MONETARY POLICY IN THE LANDING AND ERMII PHASES
Lessons from Slovenia

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PHASES OF THE SLOVENIAN TRANSITION

- Macroeconomic stability (until 1996)
- Structural changes (until 2000)
- Landing phase (until entering the EU in 2004)
- Intermediate (ERMII) phase (until entering the euro area in 2007)

MONETARY POLICY IN THE LANDING AND ERMII PHASES

I.   JUSTIFICATION, DESIGN AND IMPLEMENTATION

II.   MONETARY STANCE AND ECONOMIC PERFORMANCE

III. COSTS

IV. LESSONS

I. JUSTIFICATION, DESIGN AND IMPLEMENTATION

- ARGUMENTS FOR THE CHANGE IN MONETARY POLICY
- MONETARY POLICY GUIDELINES
- MONETARY POLICY IMPLEMENTATION

ARGUMENTS FOR THE CHANGE IN MONETARY POLICY

- Characteristics of the monetary policy transmission mechanism
- External changes and the structure of the economy

Characteristics of the monetary policy transmission mechanism

- Effects of the exchange rate price anchoring of tradables were significant, but those of nontradables minor
- Money anchoring had strong and considerably more uniform effects across sectors
- In the open capital account environment, targeting the (real) interest rate of domestic currency instruments would not be effective without controlling UIP

Source: Bole (2003); on exchange rate pass-through, see IMF (2004)

External changes and the structure of the economy

- Structural changes and necessary economic policy adjustments to enter the EU
  - VAT introduction
  - Increase of excises
  - Lifting capital controls
- Fiscal consolidation
  - Increase of VAT rates
- Distorted relative prices of nontradables
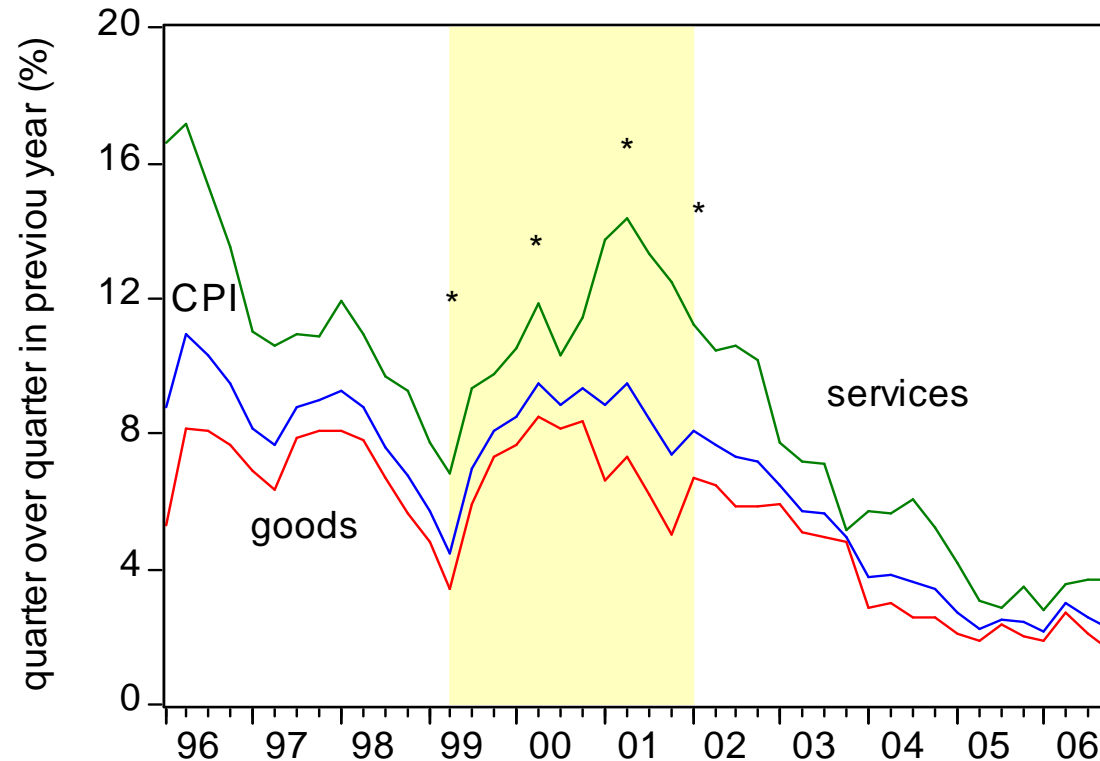- Market structure differences between tradable and nontradable sectors

Net financial inflows

- Note: the period of policymaker-induced shocks is shaded
- Source: "Bulletin", Bank of Slovenia; Statistical Office of the Republic of Slovenia; own calculations

Inflation

- Note: the period of policymaker-induced shocks is shaded – stars denote shocks: 1999/III VAT introduction and lifting capital controls; 2000/III model of gasoline prices changed and prices increased; 2001/I regulated prices and environmental taxes considerably adjusted-increased; 2002/I VAT rates increased
- Source: Statistical Office of the Republic of Slovenia; own calculations
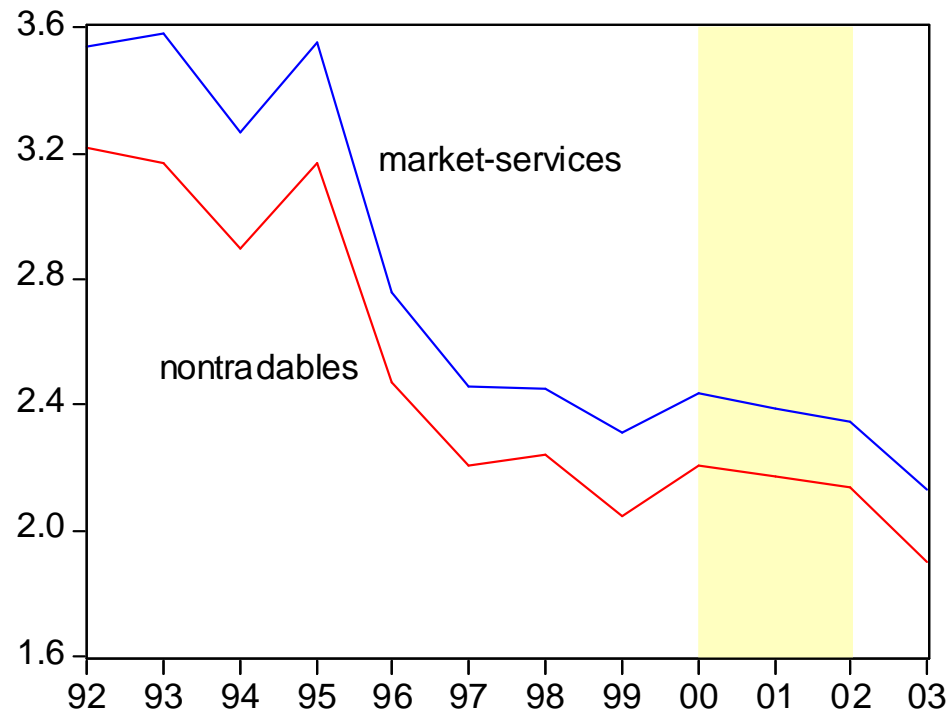
Policymaker-induced shocks
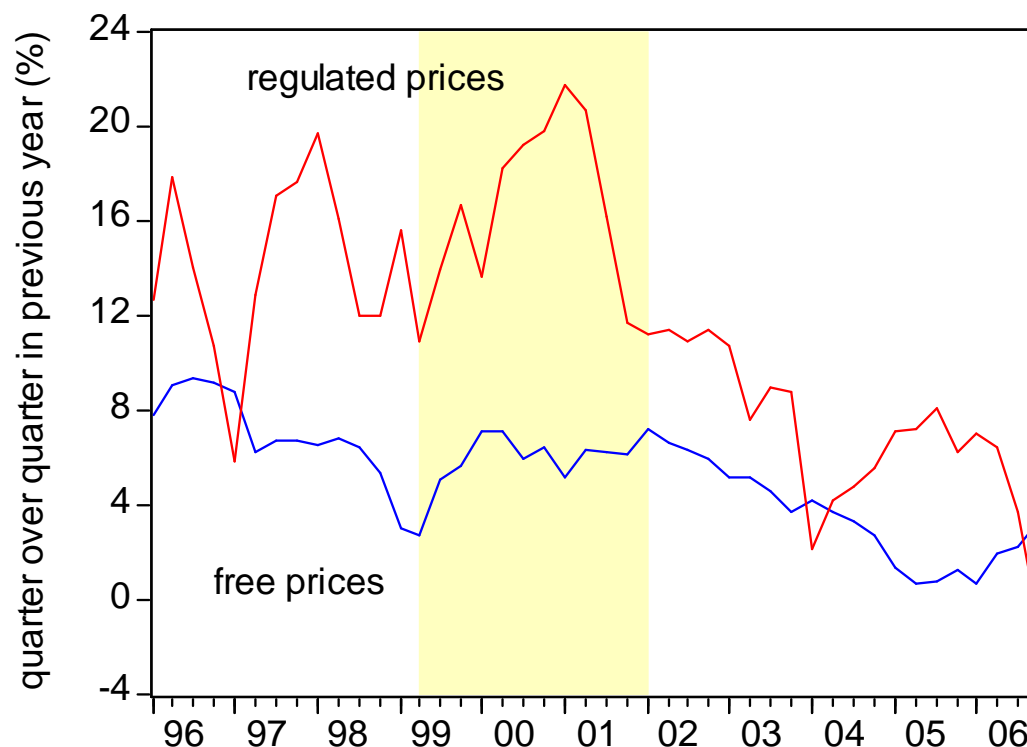
- Note: the aggregate of regulated prices includes costs of social care, transport services (part), communication services (part), electricity, community services and gasoline; the period of policymaker-induced shocks is shaded
- Source: Statistical Office of the Republic of Slovenia; own calculations

Ball asymmetry of relative price changes
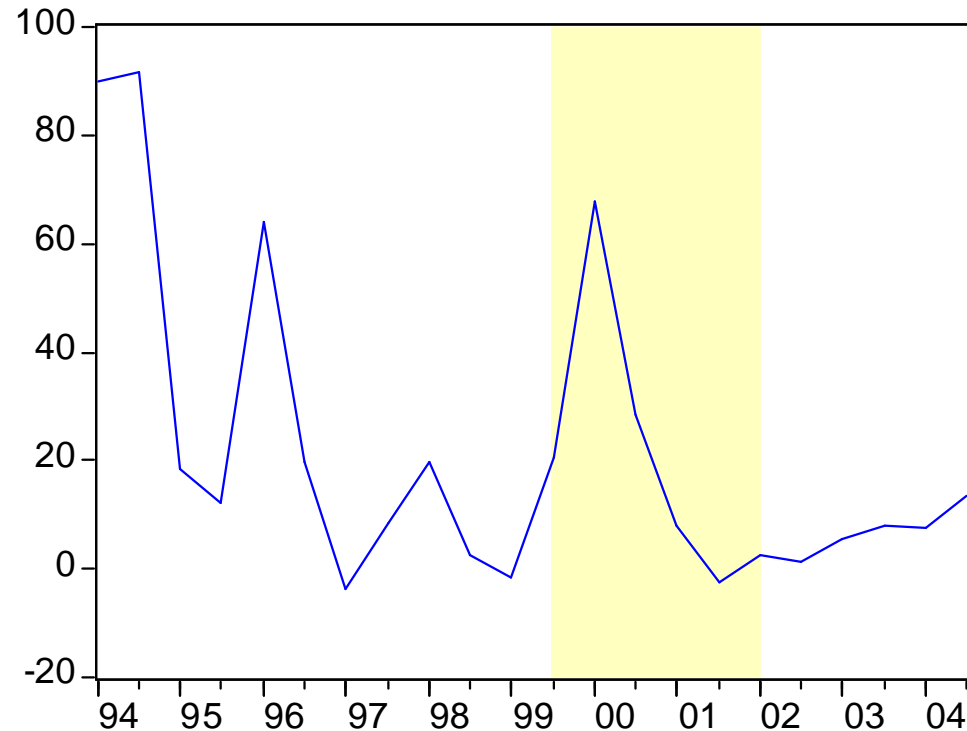
- Note: Ball measure of the asymmetric variability of relative prices (Ball and Mankiew (1995)); the period of policymaker-induced shocks is shaded
- Source: Bole and Mramor(2006); Statistical Office of the Republic of Slovenia; own calculations

Market structure – relative price-cost margin

- Note: price-cost margin in market services and nontradable-producing segments relative to the tradable sector; the period of policymaker-induced shocks is shaded
- Source: Bole and Mramor(2006); Statistical Office of the Republic of Slovenia; own calculations

MONETARY POLICY DESIGN – GUIDELINES

- Inflation of market nontradables – new monetary policy goal

- Tolar (real) lending interest rate – new monetary policy target

- Closed (risk premium adjusted) UIP – new operational target of exchange rate policy

# Sequence of decision-making of policymakers
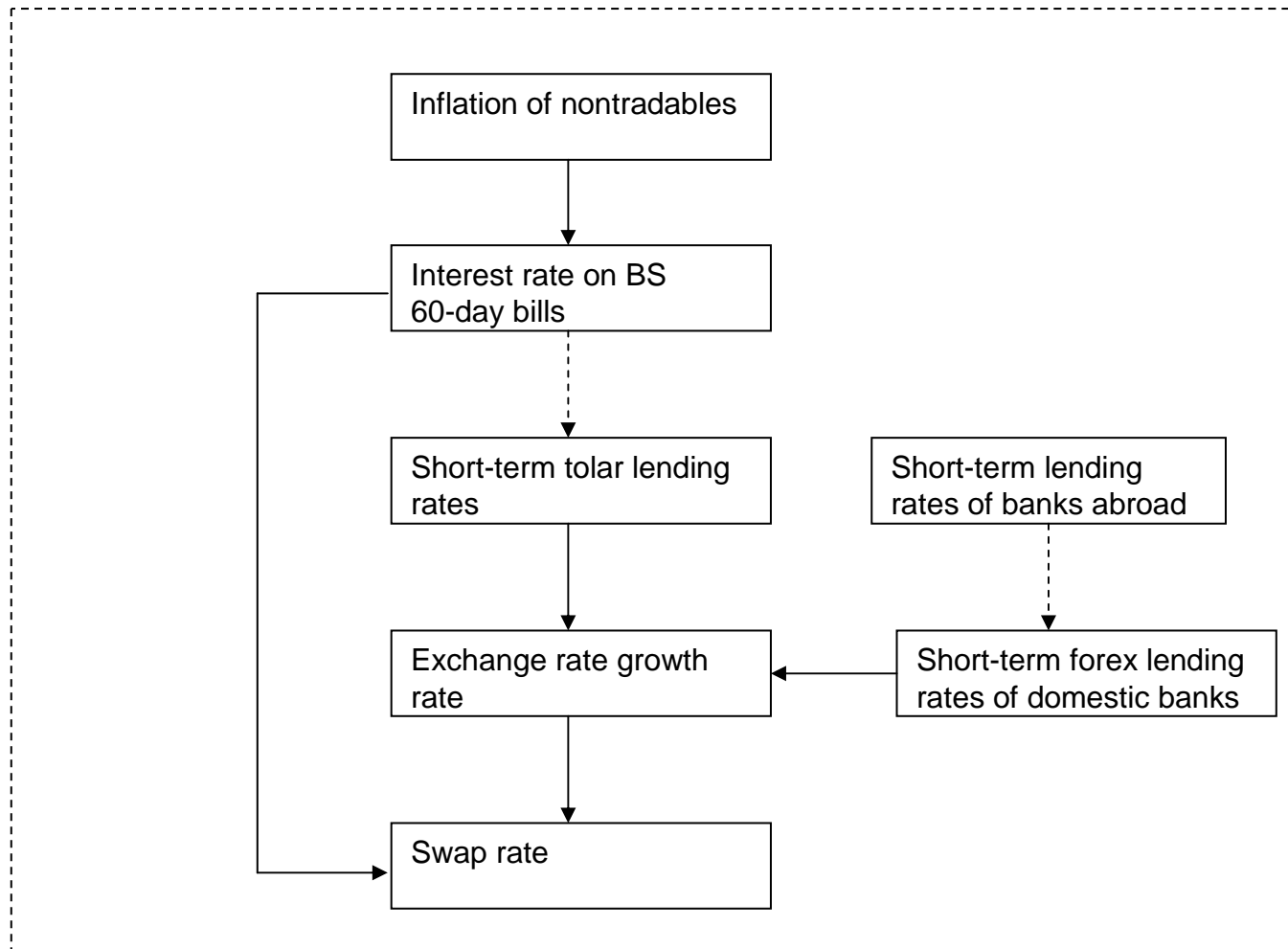
POLICY IMPLEMENTATION

- Cooperation agreement between BS and "participating" (market-making) banks
- Swap operations
- Outright purchase (sale) of forex
- Sterilization

Agreement between BS and participating banks

- Signaling exchange rate change
- Open and unlimited purchase and sale swap arrangement
- Swap operation price – swap rate
- Termination of cooperation agreement
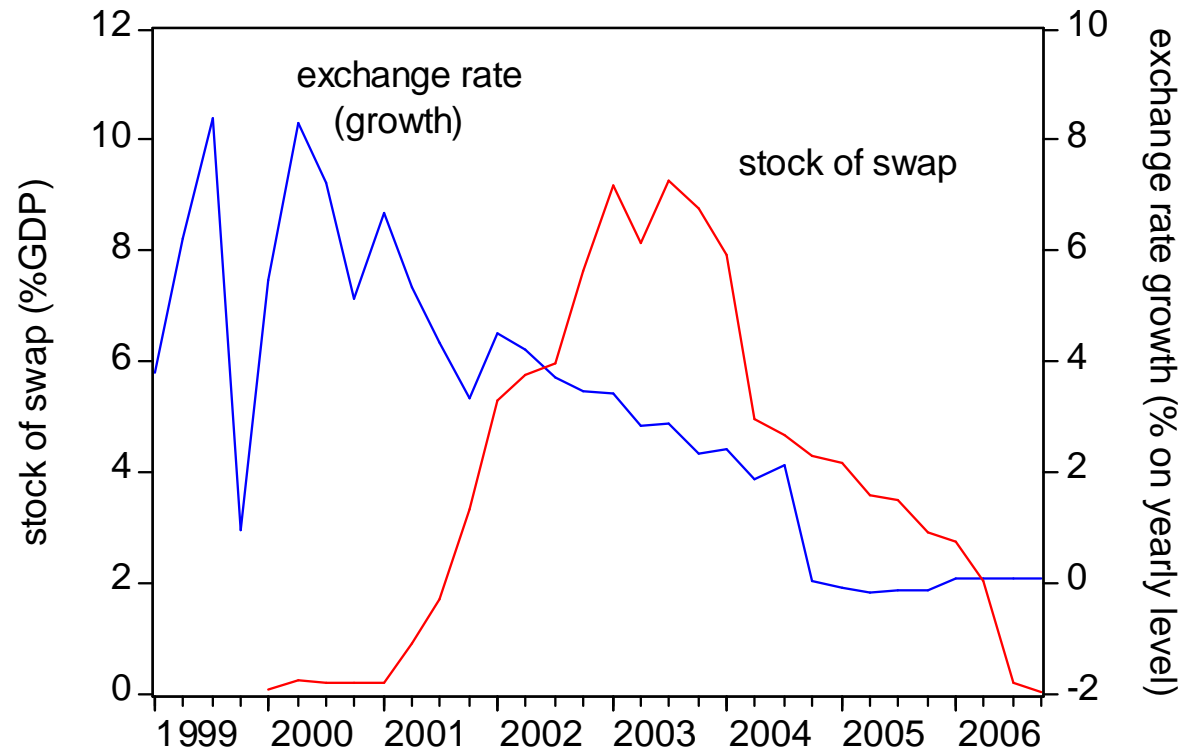- Liquidity ladder principle
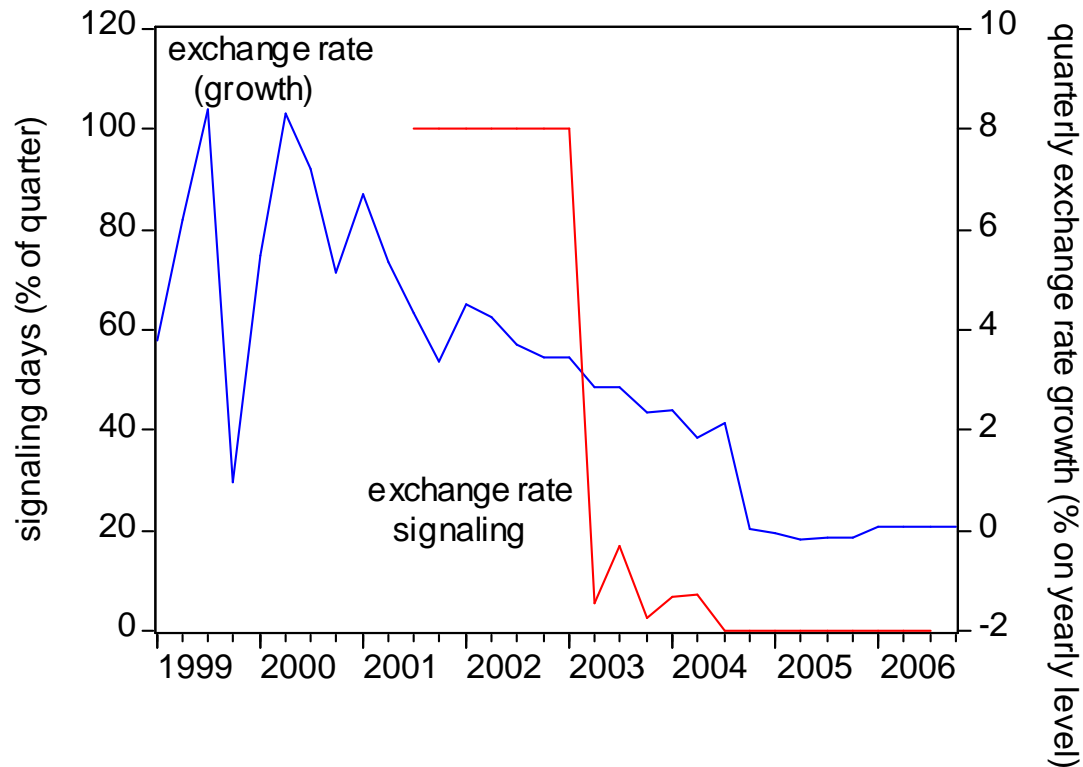
Swap rate determination
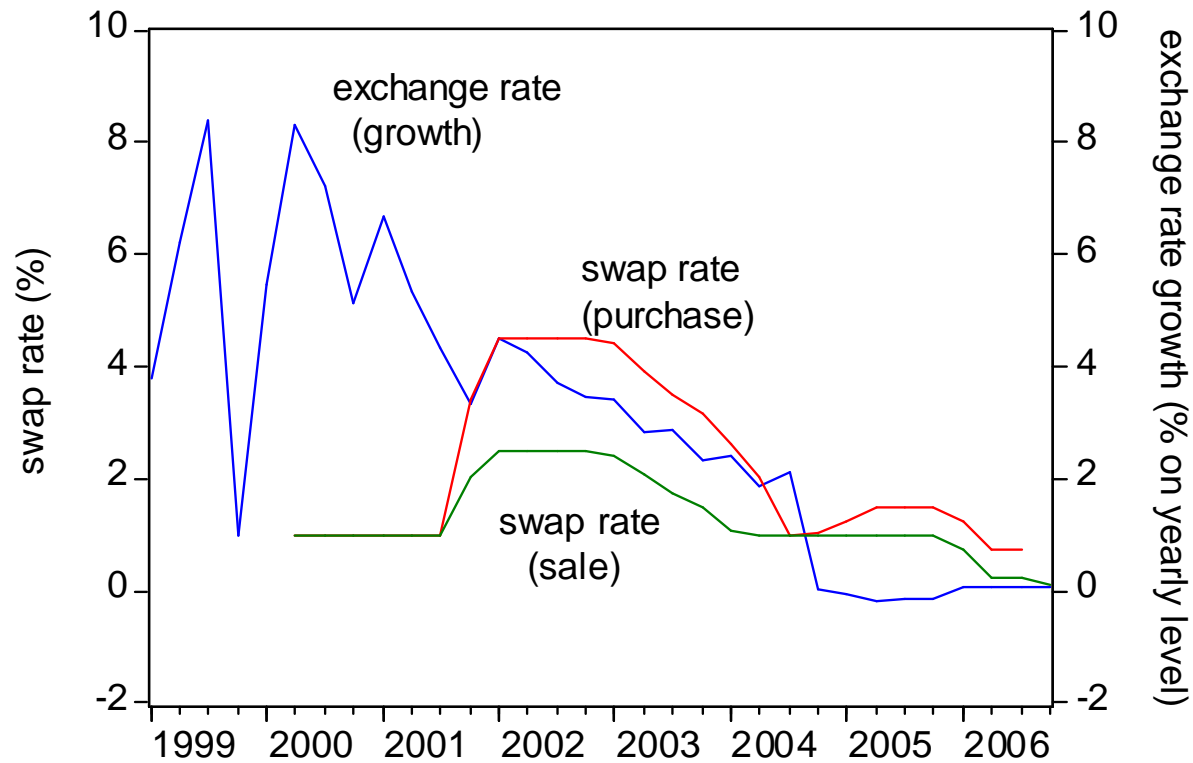
- Source: Statistical Office of the Republic of Slovenia; "Bulletin", Bank of Slovenia; own calculations

Overview of swap operations I

- Note: the swap instrument was launched in 2000/II
- Source: Statistical Office of the Republic of Slovenia; "Bulletin", Bank of Slovenia; "Overview of policy measures", Bank of Slovenia; own calculations

Overview of swap operations II

- Note: exchange rate signaling was launched in 2000/II; the intensity of exchange rate signaling is presented as a percentage of days in a quarter with active signaling (left scale)
- Source: Statistical Office of the Republic of Slovenia; "Bulletin", Bank of Slovenia"; "Overview of policy measures", Bank of Slovenia; own calculations

# Sterilization – base money control

- Net foreign financial inflows after 2000 accumulated to 23% GDP
- Cumulative net monetization (swap and outright purchase) increased to 12% GDP
- Sterilization facilitated by BS bills and government deposits
- Nonmonetized financial inflows were sucked out by BS forex bills and bank deposits abroad
- Restructuring public debt decreased net foreign financial inflows

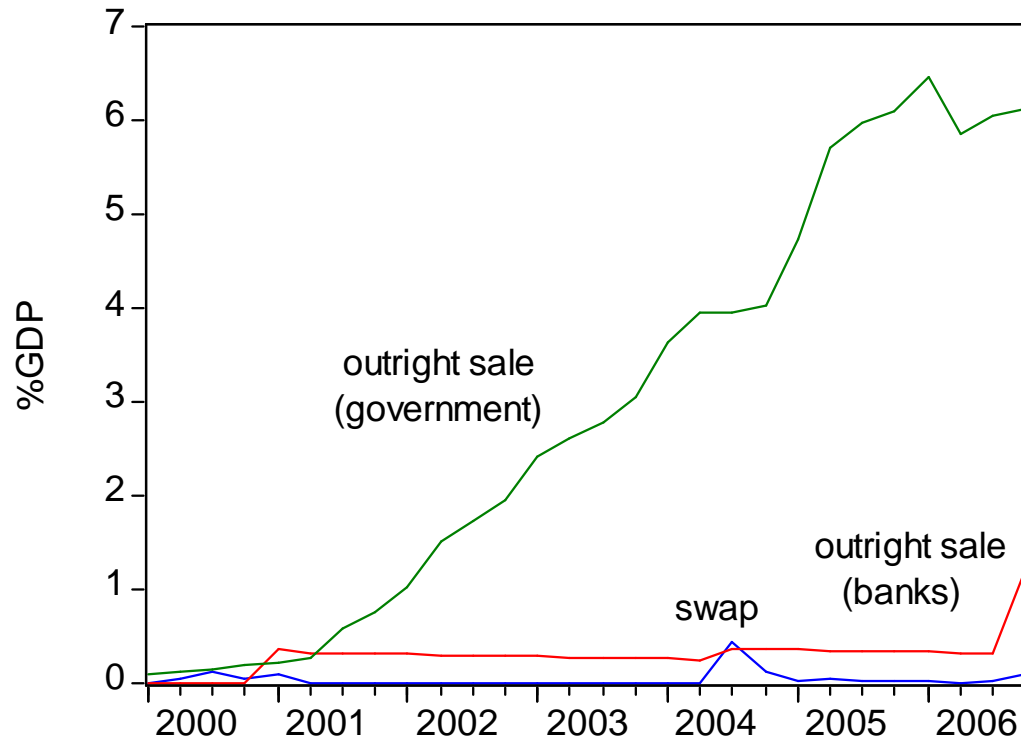# Net financial inflows and money supply
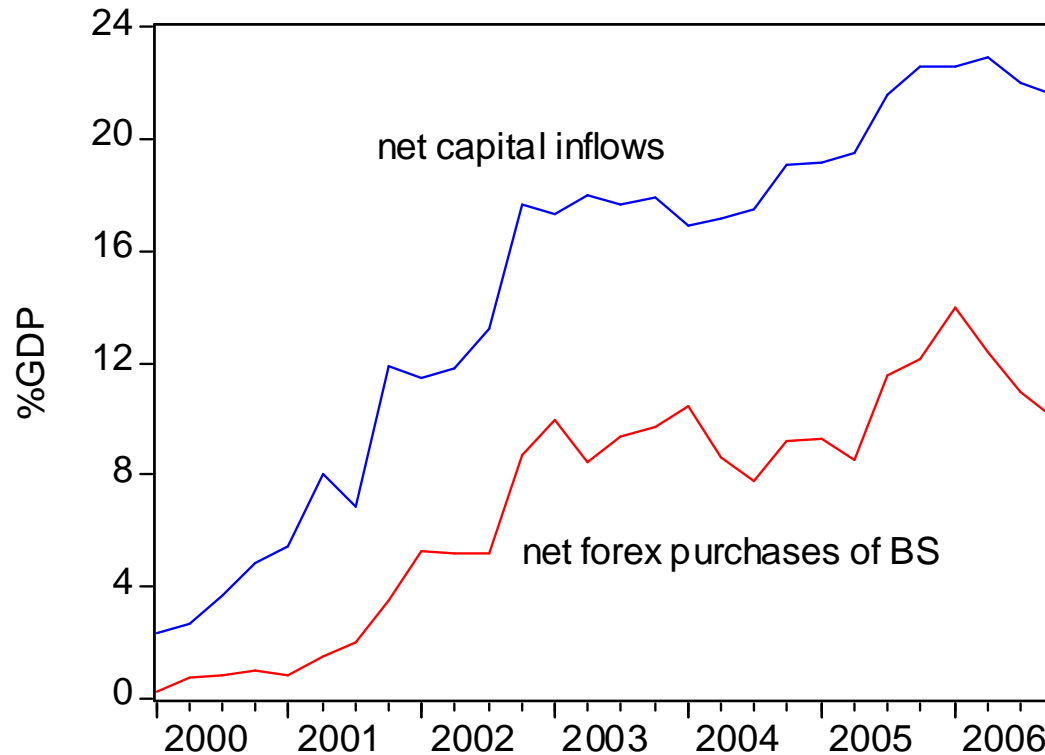
- Note: cumulative net flows after 1999/IV
- Source: Statistical Office of the Republic of Slovenia; "Bulletin", Bank of Slovenia; "Overview of policy measures", Bank of Slovenia; own calculations

Cumulative (BS) forex purchases
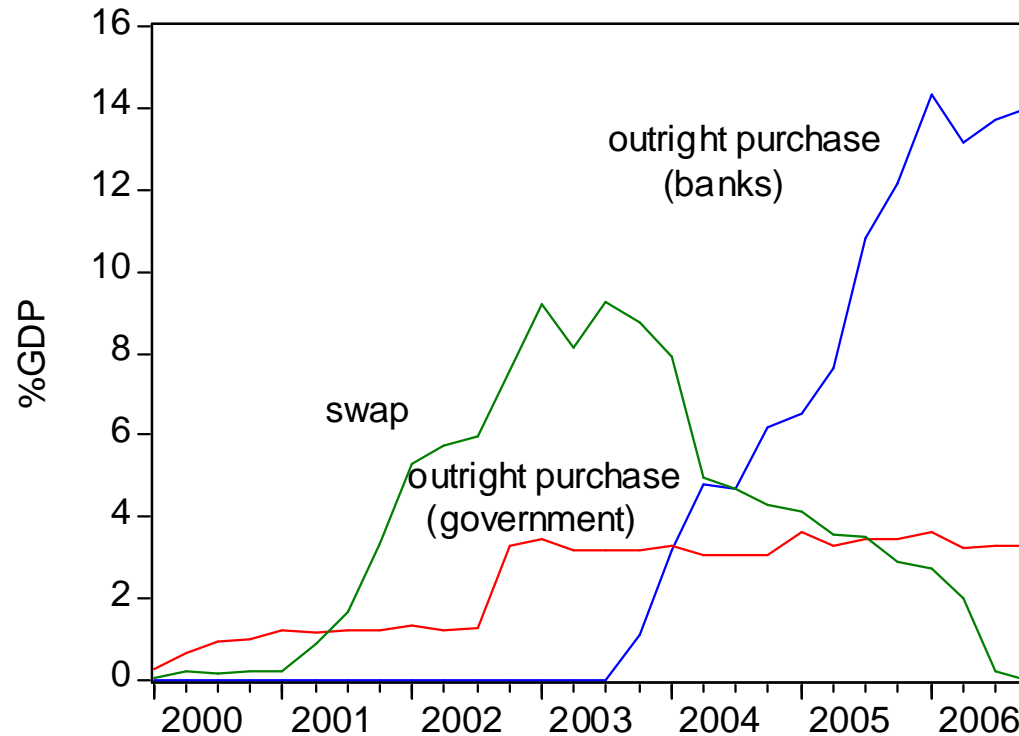
- Note: cumulative purchases after 1999/IV
- Source: Statistical Office of the Republic of Slovenia; "Bulletin", Bank of Slovenia; "Overview of policy measures", Bank of Slovenia; own calculations

Cumulative (BS) forex sales

- Note: cumulative sales after 1999/IV
- Source: Statistical Office of the Republic of Slovenia; "Bulletin", Bank of Slovenia; "Overview of policy measures", Bank of Slovenia; own calculations
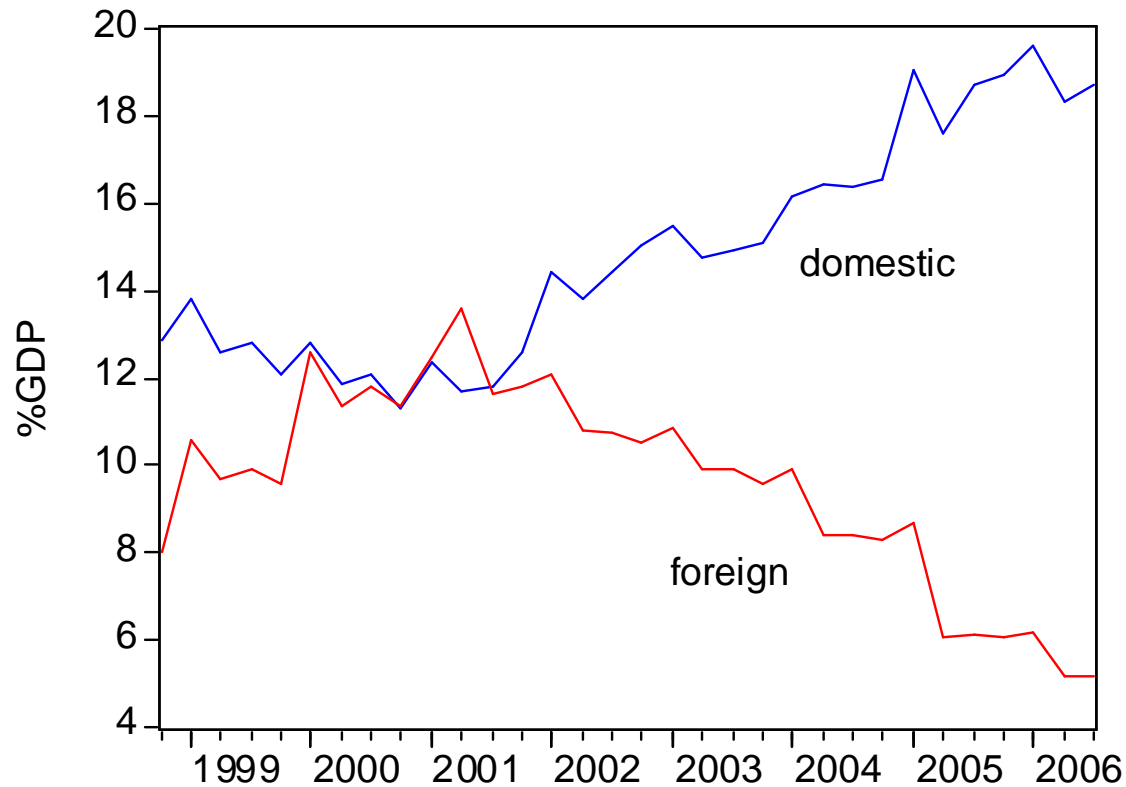
Sterilization of money supply increase
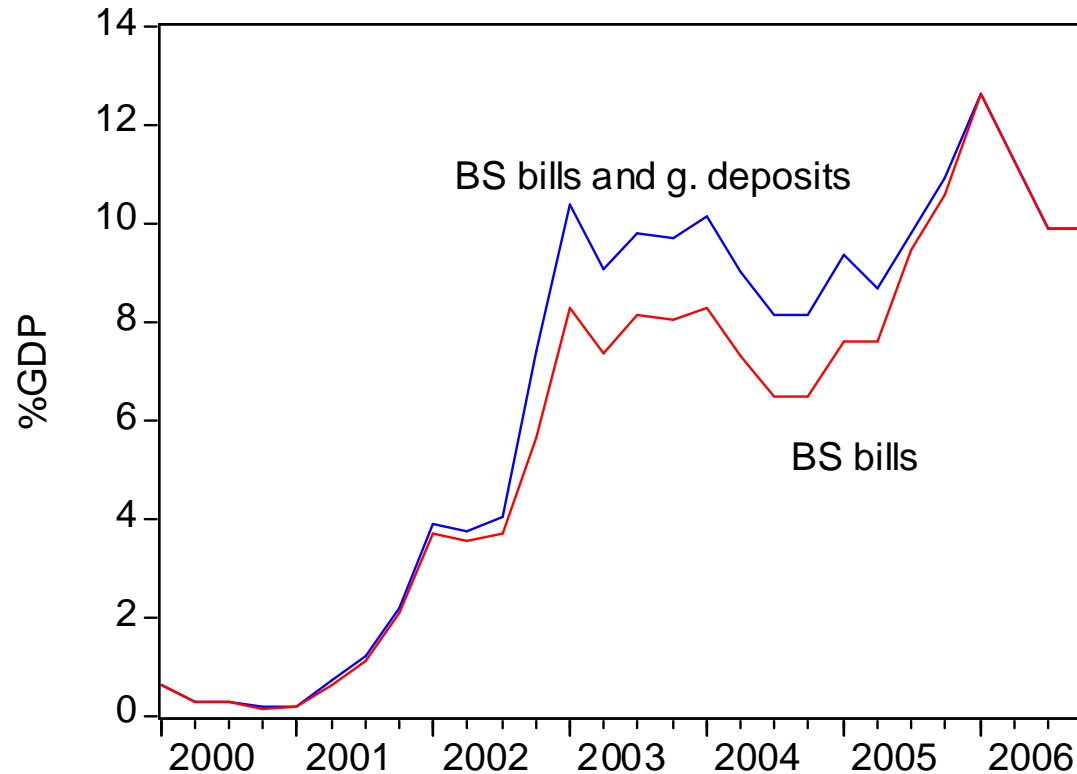
- Note: instruments in domestic currency (tolar)
- Source: Statistical Office of the Republic of Slovenia; "Bulletin", Bank of Slovenia; own calculations

General government debt

II. MONETARY STANCE AND ECONOMIC PERFORMANCE

- MONETARY POLICY STANCE
- ECONOMIC PERFORMANCE

MONETARY POLICY STANCE

- Ex post real interest rate was stable at around 4.5%
- UIP stayed around 1.5
- Variability of UIP dropped to almost zero.
- Variability of the real exchange rate didn't drop.
- Base money decreased as a percentage of GDP

Level of real interest rate and UIP
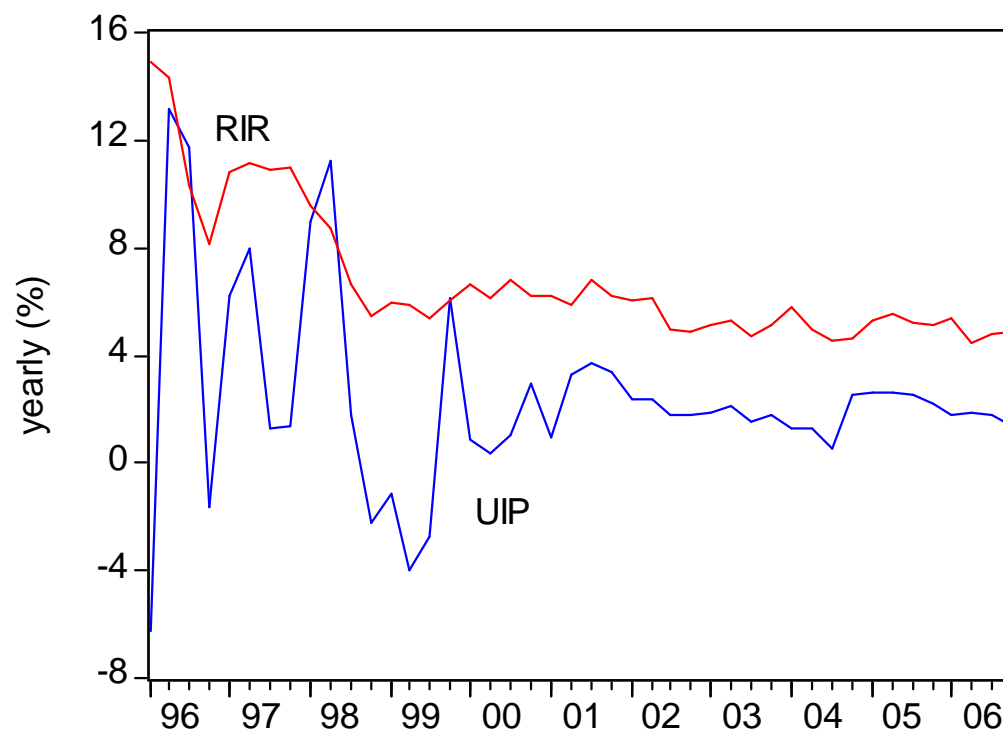
- Note: RIR real interest rate for short-term tolar credits in percentages, calculated as $100*((1+n)/(1+\pi)^{**4} -1)$; UIP uncovered interest parity in percentages, calculated as $100*(1+n-(1+n_f)*(1+rER)^{**4})$ where n = nominal tolar lending interest rate, n_f = nominal forex lending interest rate, π = quarterly inflation rate, rER = quarterly rate of the exchange rate
- Source: "Bulletin", Bank of Slovenia; own calculations

Variability of UIP and real exchange rate
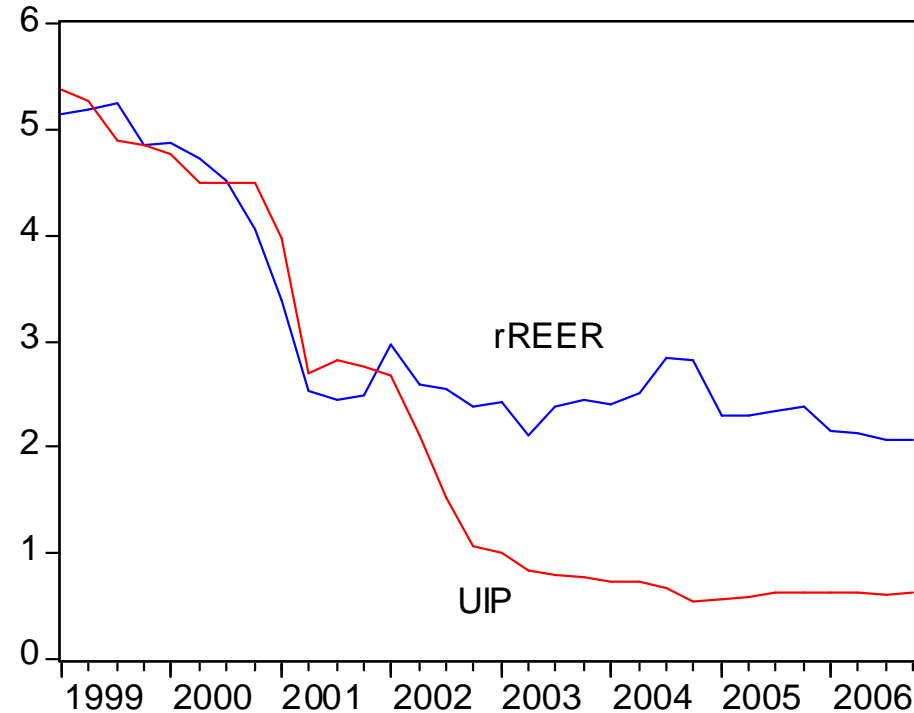
- Note: variance for three-year moving windows; rREER quarterly growth rate of real effective exchange rate on a yearly level (in percentages); UIP uncovered interest parity on a yearly level (in percentages), calculated as $100*(1+n-(1+n_f)*(1+rER)^{**4})$ where n = nominal tolar interest rate, n_f = nominal forex interest rate, rER = quarterly rate of increase of exchange rate.
- Source: "Bulletin", Bank of Slovenia; own calculations

Base money
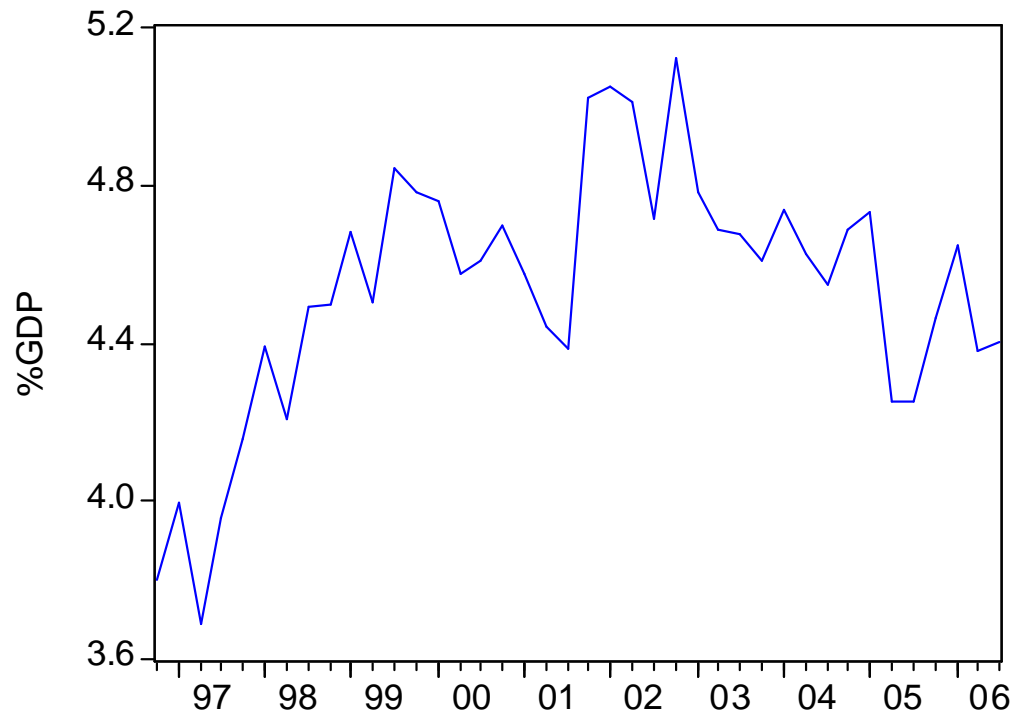
- Source: Statistical Office of the Republic of Slovenia; "Bulletin", Bank of Slovenia; own calculations
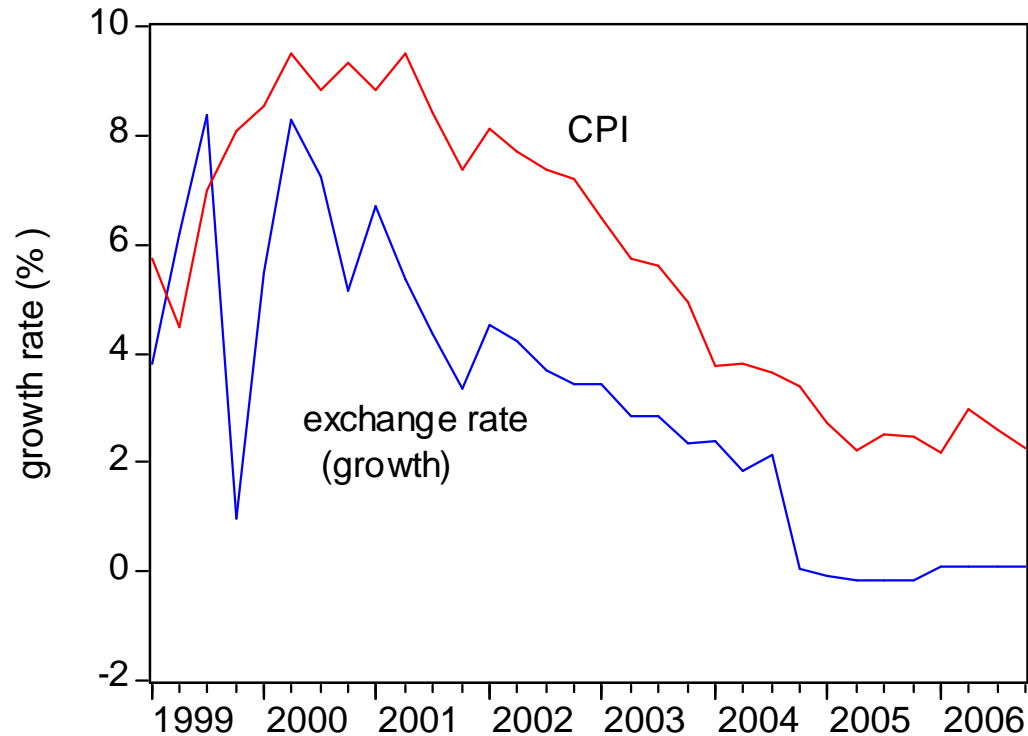
Broad money (M2)
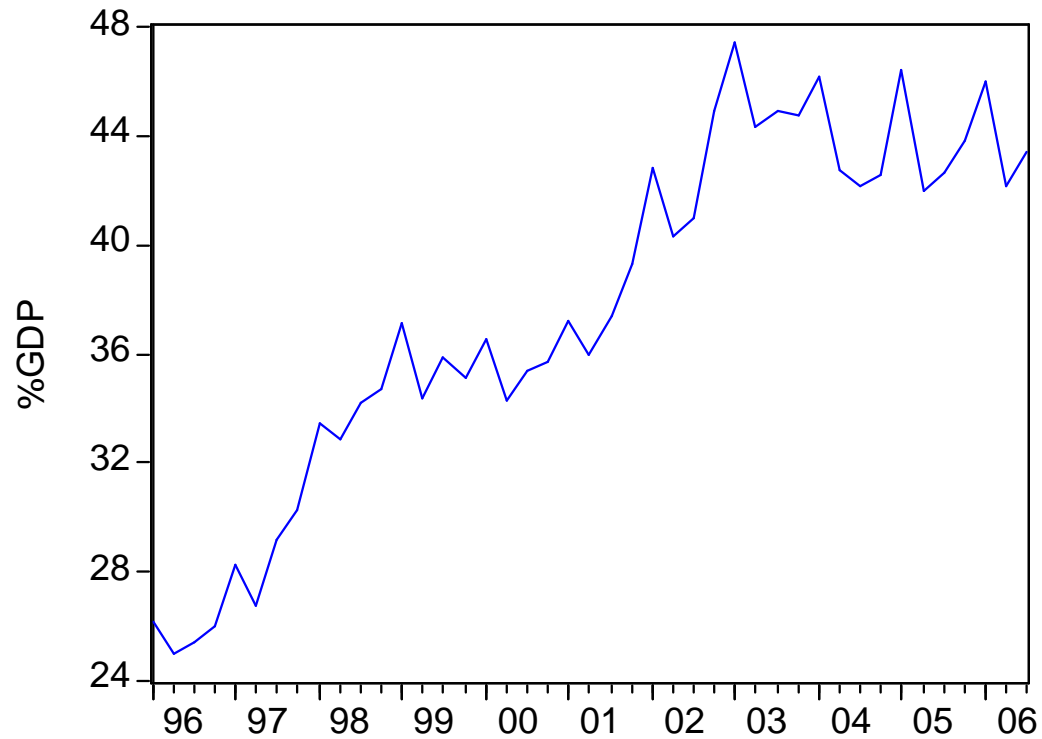
- Source: Statistical Office of the Republic of Slovenia; "Bulletin", Bank of Slovenia; own calculations

ECONOMIC PERFORMANCE

- Inflation was uniformly abating from 9% in 2000/IV to 2.5% in 2005/II
- Inflation of tradables and nontradables dropped to lower dynamics simultaneously – relative prices didn't deteriorate additionally
- Volatility of nominal exchange rate decreased considerably
- Interest rates converged toward interest rates in the euro area (adjusted for risk premium)
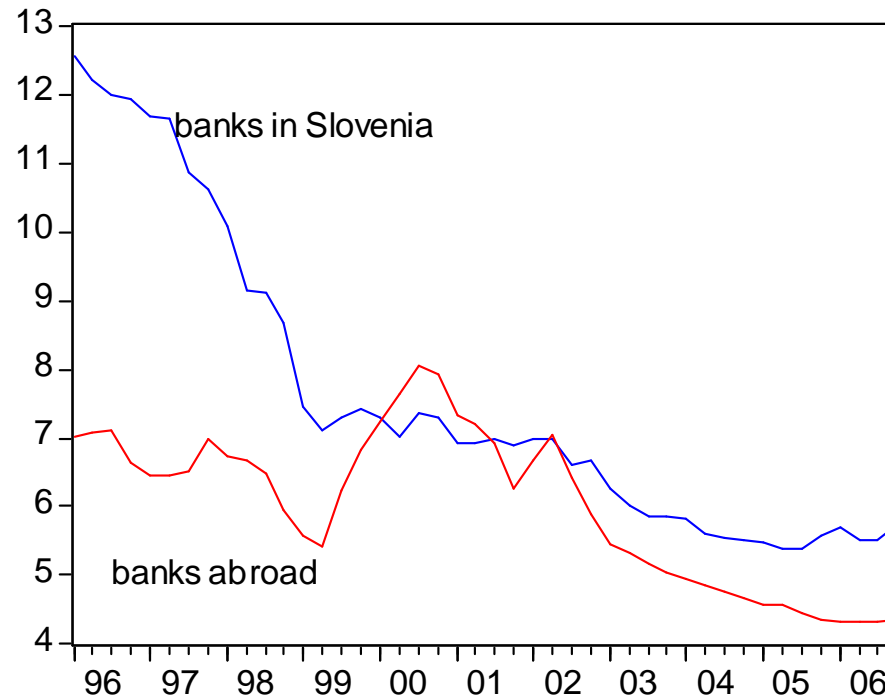
Convergence of exchange rate and inflation

- Note: quarterly growth rate of exchange rate on a yearly level; CPI increase in quarter-over-quarter in the previous year
- Source: Statistical Office of the Republic of Slovenia; "Bulletin", Bank of Slovenia; own calculations

Convergence of forex lending rates

- Note: short term lending rates for forex credits to enterprises
- Source: Statistical Office of the Republic of Slovenia; "Bulletin", Bank of Slovenia; own calculations

Convergence of relative prices
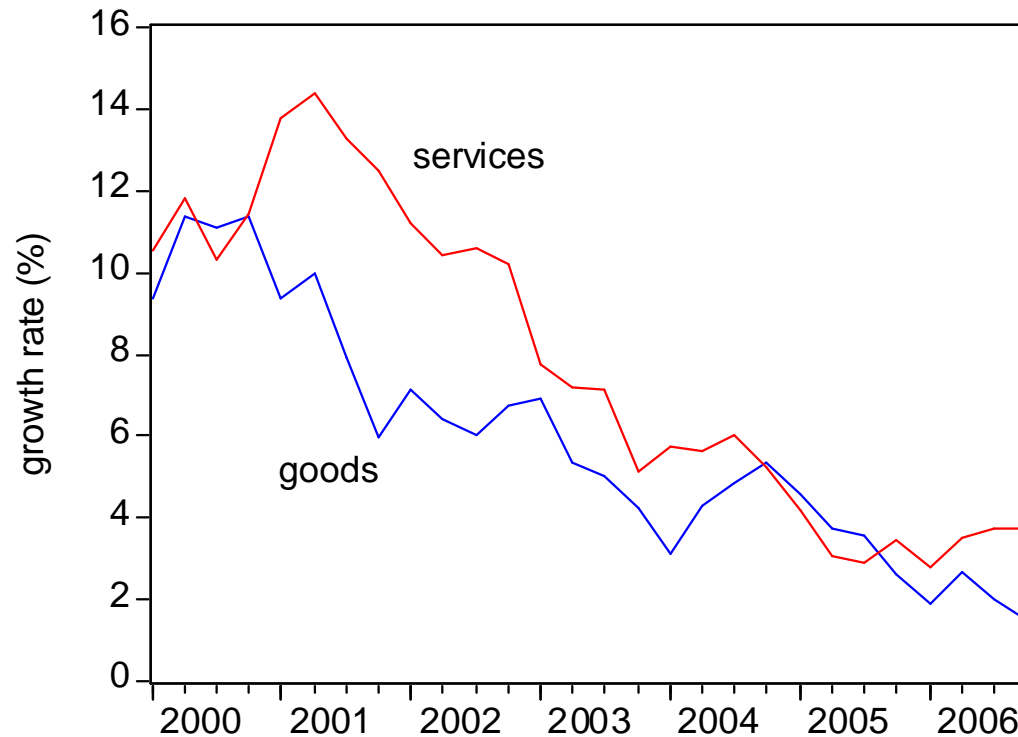
- Note: price increases in quarter-over-quarter in the previous year
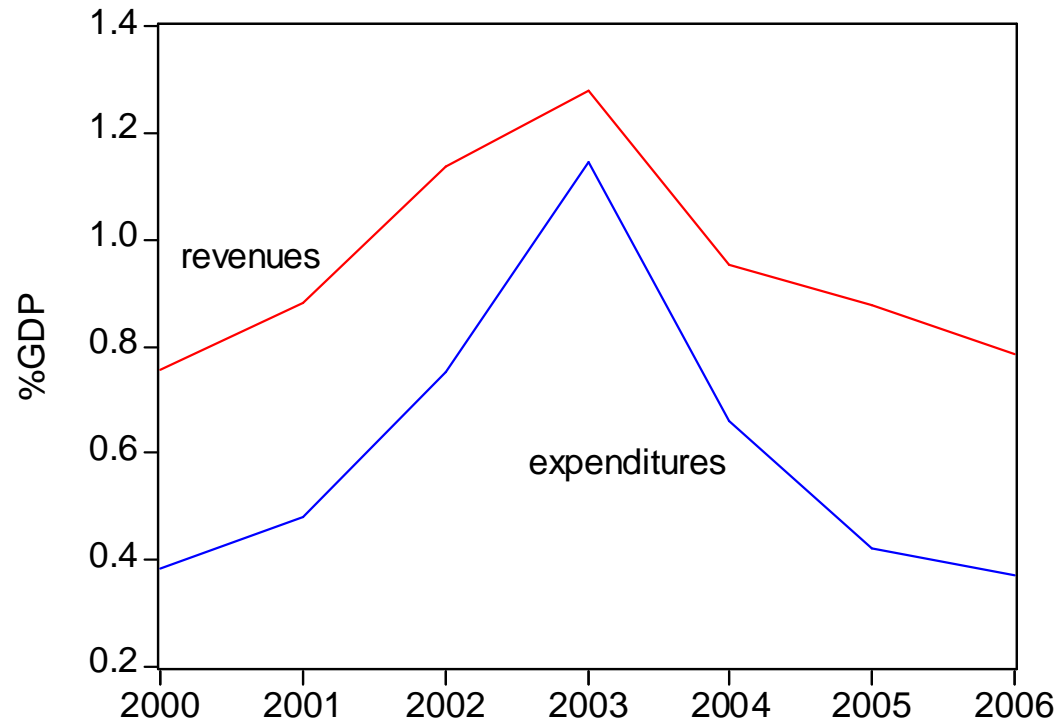- Source: Statistical Office of the Republic of Slovenia; "Bulletin", Bank of Slovenia; own calculations

III. COSTS OF THE MONETARY POLICY

- CENTRAL BANK INCOME STATEMENT
- BUSINESS BANK OPPORTUNITY COSTS

BANK OF SLOVENIA INCOME STATEMENT IMPLICATIONS

- Interest balance of BS exceeded 0.12% GDP in all years after 2000

- Interest revenues of BS were between 0.75% GDP and 1.3% GDP

- Interest expenditures of BS were between 0.37% GDP and 1.12% GDP

Bank of Slovenia interest balance

- Source: Statistical Office of the Republic of Slovenia; "Bulletin", Bank of Slovenia; Income statement of Bank of Slovenia; own calculations

Bank of Slovenia interest expenditures
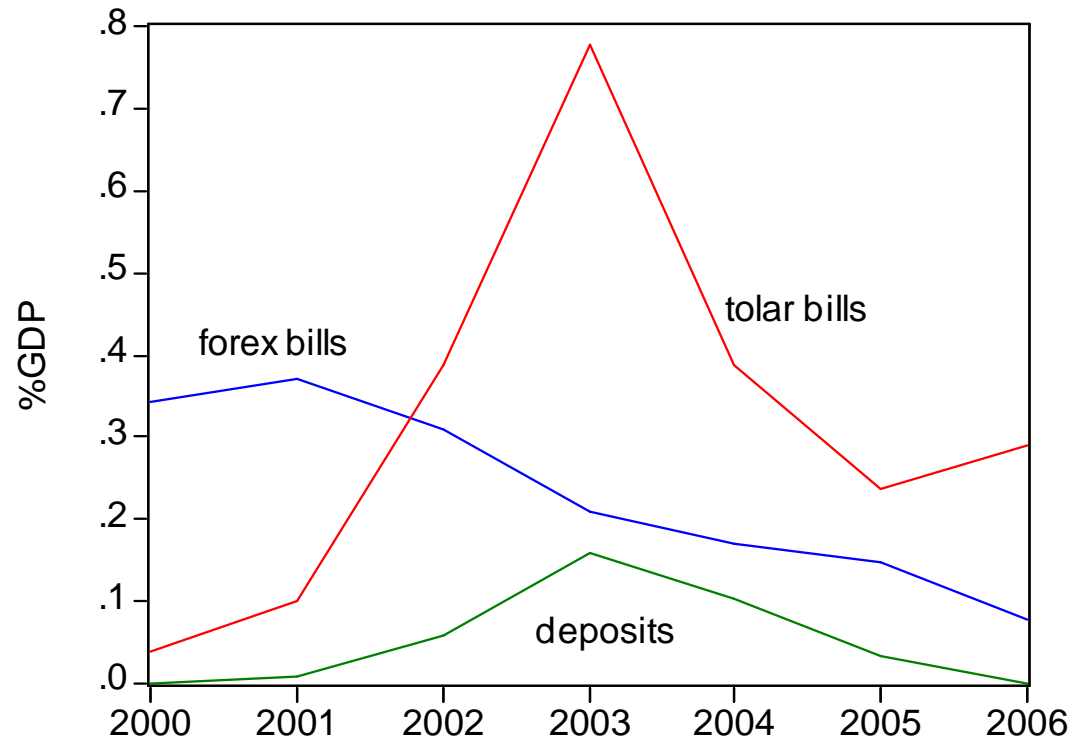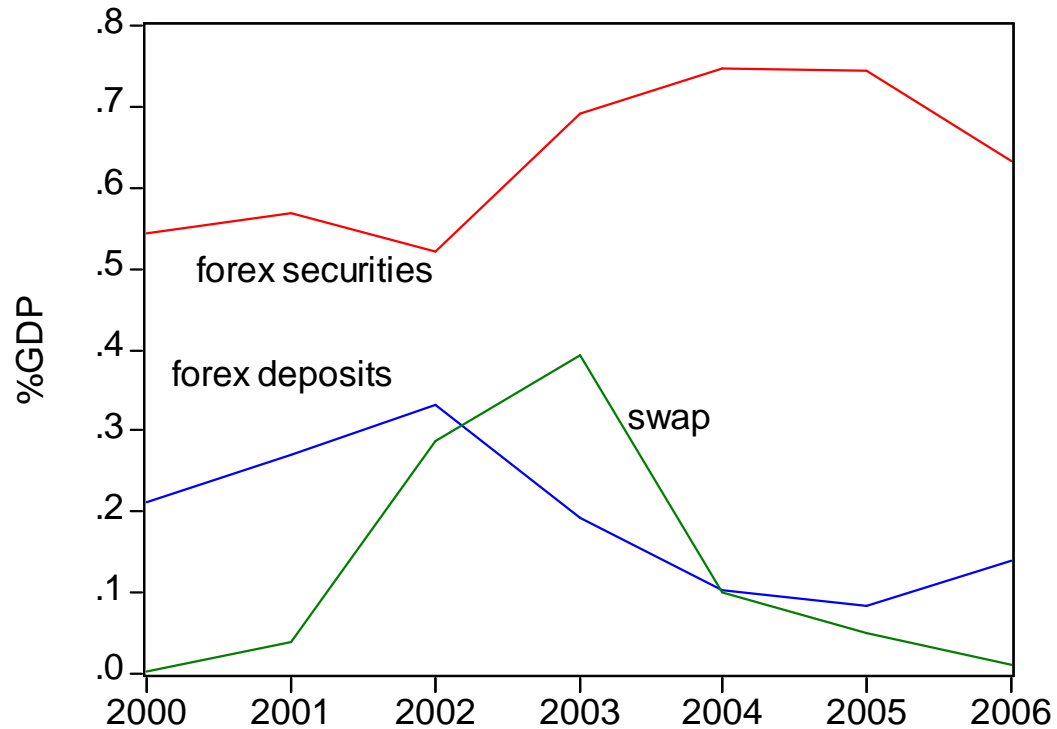

- Source: Statistical Office of the Republic of Slovenia; "Bulletin", Bank of Slovenia; Income statement of Bank of Slovenia; own calculations

Bank of Slovenia interest revenues

- Source: Statistical Office of the Republic of Slovenia; "Bulletin", Bank of Slovenia; Income statement of Bank of Slovenia; own calculations

BUSINESS BANK OPPORTUNITY COSTS

- Net costs of swap operations didn't cause arbitrage between tolar and forex lending instruments

- Except in the ERMII phase, the net costs of swap operations didn't cause arbitrage between tolar and forex BS bills

- In the ERMII phase, swap rates were too high

Swap opportunity effects on BS bills
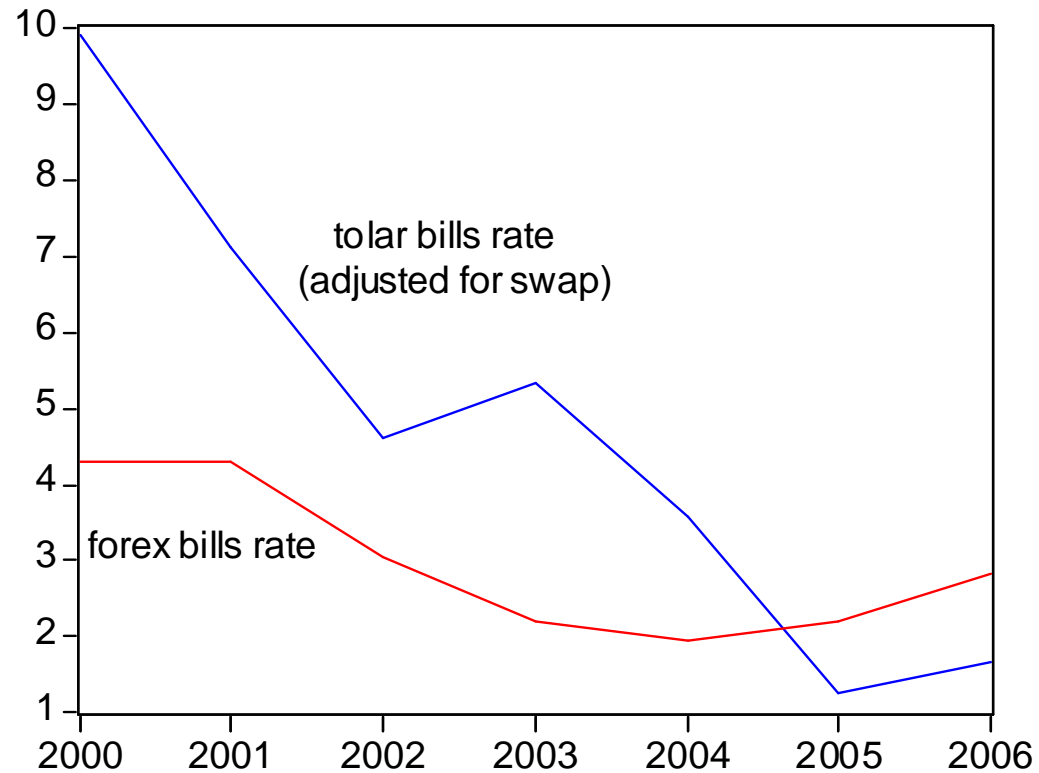
- Note: interest rates on BS bills; interest rate on tolar bills adjusted for costs of swap
- Source: "Bulletin", Bank of Slovenia; "Overview of policy measures", Bank of Slovenia; own calculations

Swap opportunity effects on business bank lending rates
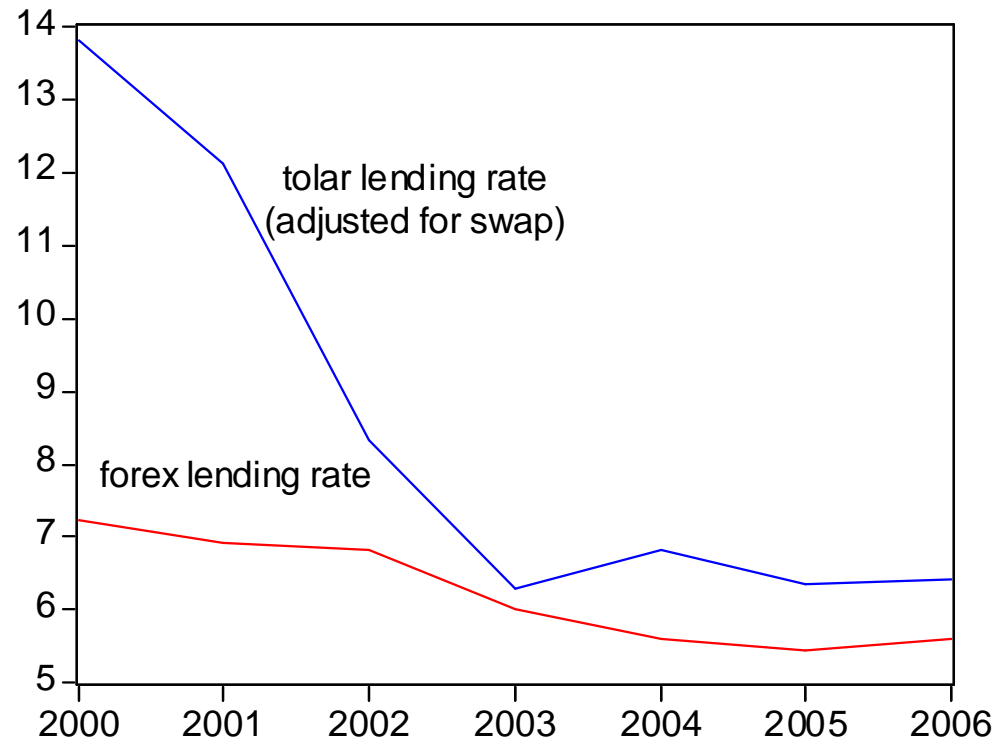
- Note: lending interest rates of business banks; interest rate on tolar lending adjusted for costs of swap
- Source: "Bulletin", Bank of Slovenia; "Overview of policy measures", Bank of Slovenia; own calculations

IV. LESSONS

- STRATEGY LESSONS
- IMPLEMENTATION LESSONS

STRATEGY LESSONS

- Inflation was squeezed in an undistortionary manner by controlling real interest rates and by mitigating growth of regulated prices
- In the open capital account environment, targeting (real) lending interest rates could be implemented by exchange rate closing (risk adjusted) UIP
- General government help in sterilization and mitigation of regulated prices was important
- Central bank costs of controlling real interest rates were managable

IMPLEMENTATION LESSONS

- Monetary policy setup enabling closing UIP consisted of:
  - High enough accumulated stock of swap
  - Exchange rate signaling
- Accumulated swap stock in business bank balance sheets diminished volatility of the exchange rate
- Swap rates had to be lower than the risk premium to enable efficient closing of UIP (to prevent arbitrage between forex and domestic currency instruments)
- Including off-balance swap items in the maturity ladder would have diminshed free rider behavior of smaller banks on the gross forex market

References

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- Bole, V., 2003, "Managed Floating as a Second Best Option; Lessons from Slovenia", paper presented at the conference Managed Floating – An Alternative to the Two Corner Solutions, CEPR/Deutsche Bank, Kronberg, <u>www.cepr.org/MEETS/WKCN/1/1545/papers</u>

- Bole, V. and D. Mramor, 2006, "Soft Landing in the ERMII: Lessons from Slovenia", in Prasnikar,J. (ed.), <u>Medium Sized Firms and Economic Growth</u>, Nova Science Publishers.

- IMF, 2004, "Inflation in Slovenia: Recent Developments and Outlook", in <u>Republic of Slovenia – Staff Report for the 2004 Article IV Consultation: Selected Issues.</u>