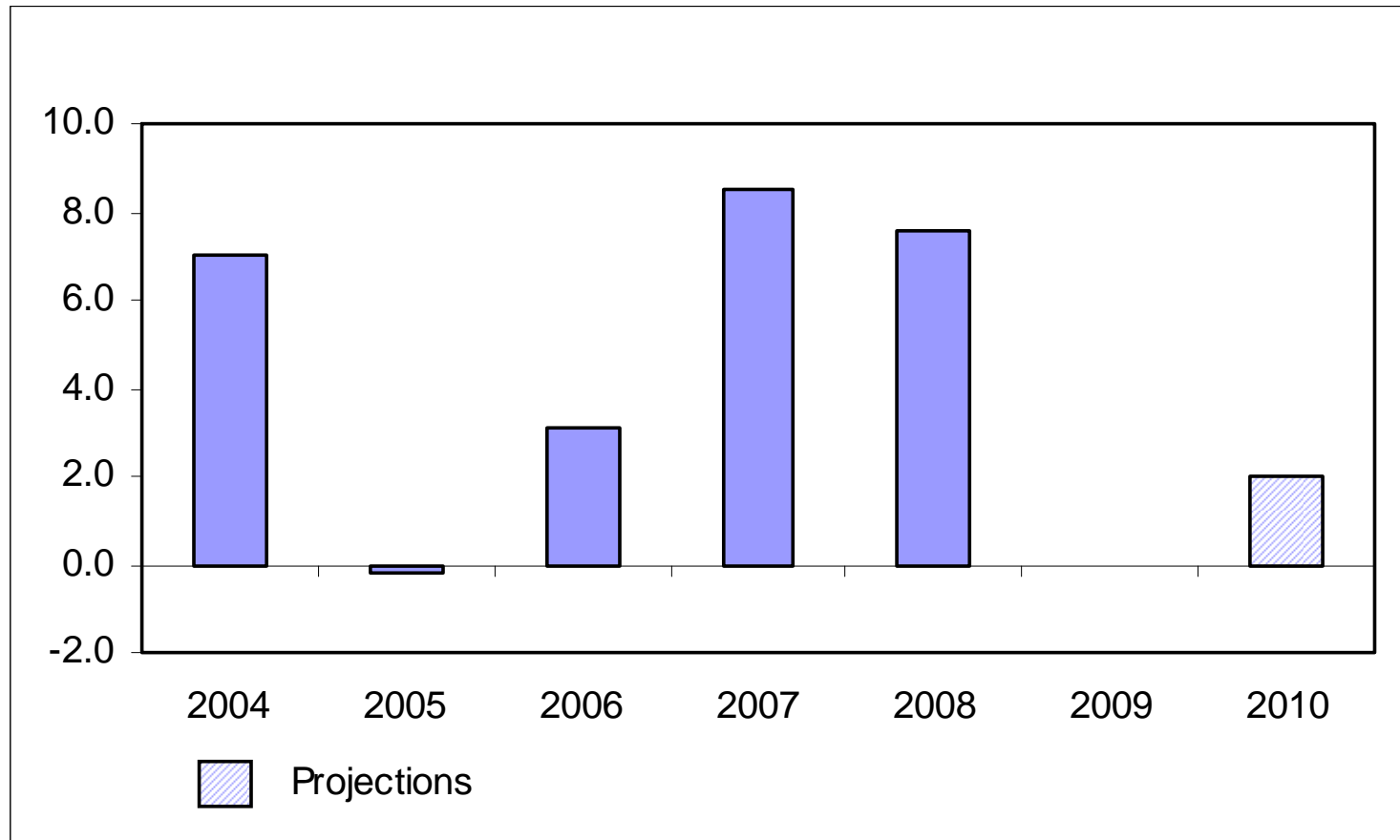
# **Outline of Presentation**

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1. Overview of Economic Performance/Motivation
2. Preliminary Assessment of Prospects and Key Challenges of Transition Towards Inflation Targeting (IT) Framework in KR
3. Overview of Monetary Policy, Main Monetary Instruments of the National Bank of Kyrgyz Republic (NBKR)
4. Model Description / Overview of NBKR's Monetary Policy

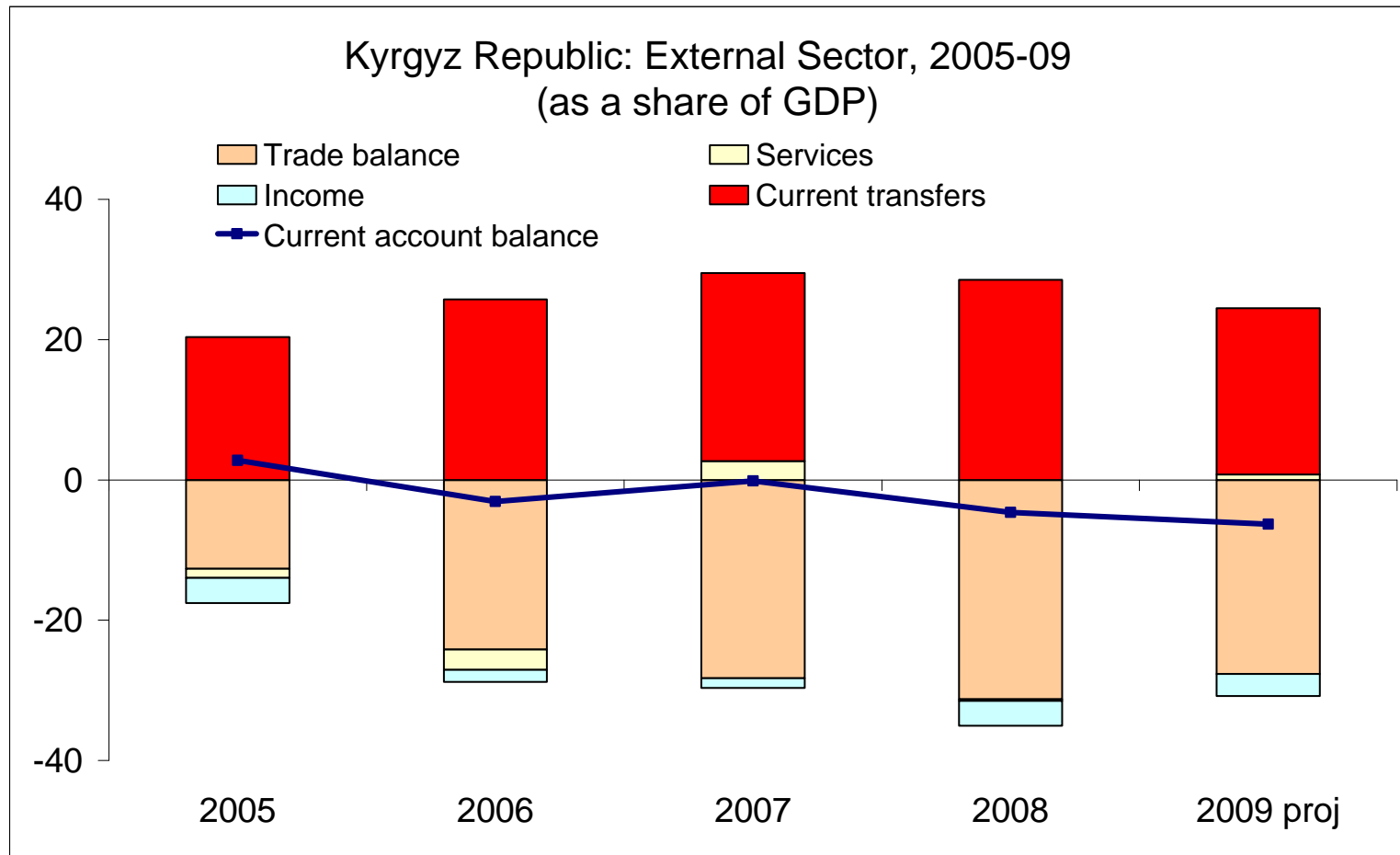
# 1. Overview of Recent Economic Performance/Motivation

Figure 1. Real GDP Growth



Source: National Statistical Committee and NBKR

## Figure 2. External Sector – heavy dependence on remittance and donors

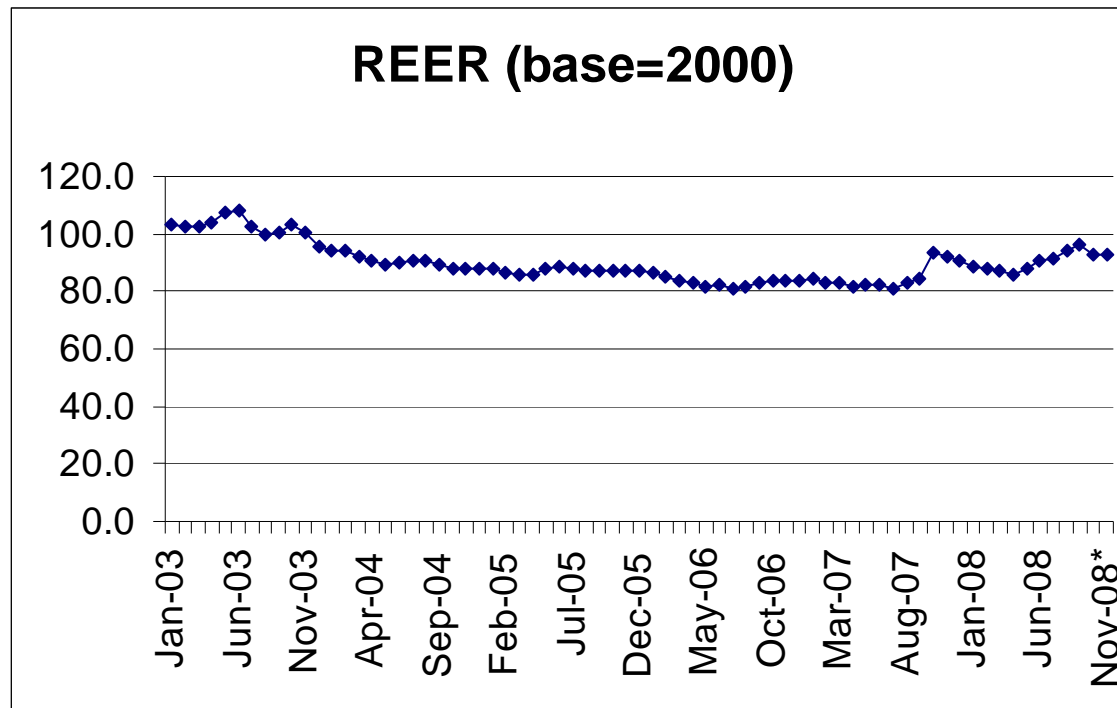


Source: NBKR and IMF

Both **external** and **internal** factors propped up years of strong FX inflows...

- Economic boom in Russia and Kazakhstan
  - Structural reforms, privatization
- ...leading to real appreciation

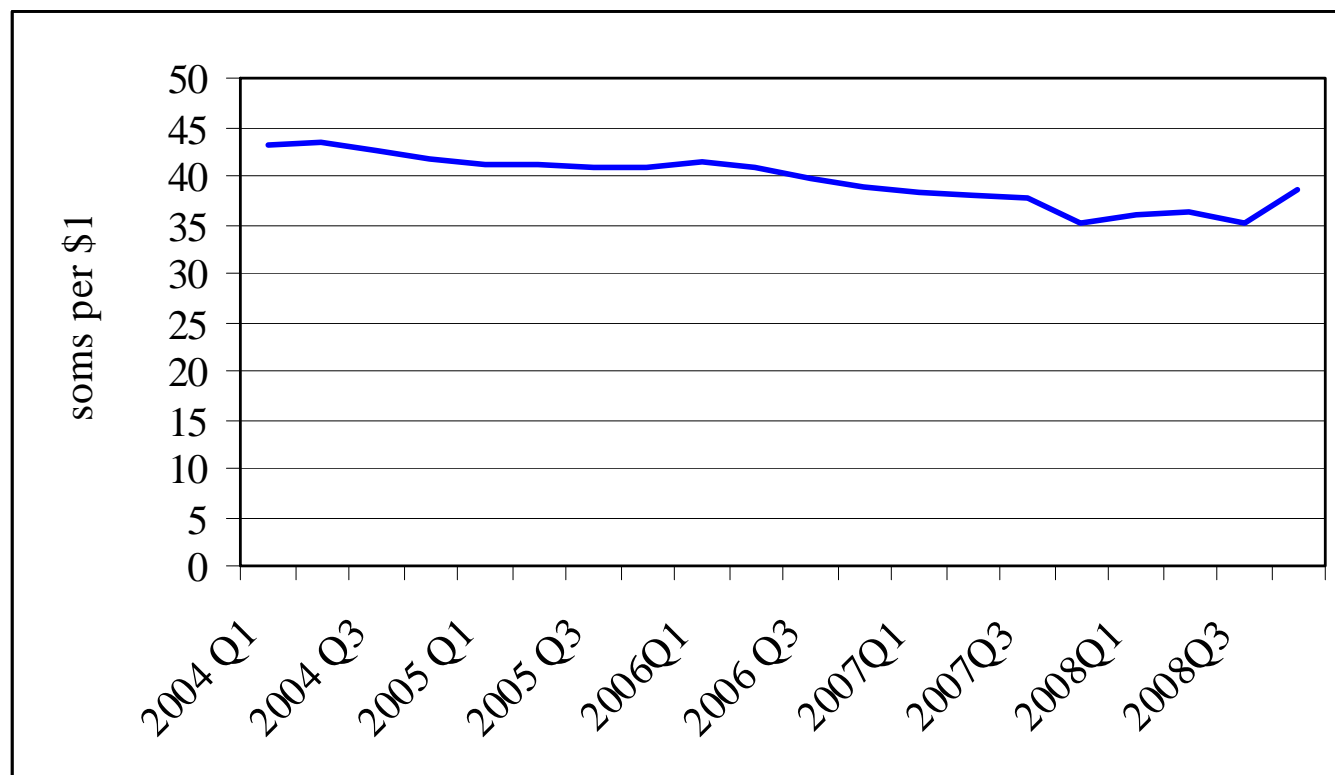
Figure 3. Real effective exchange rate in KR



and also leading to nominal exchange rate appreciation (until September 2008)

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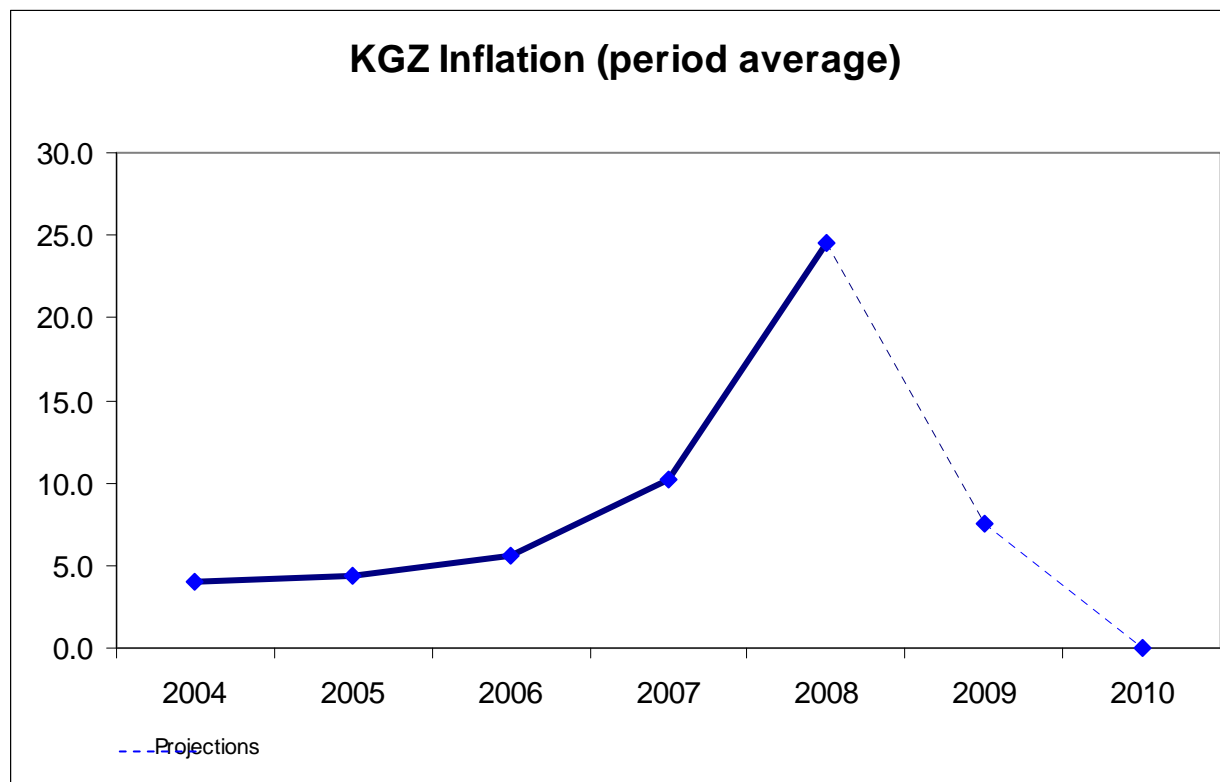
Figure 4. Nominal exchange rate in KR



...the NBKR has not consistently targeted the inflation rate

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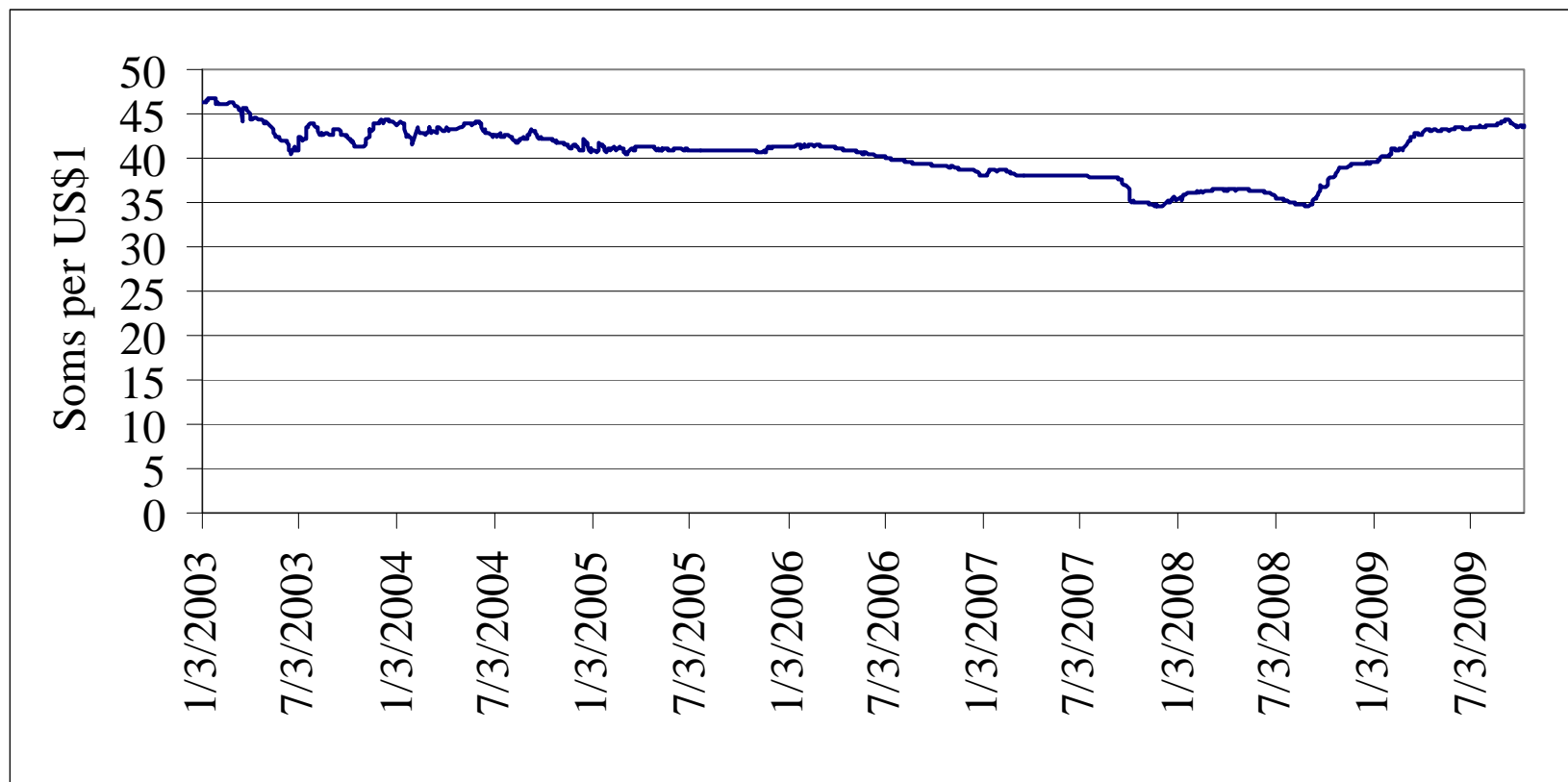
Figure 5. Inflation rate (CPI) in KR



...the NBKR has not consistently targeted the exchange rate either

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Figure 6. Nominal exchange rate in KR





# In view of the above, the following questions arise:

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- Should the NBKR choose inflation as a nominal anchor, e.g., adopt Inflation Targeting (IT) framework? If yes, are there all necessary macroeconomic and institutional preconditions in place?
- Or should it keep its current monetary regime given the economy's high dependence on remittances and high vulnerability to external shocks?

*To answer this question, we construct a Small Open Economy (SOE) model calibrated to Kyrgyz economy that incorporates its peculiarities.*

## 2. Preliminary Assessment of Macroeconomic and Institutional Preconditions for the Adoption of IT in Kyrgyzstan

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### *Arguments in favor of IT*

- IT helps build credibility and anchor inflation expectations
- IT provides more flexibility
- IT involves a lower economic cost in the face of monetary policy failures. For ex., no massive foreign exchange reserve loss, high inflation, banking/financial crisis, etc.

## 2. Preliminary Assessment of Macroeconomic and Institutional Preconditions for the Adoption of IT in Kyrgyzstan

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### *Arguments against IT*

- ❑ IT involves too little discretion and thus unnecessarily restrains growth
- ❑ IT implies high exchange rate volatility
- ❑ IT cannot work in economies that do not meet a stringent set of preconditions, institutional (technical capability of CB, absence of fiscal dominance) and macroeconomic/financial (stability in the external sector, strong banking sector, developed financial system)

# Key Challenges and Prospects for Transition towards IT

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**1. Fiscal Dominance** –mostly satisfied; NBKR is independent, though the government is expected to run excessive budget deficits in coming years...

Table 1. Kyrgyz Republic. Budget Deficit

Indicator	2005	2006	2007	2008	2009	2010
(%)						
Fiscal balance to GDP	-3.6	-2.7	-0.8	-0.4	8.8*	8.2

\*- without Russian grant of US\$150 million

**2. Lack of technical capacity of NBKR** to implement IT

# Key Challenges and Prospects for Transition towards IT

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## ***3. Financial system is underdeveloped.***

Banks dominate the financial system with around 80% of financial assets.

## ***4. Financial system is stable.***

- 2007 IMF's and WB's FSAP: banking system is resilient to moderate shocks.
- 2009 stress tests: the banking system could withstand sharp fluctuations of the nominal exchange rate, within  $\pm 30\%$  band, or  $\pm 15\%$  interest rate variations.
- Capital adequacy, liquidity are relatively high, and profitability is good, though the level of NPL is increasing.

# Table 2. Kyrgyz Republic. Financial Soundness Indicators

	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>1<sup>st</sup> Quarter 2009</b>
<b>Capital adequacy ratio</b>	28.2	31.3	32.6	27.7
<b>NPL ratio (gross)</b>	6.2	3.5	5.3	7.0
<b>Provision coverage ratio</b>	53.2	60.3	55.9	54.2
<b>ROA before tax</b>	3.2	4.4	3.8	2.5
<b>ROE</b>	21.4	27.2	20.7	13.0
<b>Liquid assets/total assets</b>	77.9	71.3	82.0	87.7
<b>Loan and advances/total assets</b>	40.0	49.3	46.6	41.2
<b>Loans/deposits</b>	75.4	107.6	110.2	113.2
<b>Share of foreign currency loans in total loans</b>	69.6	62.5	64.7	65.5
<b>Share of foreign currency deposits in total deposits</b>	69.5	58.1	63.6	69.6

# Key Challenges and Prospects for Transition towards IT

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## ***5. External debt increases – 'fear of floating'; dollarization picks up***

Table 3. Kyrgyz Republic. Total External Debt

Indicator (%)	2005	2006	2007	2008	2009	2010
External Debt to GDP	81	77.6	63.4	46.2	52	55



## To sum up:

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**IT is not feasible in KR in the short term in view of**

- ❑ Vulnerability to economic shocks
- ❑ Poor coordination b/w fiscal and monetary policies
- ❑ Institutional weaknesses
- ❑ Limited technical capacity of the NBKR



# OVERVIEW OF NBKR's MONETARY POLICY

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## Brief Overview of Monetary Policy

- ❑ NBKR's main objectives are to (i) maintain price stability, and (ii) assist in the promotion of long term growth
- ❑ Main monetary policy instruments:
- ❑ NBKR bank note – *main instrument* to withdraw liquidity
- ❑ Foreign exchange market interventions
- ❑ Repo/reverse Repo with Government T-bills
- ❑ Other facilities are little used: mandatory reserve requirements; direct purchases and sales of T-bills on secondary markets; deposit facility; overnight credit facility; LOLR; SWAP operations in foreign exchange; discount rate (the key policy rate).



# OVERVIEW OF NBKR's MONETARY POLICY

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## *Monetary Policy Transmission Mechanism*

- Recent research by NBKR: little correlation b/w inflation and monetary aggregates, foreign exchange rates, and interest rates
- Interest rate transmission is very weak; no relationship b/w the policy rate and the banks lending rate
- Inter-bank rate has been fluctuating below the policy rate

# MODEL DESCRIPTION

## Main Building Blocks of the Model

- A two-sector SOE model, with tradable and nontradable goods and sticky prices

$$\max E_0 \sum_{t=0}^{\infty} \beta^t \left\{ \frac{(C_t)^{1-\rho}}{1-\rho} - \frac{H_t^{1+\psi}}{1+\psi} \right\}$$

$$P_t C_t (1 + \tau_t^c) + e_t B_{F,t} + B_{H,t} = e_t (1 + i_{F,t-1}) B_{F,t-1} + (1 + i_{t-1}) B_{H,t-1} + \\ + (1 - \tau_t^l) (W_{H,t} H_{H,t} + W_{N,t} H_{N,t}) + \Pi_t + e_t TR_t$$

- Production process consists of two stages: monopolistic producers of tradable and nontradable intermediate goods (Cobb-Douglas technology subject to productivity shocks). Final good market – perfect competition

# MODEL DESCRIPTION

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- Money is introduced through the CIA on the wage bill
- *Monetary Authority*: Taylor rule

$$\ln((1 + i_t) / (1 + \bar{i})) = \Omega_{\pi} \ln(\pi_t / \bar{\pi}) + \Omega_e \ln(e_t / \bar{e})$$

or alternatively

$$\ln(M_t) = \ln(M_{t-1}) + \lambda_e (\ln(e_t) - \ln(\bar{e}))$$

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# MODEL DESCRIPTION

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- Fiscal Authority: budget deficit, debt or composite rule

$$\tau_t^j = \tau^j + \Omega_1 (G_t - \tau_t + i_{t-1} B_{H,t-1} / P_t - \kappa_1 gdp_t) / gdp_t$$

$$\tau_t^j = \tau^j + \Omega_2 (B_{H,t-1} / P_t + M_{t-1} / P_t - \kappa_2 gdp_t) / gdp_t$$

$$\begin{aligned} \tau_t^j = \tau^j + \Omega_1 (G_t - \tau_t + i_{t-1} B_{H,t-1} / P_t - \kappa_1 gdp_t) / gdp_t + \\ + \Omega_2 (B_{H,t-1} / P_t + M_{t-1} / P_t - \kappa_2 gdp_t) / gdp_t \end{aligned}$$



# MODEL DESCRIPTION

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- In the foreign block, assume that output, inflation and interest rate follow exogenous AR(1) processes.
- Domestic government consumption, and migrant remittances are also exogenous AR(1) processes.
- The model is solved using Shmitt-Grohe and Uribe (2007), welfare assessment across alternative monetary/fiscal rules

***THANK YOU VERY MUCH  
FOR YOUR ATTENTION!***

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