



**Inflation Targeting:
Performance and Challenges**

**Early Stages of Inflation Targeting:
The Romanian Experience**

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Why Inflation Targeting?

- Weakening of the relationship between monetary aggregates and inflation
- The need to calibrate monetary policy in terms of inflation rate instead of an intermediate target
- Risks associated with exchange rate used as a nominal anchor amid capital account liberalization



Prerequisites for Shifting to Inflation Targeting in Romania

- The annual inflation rate is in the single-digit range
- The NBR has full operational independence
- The financial sector is stable and sound, although financial intermediation should increase
- Fiscal dominance is no longer a threat
- The central bank has improved its inflation-forecasting capacity
- Disinflation progress over the past few years has led to the strengthening of NBR credibility



Context and Initial Specifications

- Inflation targeting specifications:
 - target specified in terms of CPI
 - mid-point with band (± 1 percentage point around the (dis)inflation path)
 - annual targets with multi-period perspective (initially two years)
 - flexible interpretation of inflation targeting (especially coexistence with managed float regime)
 - existence of few *ex ante* defined “exceptions” conditional to attaining the target
 - joint announcement of target with government

Inflation

- **Inflation target based on CPI**

- transparent, available to the general public
- calculated by an institution (NIS) other than the central bank

- **Core inflation:**

- analytical purpose
- definitions:
 - ✓ $\text{CORE1} = \text{CPI} - \text{administered prices}$
 - ✓ $\text{CORE2} = \text{CORE1} - \text{highly volatile prices (vegetables, fruit, eggs, fuels)}$
- NBR calculations

Organizational Issues

- Task force set up to implement the IT framework, led by coordinating DG
 - Monetary Policy Department
 - Research and Publications Department
 - Macroeconomic Modeling and Forecasting Department

- Development of a detailed quarterly macroeconomic forecasting framework
 - centralized database
 - data monitoring & reporting
 - monthly expectations survey based on opinions of financial analysts of the main commercial banks
 - near-term forecasting of key variables
 - medium-term forecasting model, consistent with achieving multi-period inflation targets



The Policy-Making Process

Role of the NBR Board

- Exceptional initial involvement in model specification, starting conditions (in order to foster ownership/understanding: “successful dialogue with the model”)
- Final decision-making body
- Focuses on how to best employ forecasts in policy making
- In practical terms:
 - identifies alternative scenarios to consider or special issues to be examined from the viewpoint of strategy (“big decisions”); these are then run through model again for consistency
 - judges how the path for the policy interest rate should be adjusted to account for uncertainties and risks

(continued)

The Policy-Making Process

Role of the Monetary Policy Committee (MPC)

- Institutionalized analytical forum at staff/executive management level
- Critical focus on ensuring that all relevant information is brought to bear on the forecasts
- In practical terms:
 - responsible for reviewing assumptions on initial conditions for the forecasts, including the outlook for exogenous variables
 - reviewing the projections and formulating policy recommendations for the Board, including analyses of their technical implications



Forecasting

- Based on formalized models and expert judgment
- Two types of modeling approaches:
 - estimation approach at the short-run horizon
 - calibration approach at the medium-term horizon
- Final forecast integrates information from short- and medium-term models and expert judgment

Near-Term Inflation Forecasting

- Eight-quarter horizon at present
- A set of methods (one model approach is risky)
- Two methods:
 - expert judgement forecast for CPI components
 - ARMAX model for the main CPI inflation components (yoy data, monthly frequency)
 - ✓ food
 - ✓ non-food excluding regulated and fuel prices
 - ✓ services excluding regulated prices

Exogenous variables: EUR/RON and EUR/USD exchange rates, net wages, regulated prices, fuel prices

- The forecast presented to the MPC = weighted average of the results provided by the two methods

Near-Term GDP Forecasting

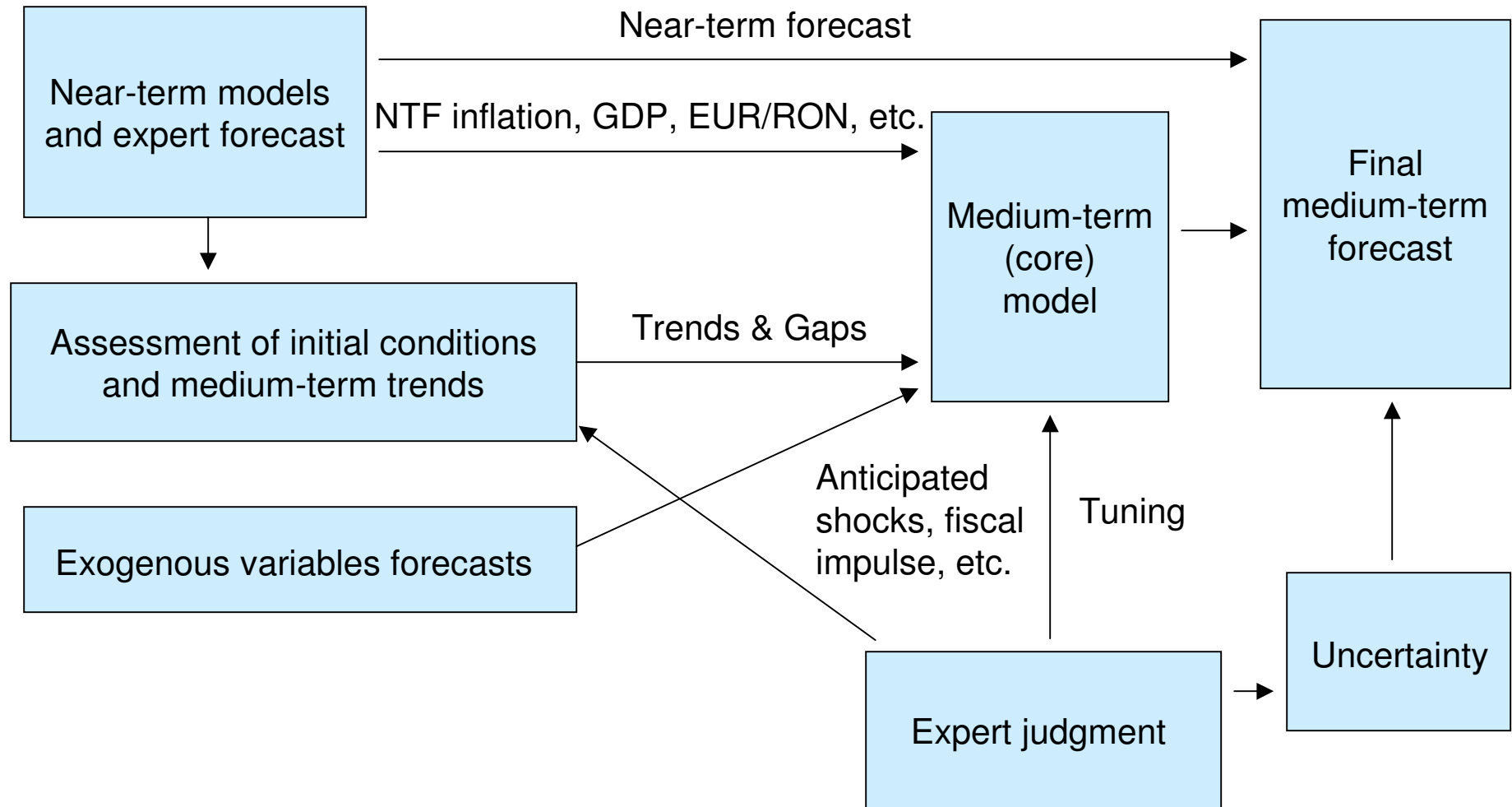
- Small semi-structural model (qoq)
- Behavioural equations for household consumption, gross fixed capital formation, exports, imports and core inflation
- Exogenous variables:
 - EUR/RON and EUR/USD exchange rates, public consumption, net wages, regulated prices, fuel prices, 3M Euribor, euro area GDP, HICP

The Forecasting Process

- Role of near-term forecasting
 - covers short end of forecast horizon
 - shapes the initial conditions of the forecast
 - (in the future) serves as cross-check for final forecast
- Role of expert judgment
 - flexibility of MAMTF allows direct incorporation of expert input (including survey-based information)
 - forecasts of effects of anticipated exogenous events (e.g. capital account liberalization)
 - forecasts of variables not explicitly modeled (e.g. fiscal stimulus)
 - model forecasts can be “tuned” if unrealistic
- Role of medium-term model
 - integrates all information in a consistent way
 - generates an interest rate path which can serve as policy guideline
 - can be used to generate risk scenarios, analyze consistency of alternative scenarios



Flow of Information in the Forecasting Process at the National Bank of Romania



Communication Issues

- Inflation Report
- Increased policy transparency
- Supporting external communication



Inflation Report

- Inflation Report is the main communication tool with the public in order to anchor inflation expectations
- Since August 2005 – quarterly Inflation Report
- Sections:
 - assessment of current economic developments
 - rationale behind the monetary policy decisions in the reviewed period
 - NBR projection on inflation rate developments on an eight-quarter time horizon
 - uncertainties and risks associated with the projection
 - implications of the context on the future monetary policy stance

Increased Policy Transparency

- Increased frequency and quality of communication with public on policy issues
- Prior announcement of calendar for policy-related Board meetings
- Press releases on contents of between-forecast meetings and on the monetary policy decisions



Supporting External Communication

- The NBR website will be re-designed to allow easier access to policy-related information and to include background information on inflation targeting
- Dedicated briefings on benefits of IT and the related policy process
- Brochure series targeted for broader audience
- Background papers to be published
- Conferences, interviews, public speeches

Exceptional Clauses

- Major hikes in **world prices** of raw materials, energy-producing materials and other commodities
- **Natural disasters** and other extraordinary events having cost and demand impacts on prices, including unpredictable changes in agricultural producer prices
- Large fluctuations of the **exchange rate** of the RON that are not connected with domestic economic fundamentals and the monetary policy pursued by the National Bank of Romania
- Major deviations of **administered prices** from the adjustment programme announced by the Government as regards both their magnitude and observance of the implementation calendar
- Deviation of the implementation as well as of **results of income and fiscal policy from the programme**



State of the Economy when Shifting to Inflation Targeting

- Temporary halt in disinflation in 2005 Q2 caused by:
 - supply-side shocks
 - excess demand
 - large capital inflows
 - worsening of inflation expectations
- Resumption of disinflation in 2005 Q3

Inflation Developments in 2005 Q3 and Q4

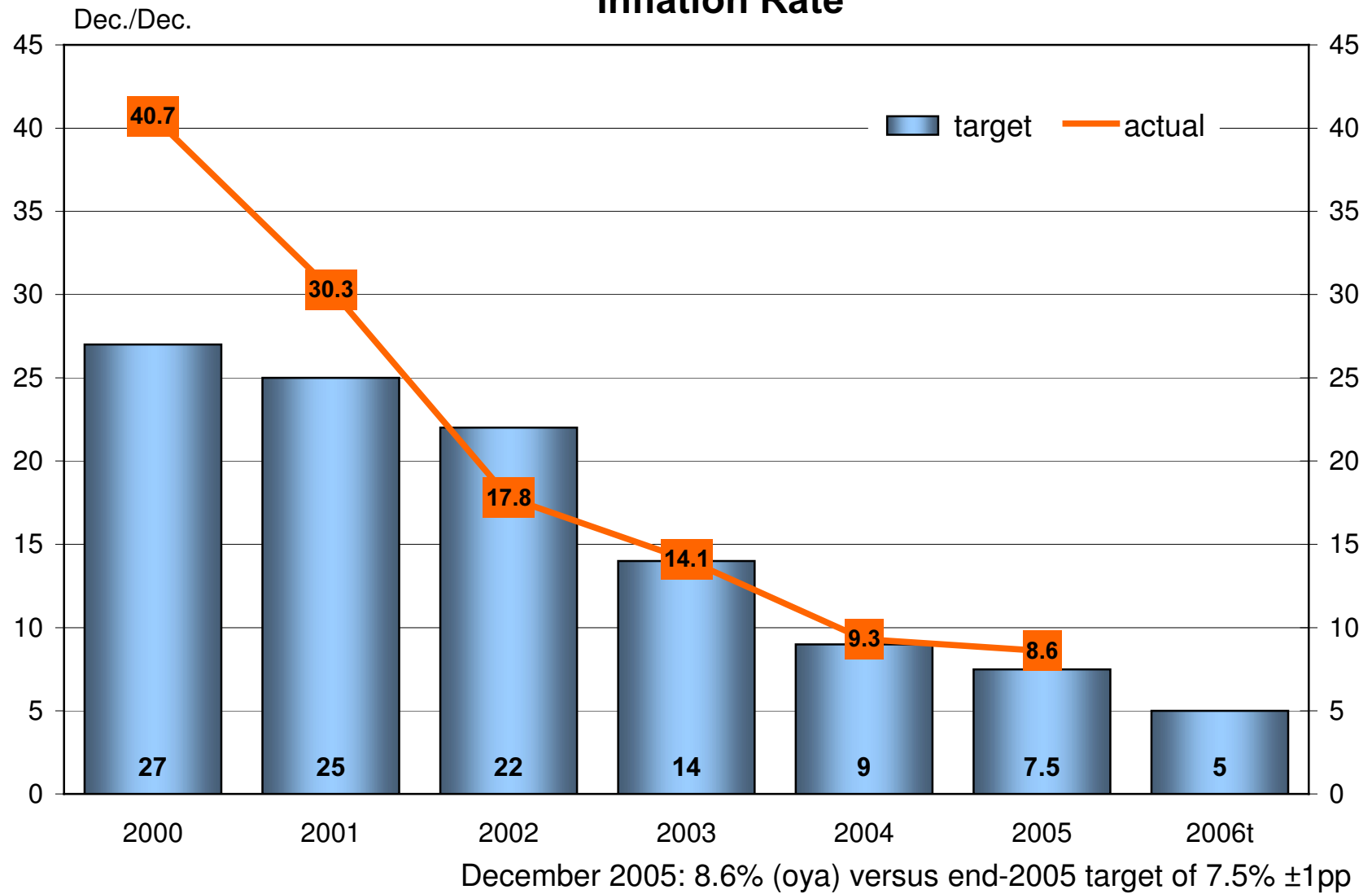
2005 Q3

- **Annual inflation rate fell from 9.7% in June to 8.5% in September**
- **Resumption of disinflation was largely due to some supply-side factors:**
 - persistence of *positive effects of bumper grain in 2004*, which prevented pessimistic expectations on the 2005 farm output from feeding through into the prices for milling and bakery products (accounting for 9.6 percent of the CPI basket);
 - *lower magnitude of adjustments of regulated prices* (due also to the national currency nominal appreciation);
 - exposure of domestic manufacturers to *strong competition from cheaper imports* of consumer goods, amid further nominal strengthening of the *leu* versus the EUR

2005 Q4

- **Reversal of disinflation trend – annual inflation rate increased from 8.1% in October to 8.6% in December, as a result of:**
 - *further adjustment of administered prices* (heating price was raised 20 percent month-on-month)
 - *the recent depreciation trend* of the domestic currency against the euro (with impact on both market and administered prices)
 - *stronger pressures on prices for fruit and vegetables*, as a direct effect of repeated severe floodings on the domestic supply of such goods

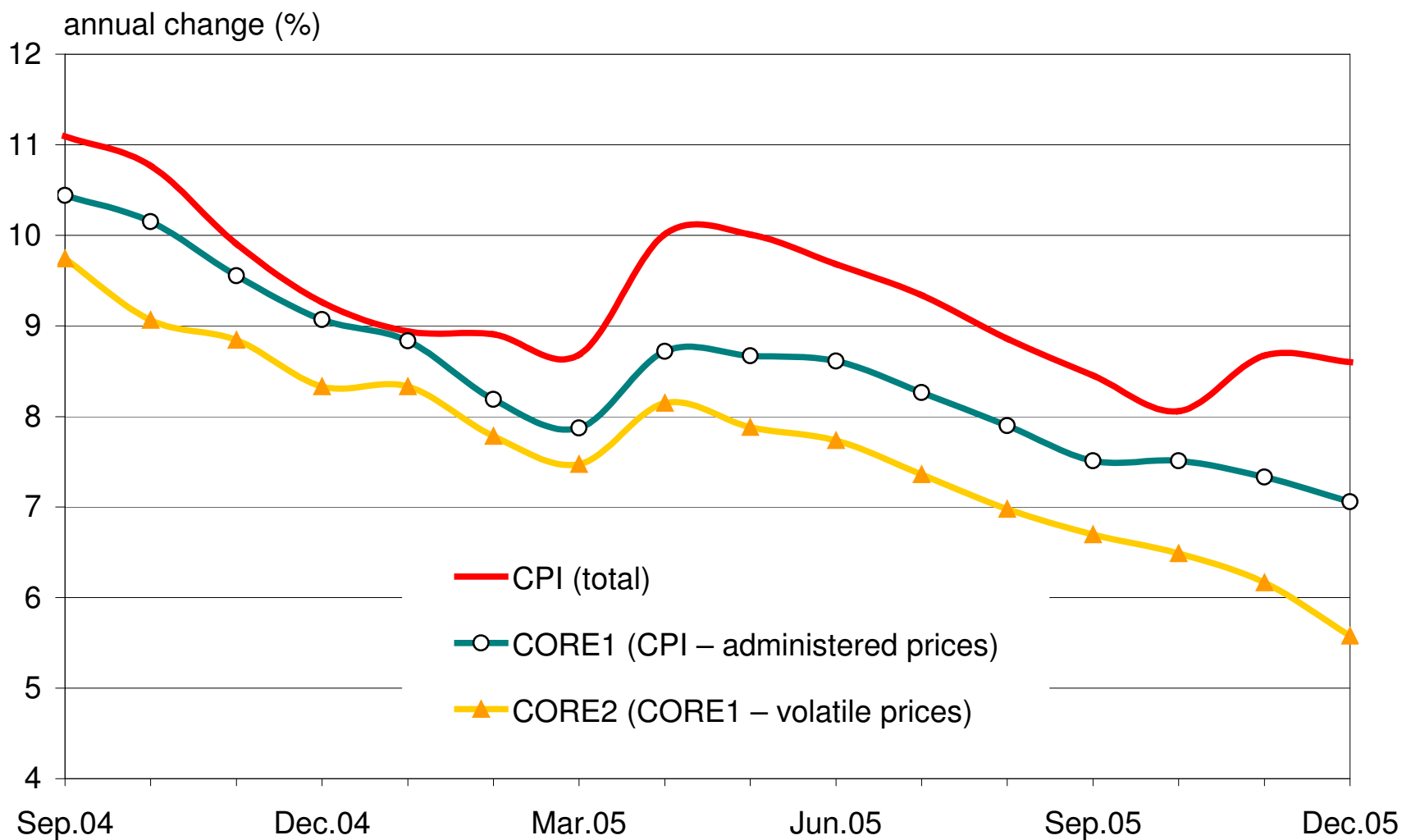
Inflation Rate



Source: National Institute of Statistics



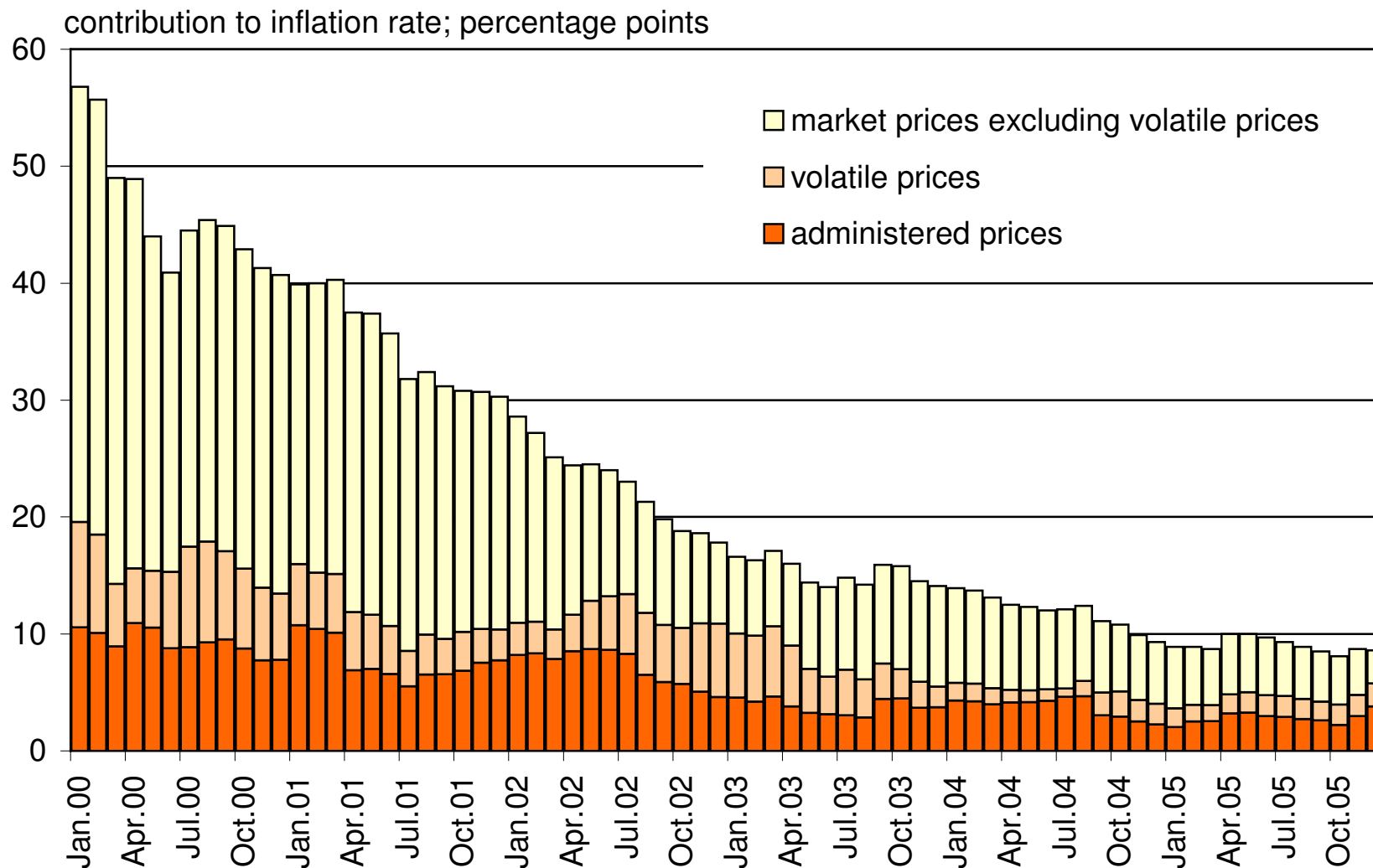
Headline Inflation and Core Inflation



Source: National Institute of Statistics, National Bank of Romania calculations



Inflation Rate

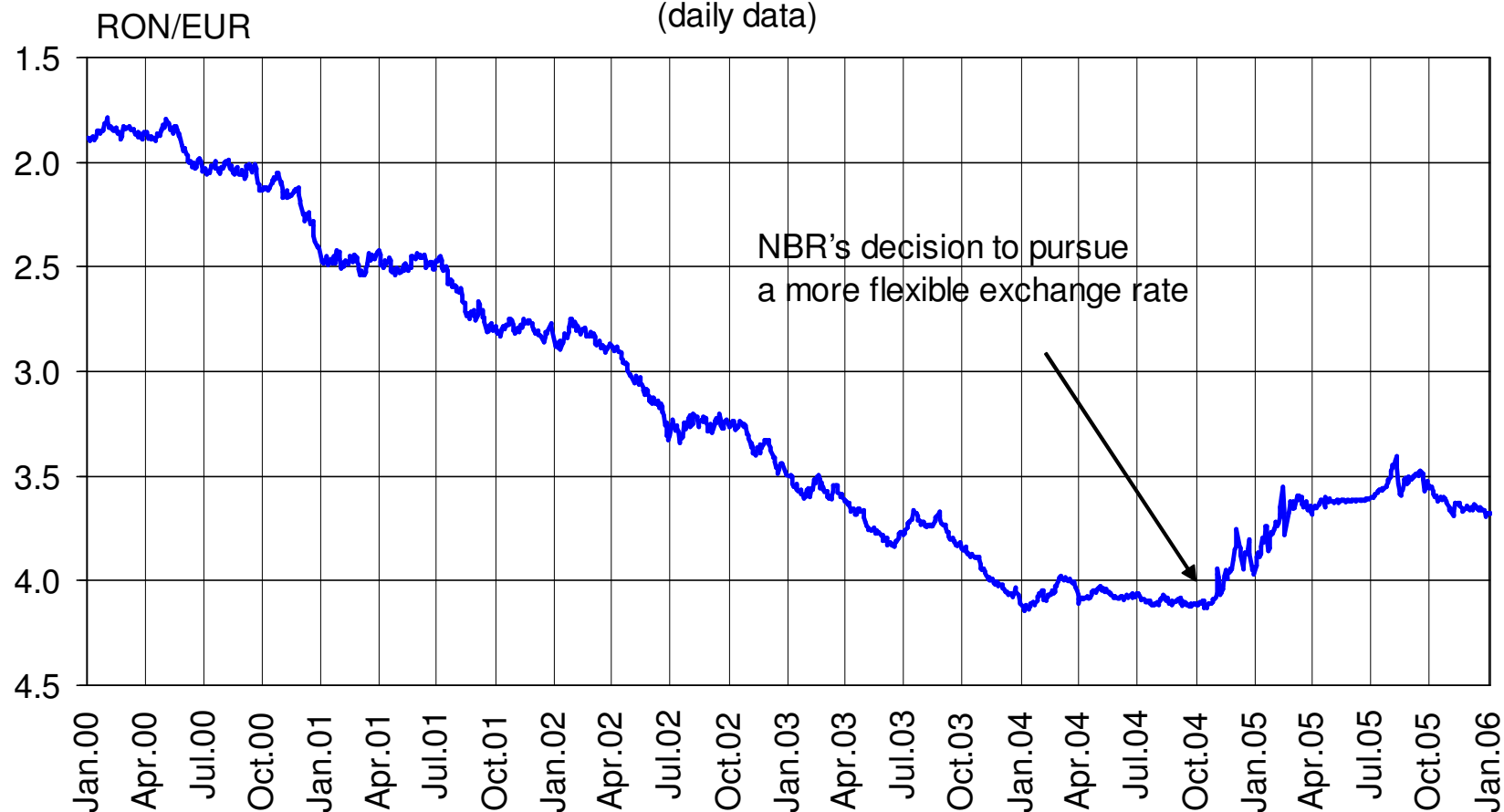


Source: National Institute of Statistics, National Bank of Romania calculations



Nominal Exchange Rate

(daily data)



At end-December 2005, nominal appreciation of the RON against the EUR was 4.7% compared with end-November 2004 and 7.9% compared with end-December 2004.

At end-November 2005, real appreciation of the RON against the EUR was 14.5% compared with end-November 2004 and 17.3% compared with end-December 2004.

Source: National Bank of Romania



Factors Hampering Disinflation

- Persistence of excess demand
- Massive capital inflows
- Uncertainties surrounding price developments

Excess Demand

▪ Main causes:

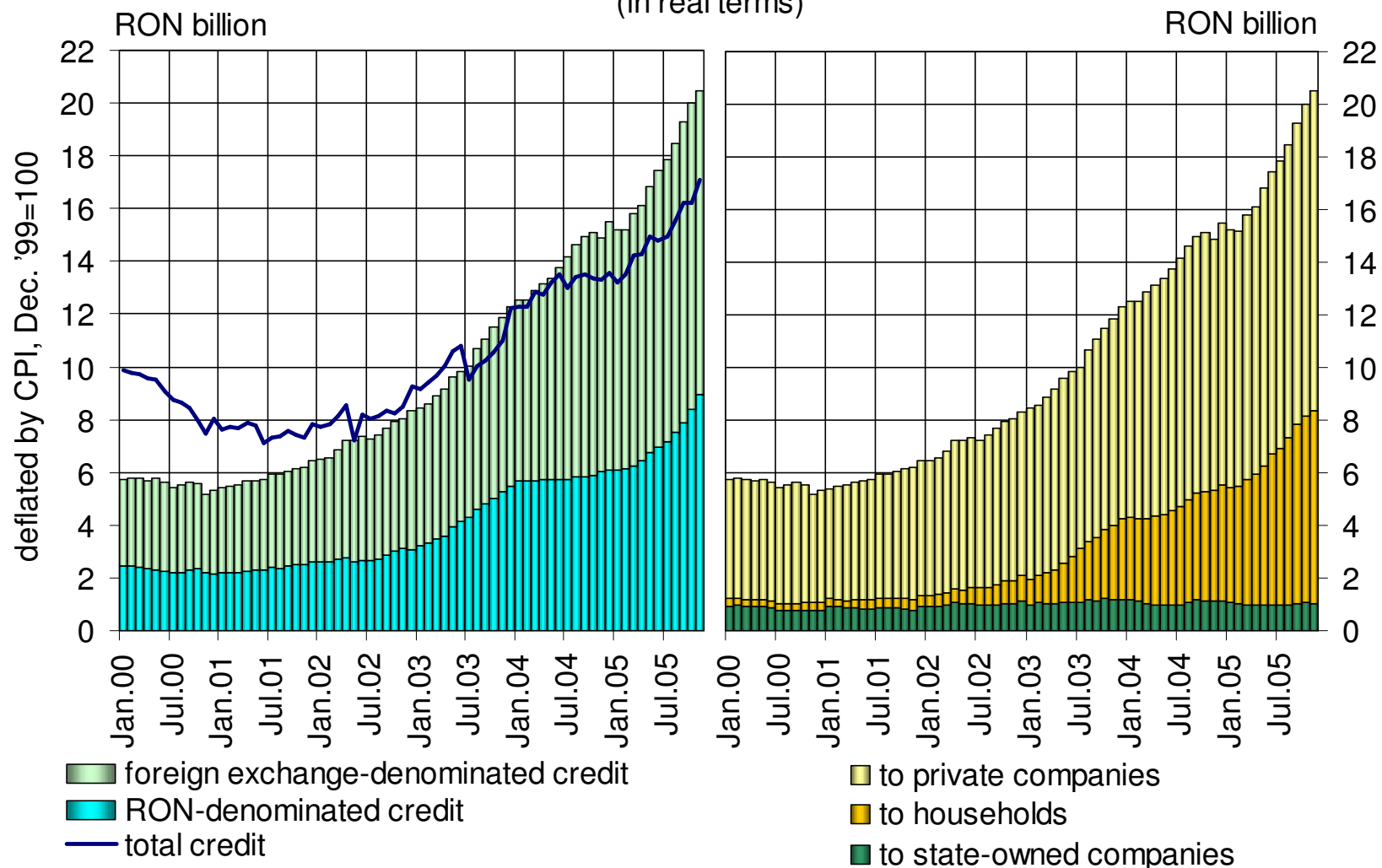
- growth of disposable income
- acceleration of private sector indebtedness
 - ✓ favorable access conditions to alternative sources of bank and non-bank financing
 - ✓ strong expansion of foreign exchange-denominated credit
- expansion in inflows of capital of various types (including longer-term, stable capital flows)
 - ✓ boosts short-term excess demand, but, in case of foreign investment, ensures sustainability of economic growth in the long run (leading to increase in potential GDP)

▪ Consequences:

- current account deficit
- inflationary pressures

Total Credit and Non-Government Credit

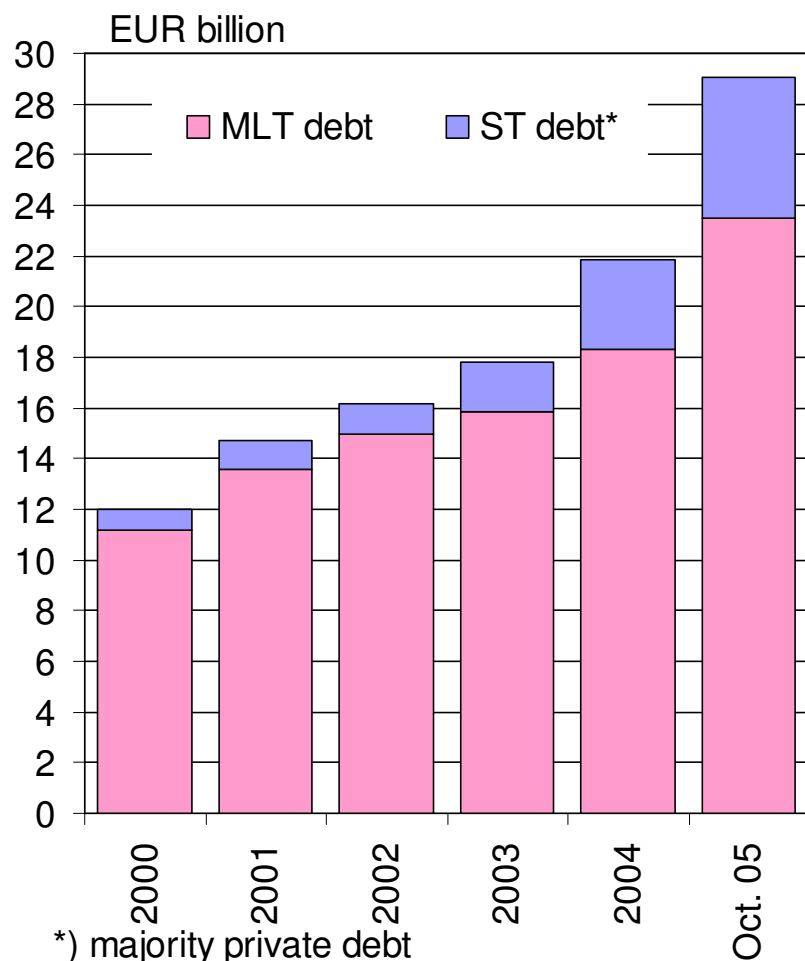
(in real terms)



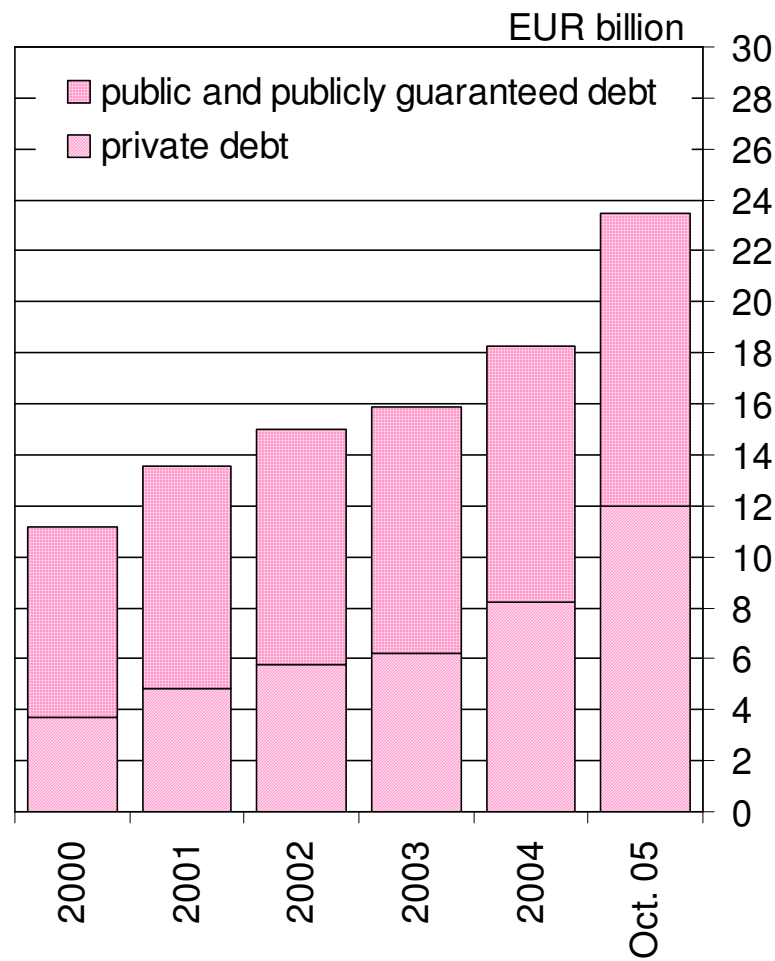
Source: National Bank of Romania, National Institute of Statistics



Total External Debt



MLT External Debt



Public debt is estimated at 19% of GDP in 2005 (domestic debt: 5% of GDP; external debt: 14% of GDP)

Source: National Bank of Romania, Ministry of Public Finance

Uncertainties about Price Developments

- Domestically:
 - future dynamics of administered prices
 - developments in natural conditions, with an impact on food prices (volatile prices in particular)
 - future design of fiscal and income policies

- Internationally:
 - trend in prices of some raw materials (oil, natural gas, etc.)
 - movements in EUR/USD exchange rate

Massive Capital Inflows

- Adverse effects:
 - pressure on exchange rate
 - narrower room for maneuver in interest rate policy:
Tošovský dilemma
- Types:
 - direct investment
 - medium- and long-term loans
 - short-term (speculative) financial investments
- Causes:
 - favorable prospects of the economy
 - reduction in risk premium
 - attractive interest rate differential

Liberalization of International Flows

1998: liberalization of current account operations (Art. VIII of IMF Articles of Agreement)

1999: liberalization of medium- and long-term capital inflows

2001: schedule of capital account liberalization

Liberalization of capital flows with low impact on the balance of payments

2001-02

- direct and real-estate investment by residents abroad
- admission to quotation of national securities* on foreign capital markets
- collateral granted by foreigners to residents
- personal capital movements

Liberalization of capital movements consisting of transfers in performance of insurance contracts and other capital flows with significant impact on the real sector

2003

- medium- and long-term loans related to commercial transactions or services granted by residents to non-residents
- capital transfers in performance of insurance contracts

2004

- residents' transactions in foreign securities*
 - financial borrowings and loans with maturity less than 1 year granted by foreigners to residents
 - financial borrowings and loans granted by residents to foreigners
 - collateral granted by residents to foreigners
- 2004
- admission to quotation of foreign securities* on domestic capital markets

Liberalization of capital flows with significant impact on the balance of payments

11 April 2005

- operations in ROL-denominated deposit accounts opened by foreigners with resident financial institutions

July 2005

- operations in current and deposit accounts opened by residents abroad

by 1 Sept. 2006

- operations in securities and other open market instruments

*) including operations in units of collective investment undertakings

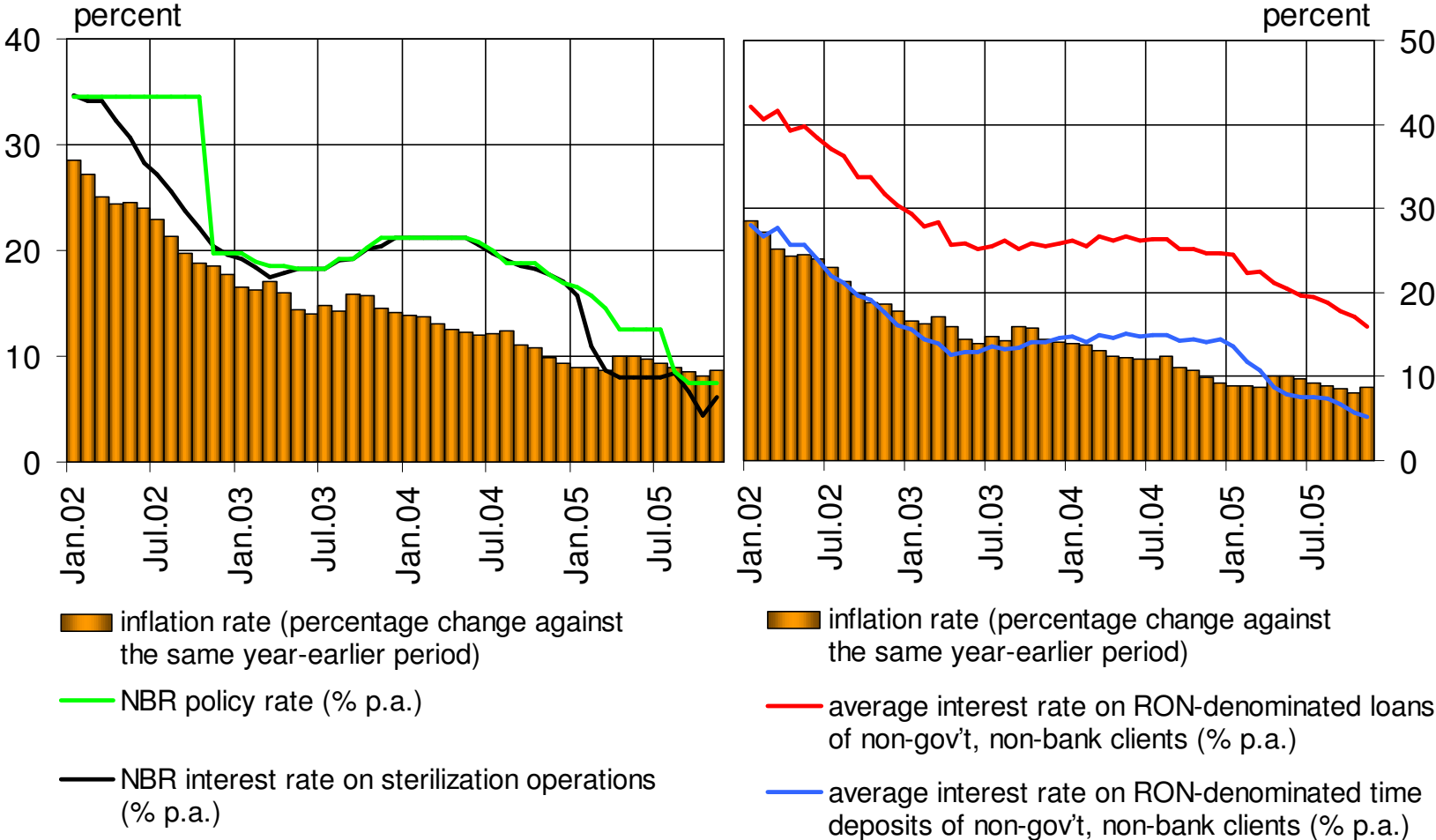


Coping with Capital Account Liberalization

- Additional measures to keep in check aggregate demand
 - tightening reserve requirements regime for foreign currency liabilities (by increasing the reserve base)
 - tightening lending requirements, also for prudential reasons
- Fiscal policy contribution – by reducing budget deficit
- Outcome: smooth landing after capital account liberalization



Inflation Rate and Interest Rates

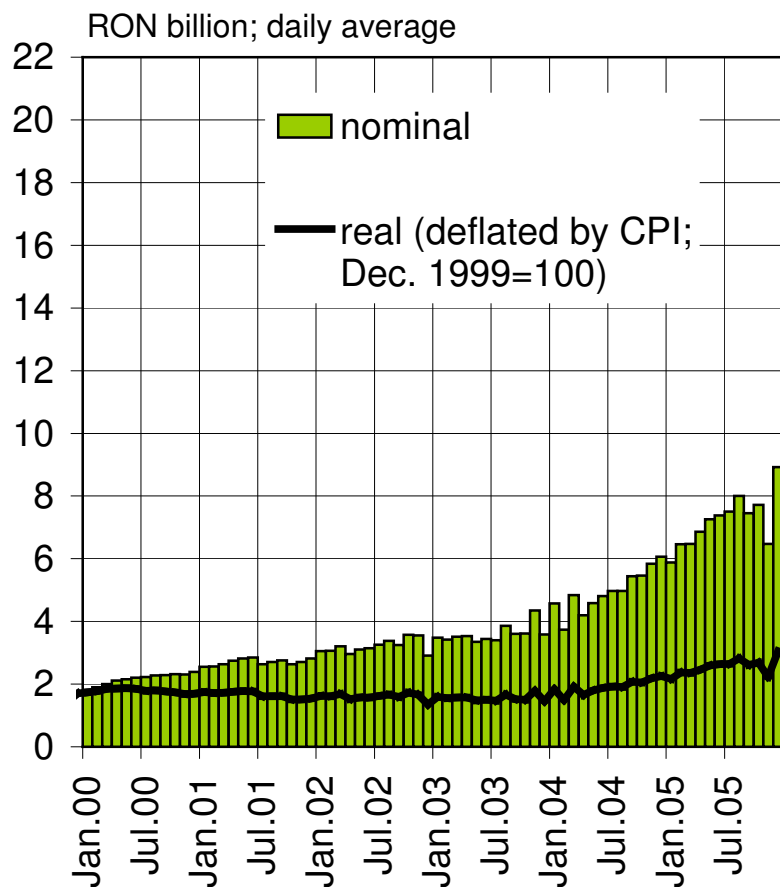


NBR policy rate: 7.5% starting with 22 September 2005

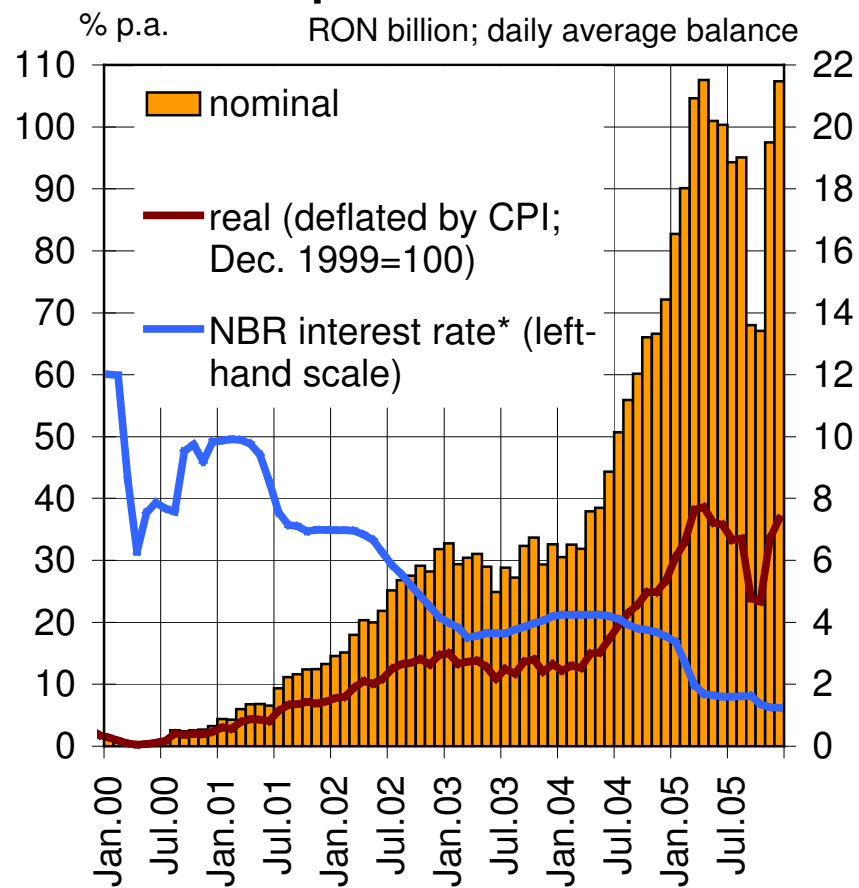
Source: National Bank of Romania, National Institute of Statistics



Banks' Current Accounts with NBR



Volume of Sterilization Operations



*) weighted average of interest rates on sterilization operations

Sterilization operations outstanding as of end-December 2005 amounted to EUR 6.3 bn. compared to EUR 4.0 bn. at end-2004.

Source: National Bank of Romania, National Institute of Statistics

Present Stance of Monetary Policy

- Maintenance of policy rate at 7.5 percent:
 - anchoring of inflation expectations
 - avoidance of short-term capital inflows
- Increase in volume of liquidity mopped up via open-market operations (deposit-taking operations + CDs):
 - rise in interbank market rate, with an impact on interest rates applied by credit institutions
 - preclusion of major fluctuations on money and foreign exchange markets

(continued)

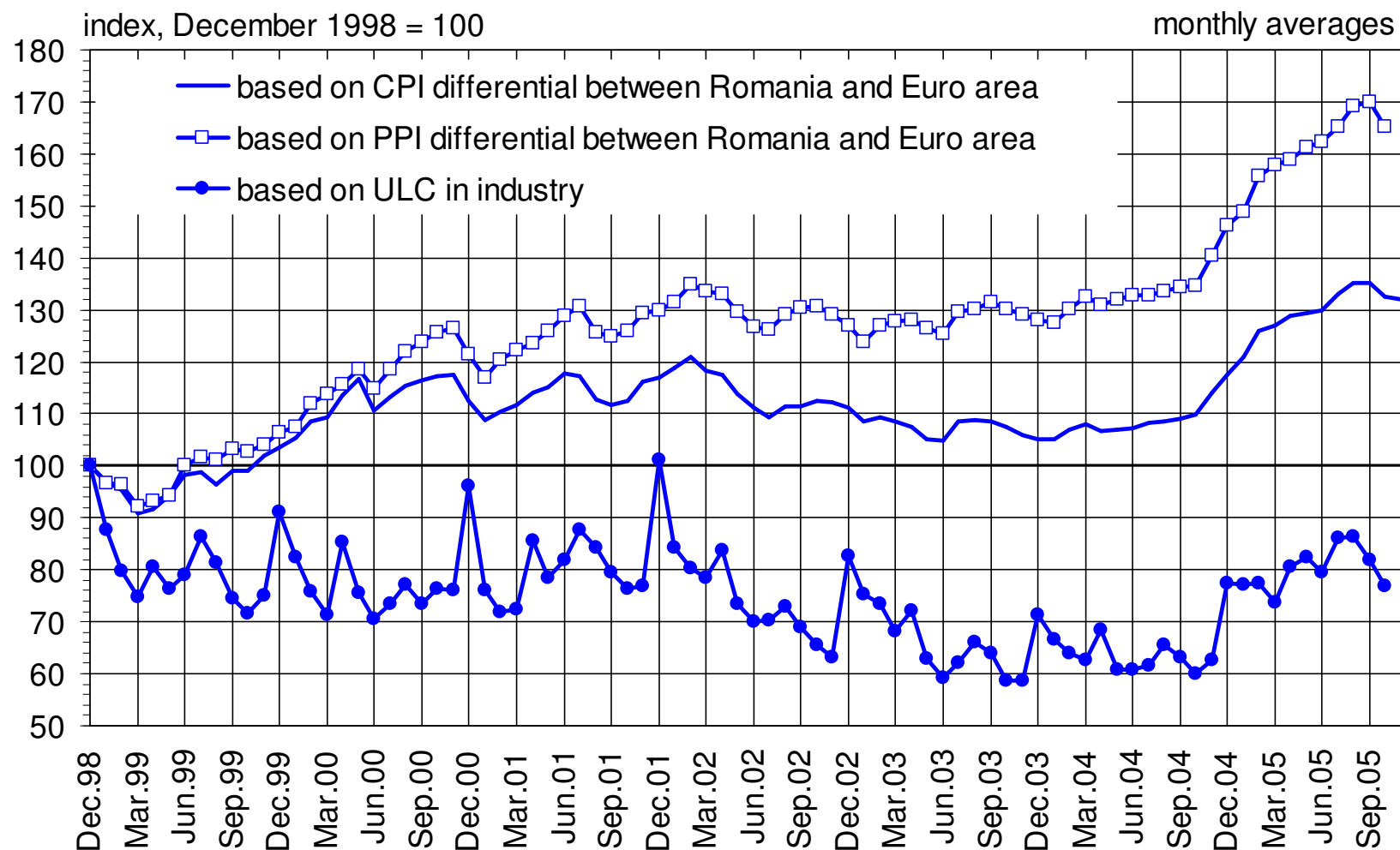
Present Stance of Monetary Policy

- **Contractionary nature of reserve requirements for foreign exchange liabilities and reduction in reserve ratio on RON-denominated liabilities:**
 - containment of foreign exchange lending
 - relative increase in costs associated with foreign exchange lending in order to underpin improvement of non-government credit

- **Prudential and administrative measures**
 - on a limited time horizon
 - **cause:** large interest-rate differential restrains resort to interest lever
 - **rationale:** maintaining financial stability and enhancing effectiveness of monetary policy instruments
 - **objective:** to tighten eligibility criteria on bank credit to households and to contain banks' supply of foreign exchange-denominated loans



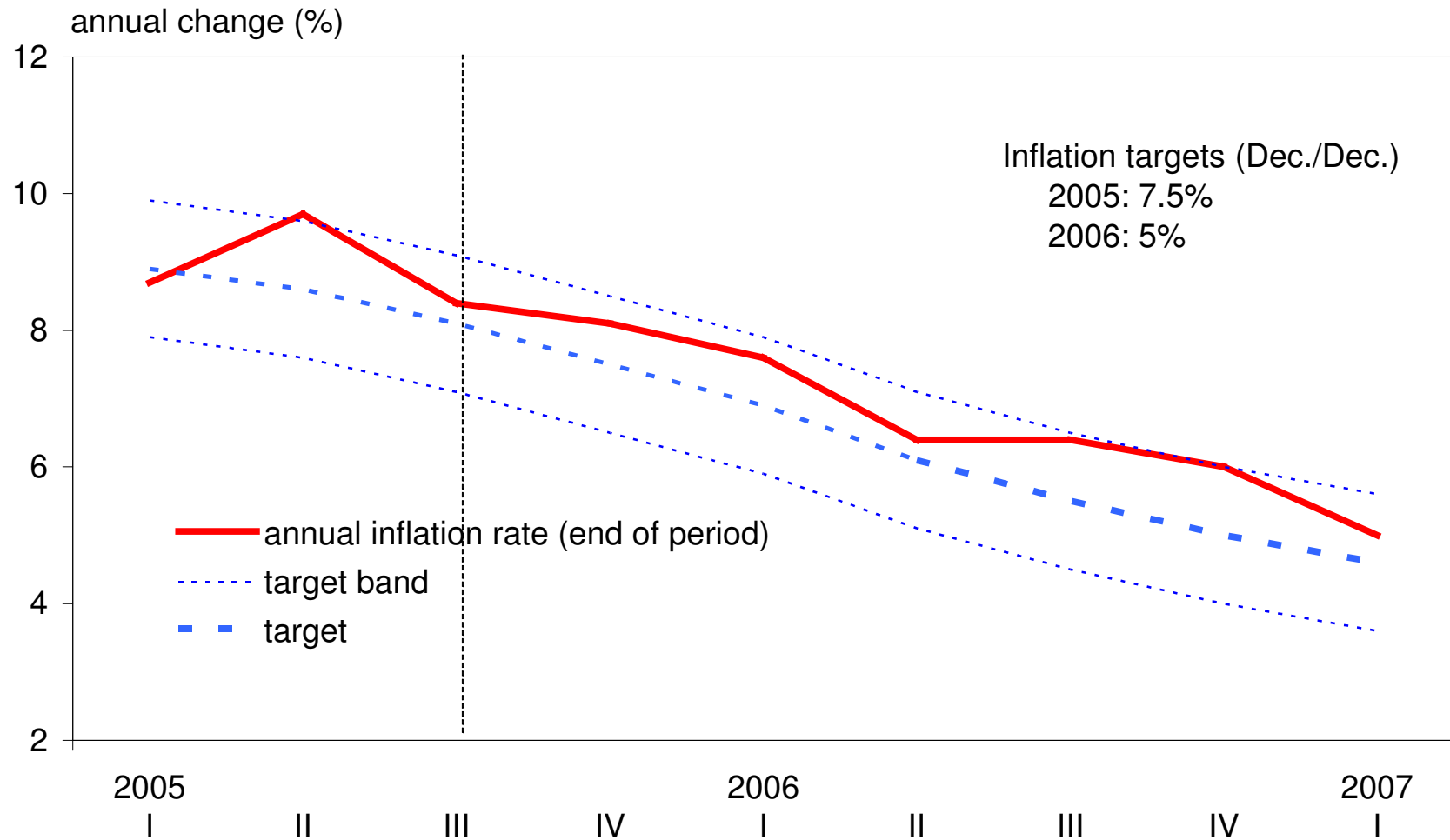
Real Exchange Rate of the RON against the EUR



Source: National Bank of Romania calculations, National Institute of Statistics, International Financial Statistics



Inflation Forecast



Note: ± 1 percentage point around the (dis)inflation path

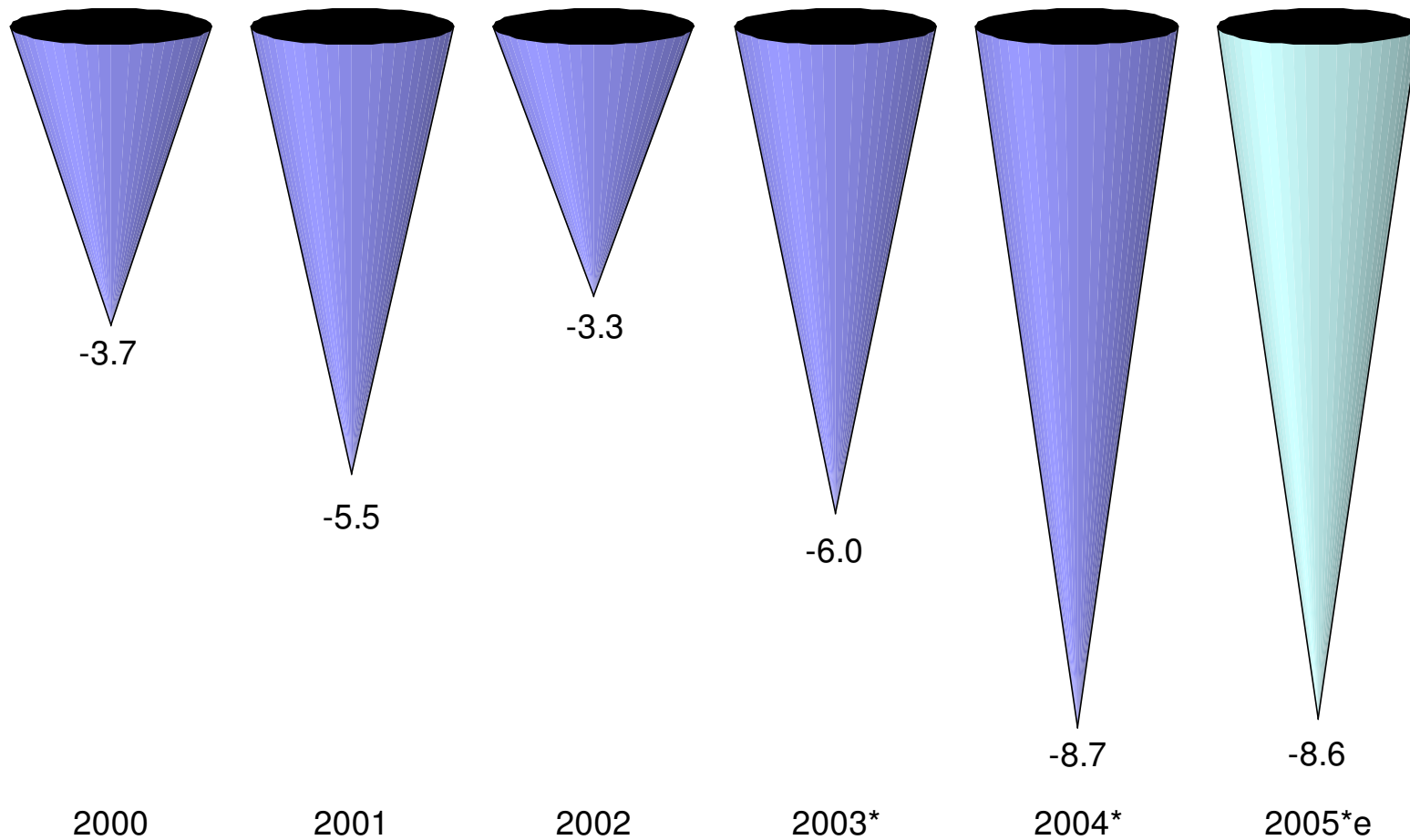
Source: National Institute of Statistics, National Bank of Romania calculations

Short-Term Critical Requirements

- Avoiding additional rise in any component of the aggregate demand (government revenues and expenditures, credit etc.):
 - adverse effects of increasing excess demand:
 - ✓ in the short run, it can cause a halt in disinflation and widens the external imbalance
 - ✓ in the long run, it undermines sustainability of economic growth
- Prudent policy mix aimed at maintaining a sustainable rate of capital inflows

Current Account Balance/GDP

percent

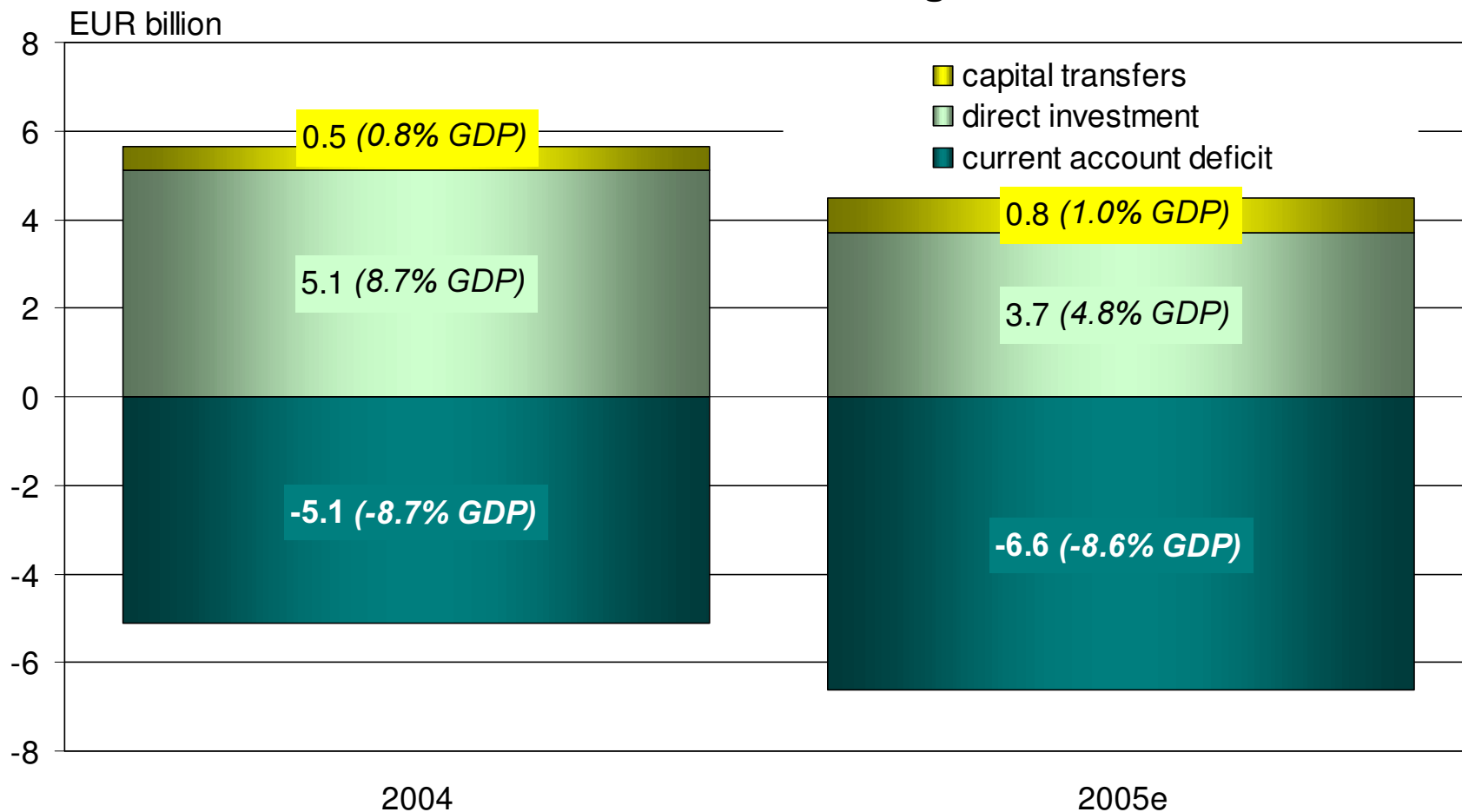


CAD: 6.3% of annual GDP in Jan.-Oct. 2005

*) including reinvested profit

Source: National Bank of Romania, National Institute of Statistics

Current Account Financing via FDI



Current account financing via FDI (including capital transfers) is estimated at 68.0% in 2005 vs 110.6% in 2004.

FDI is expected to decrease by 27.5%, due to decline in privatization receipts to EUR 0.750 bn in 2005 (privatization of Distrigaz Sud, Distrigaz Nord, Electrica Oltenia, Electrica Transport) from EUR 1.680 bn in 2004 (privatization of Petrom and BCR)

Source: National Bank of Romania, National Institute of Statistics