



MAGYAR NEMZETI BANK



„Micro” and „macro”
*(The case of FX lending in Hungary: blessing or
curse ?)*

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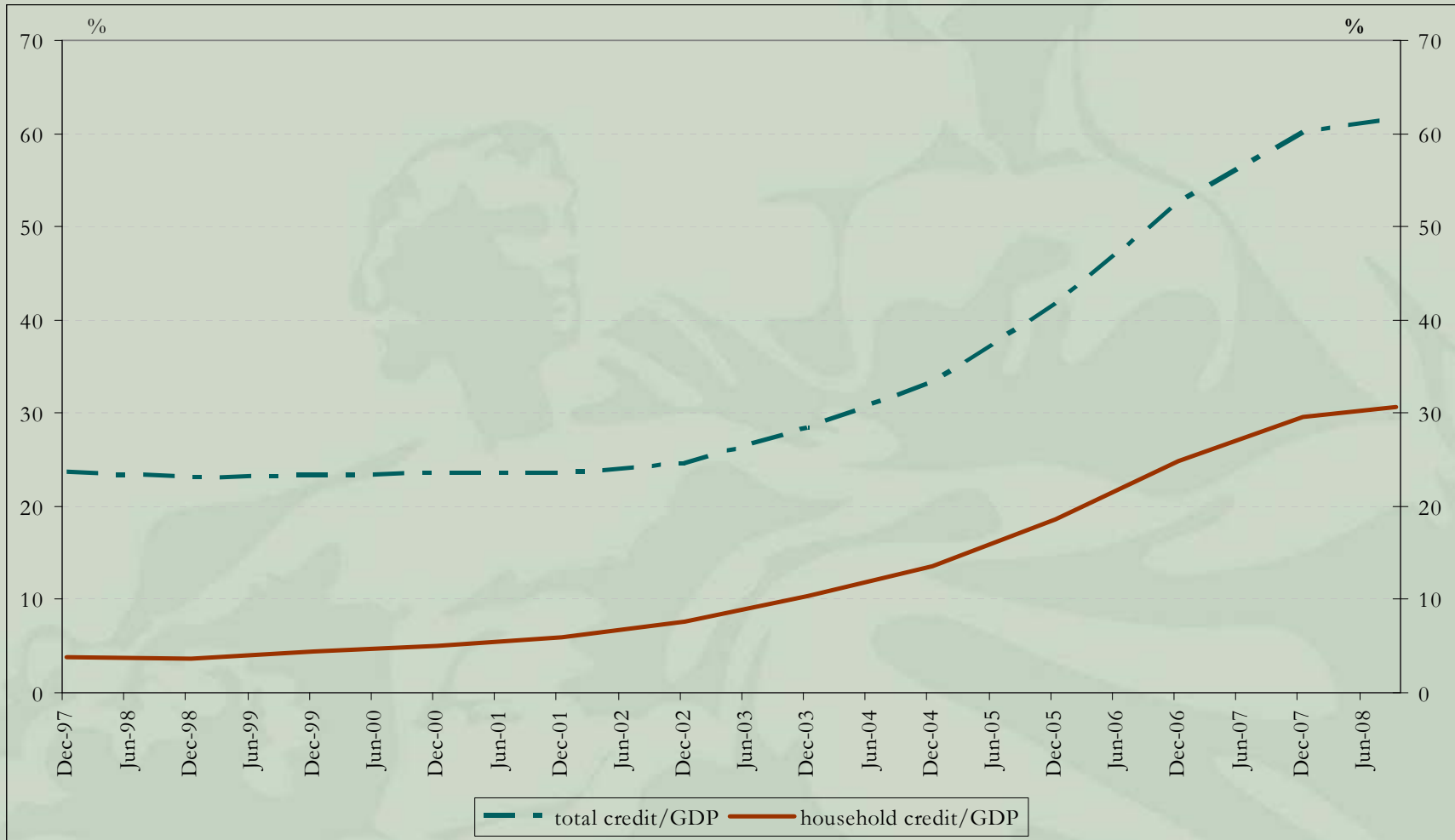
Questions to be answered

- Whether fx based lending was a rational decision from micro-economic point of view ?
- Whether fx based lending was a rational business model for the banks ?
- What was the „primary mover” of the macro imbalances?
- Is it possible to formulate any general recommendation for the future ?

1. Stylized facts about retail FX lending

Retail lending „boom” (1)

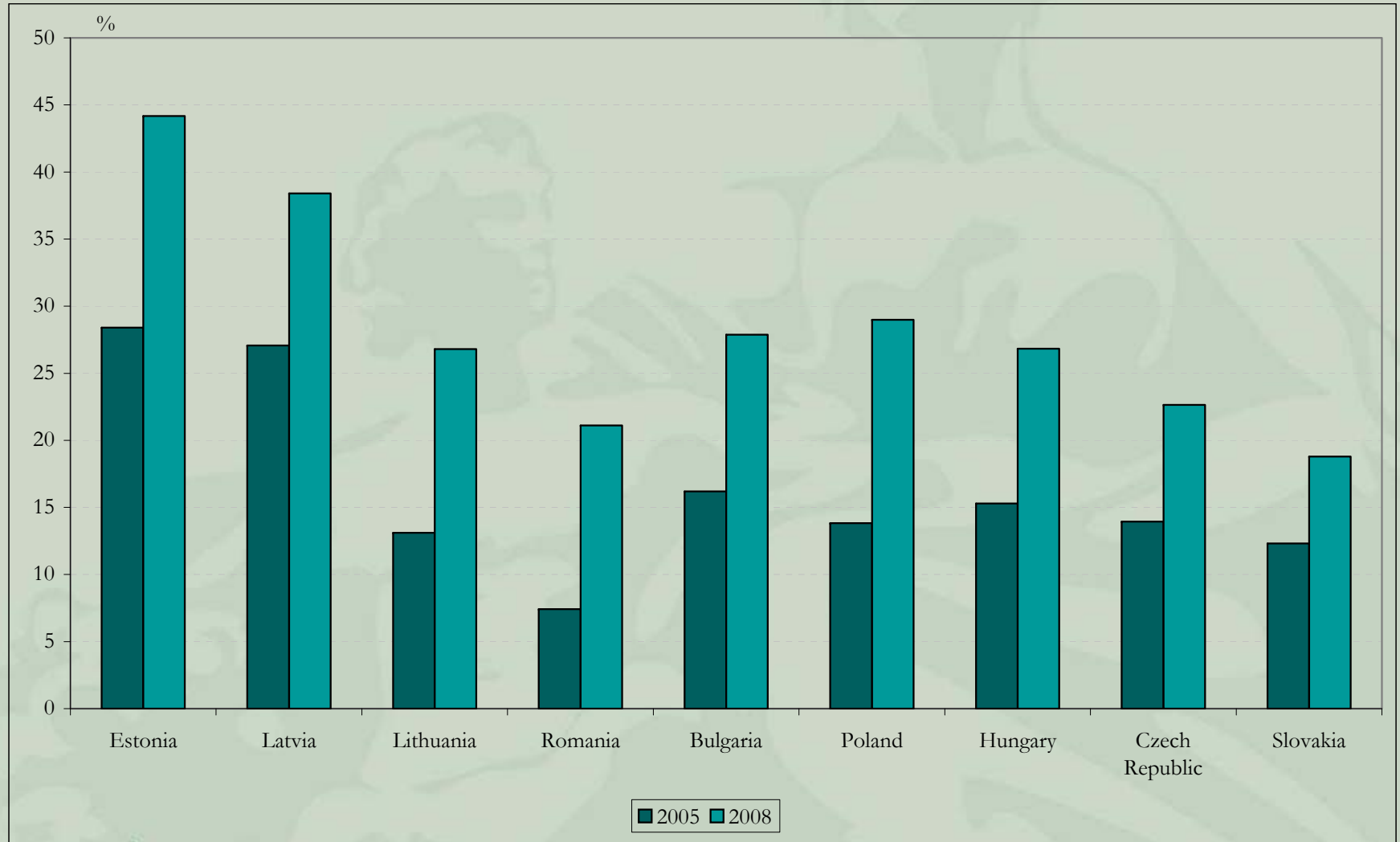
(Bank credit-to-GDP, average of selected NMSs)



Note: Unweighted average of NMS for which data was available for the whole 1997-2008 period (Czech Republic, Estonia, Hungary, Latvia, Lithuania and Poland)

Retail lending „boom” (2)

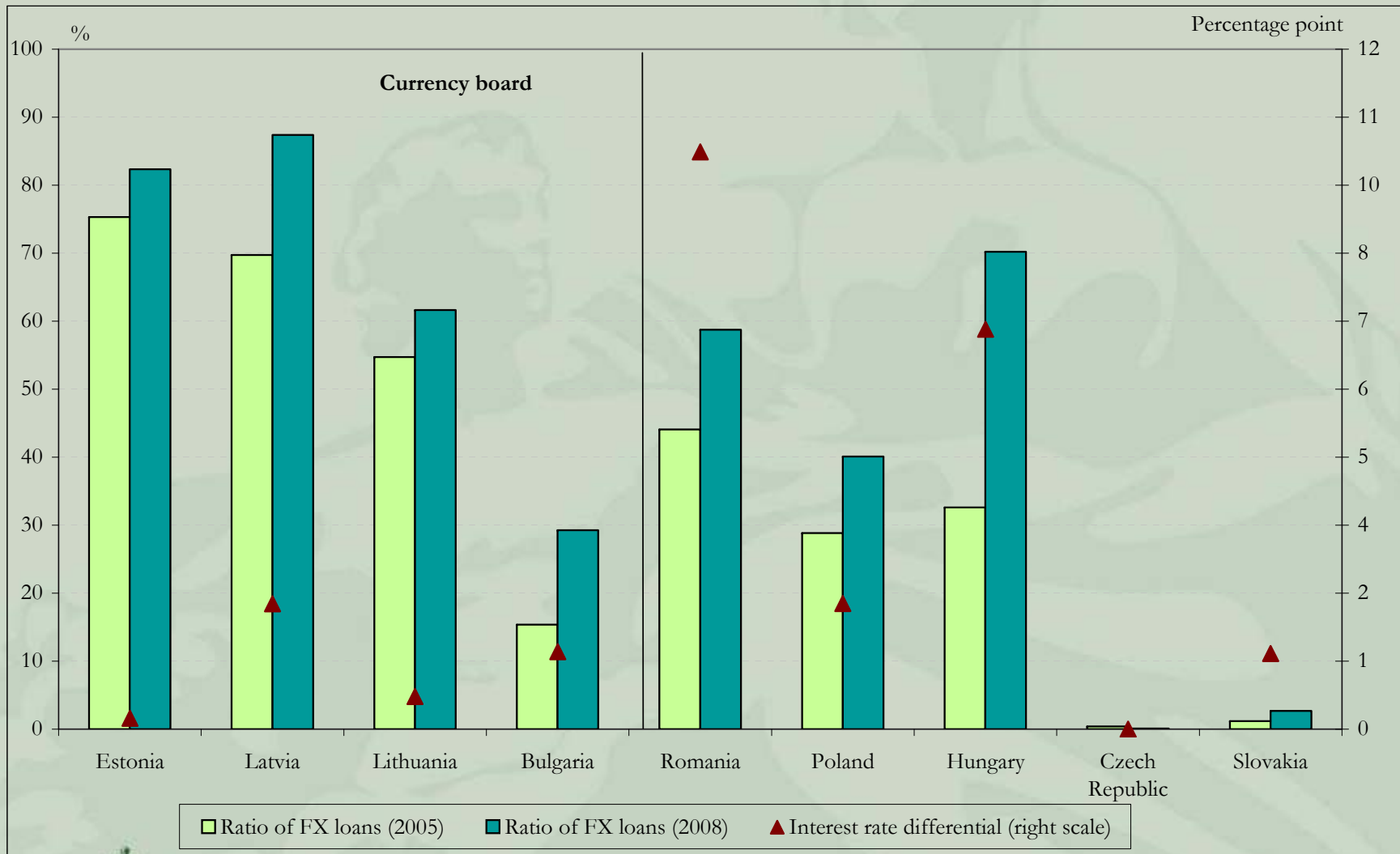
(Domestic banks' retail loans to GDP)



Source: Central banks.

FX based retail lending (1)

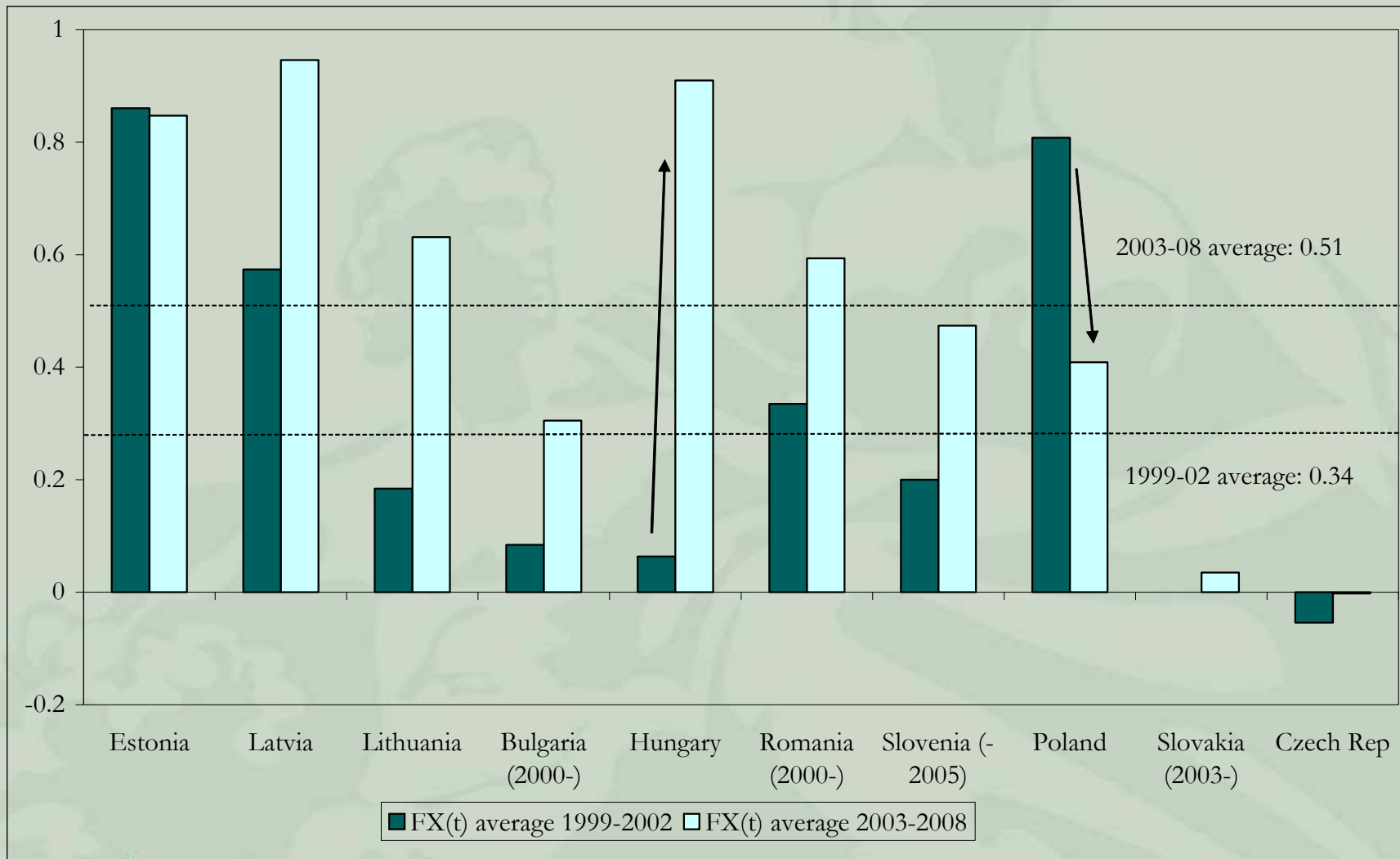
(FX loans to total retail loans in the CEE countries banking sector)



Note: Interest rate differential = domestic 3-month interbank rate – 3-month euribor (average for 2005-2008 period)

FX based retail lending (2)

(The net change of FX household credit to the net change of household loans in the CEE)



Source: Central banks.

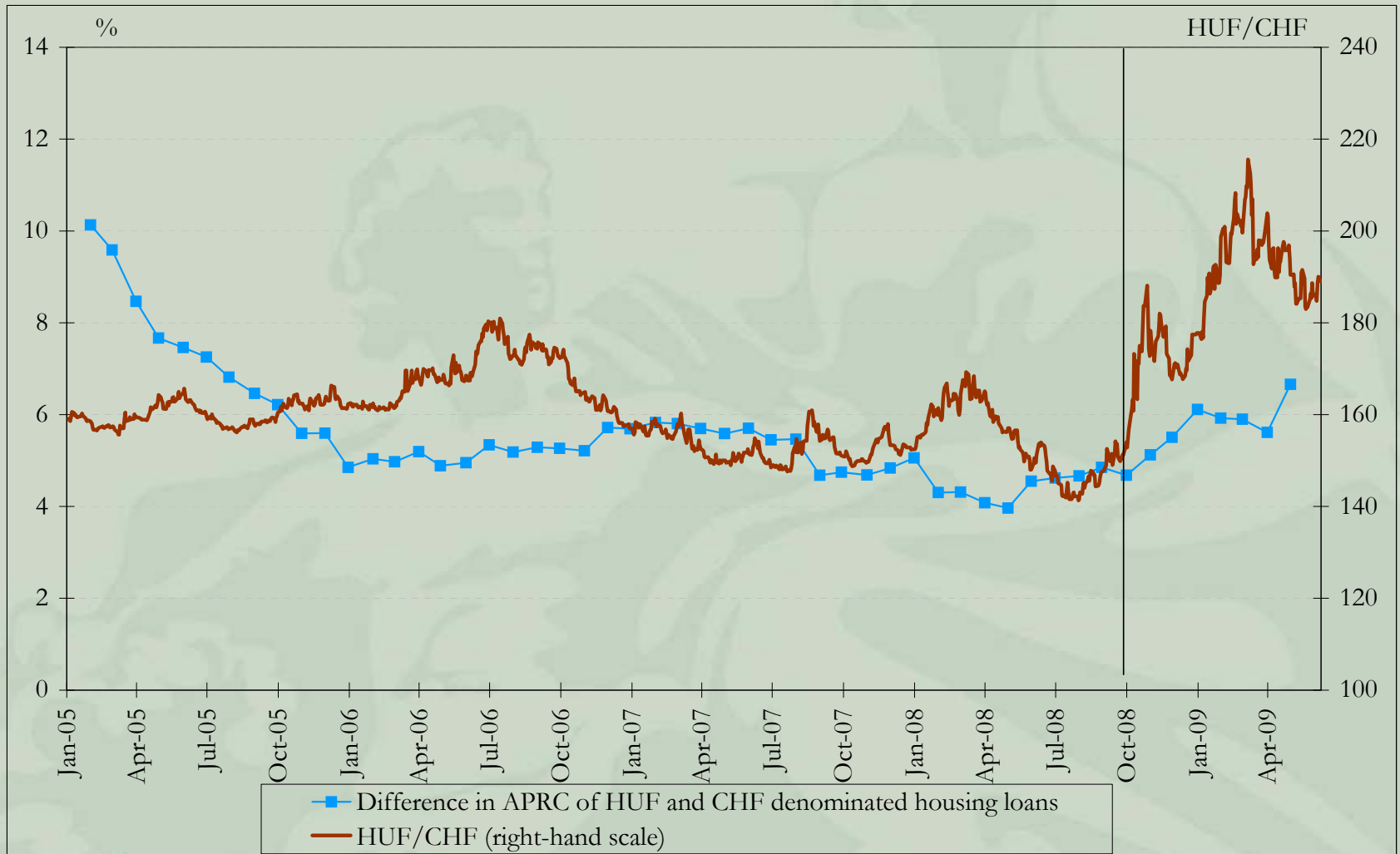
2. Micro-level decisions

2.1. Households

- **Short planning horizon:** expected access to the eurozone
- **Smoothing consumption path:** liquidity constraints seem to diminish
- **Theoretically two types:**
 - „risk aware” households: decisions based on UIP
 - „non risk aware” households: choose lower credit installment independently of the s of the interest rate differential.
- **If FX risk is negligible** (currency board, floating with a band, hidden assumption: quick accession to the Eurozone) - households always choose the „cheaper” FX credit.
Two types:
 - „Planners”: fixed amount of loan – lower installment
 - „Gamblers”: fixed installment – higher amount of loan (average fx loans exceed average huf loans)
- **Collateral:**
 - Future income stream (steady growth)
 - Home equity (no bubble?)

FX regime: floating with band

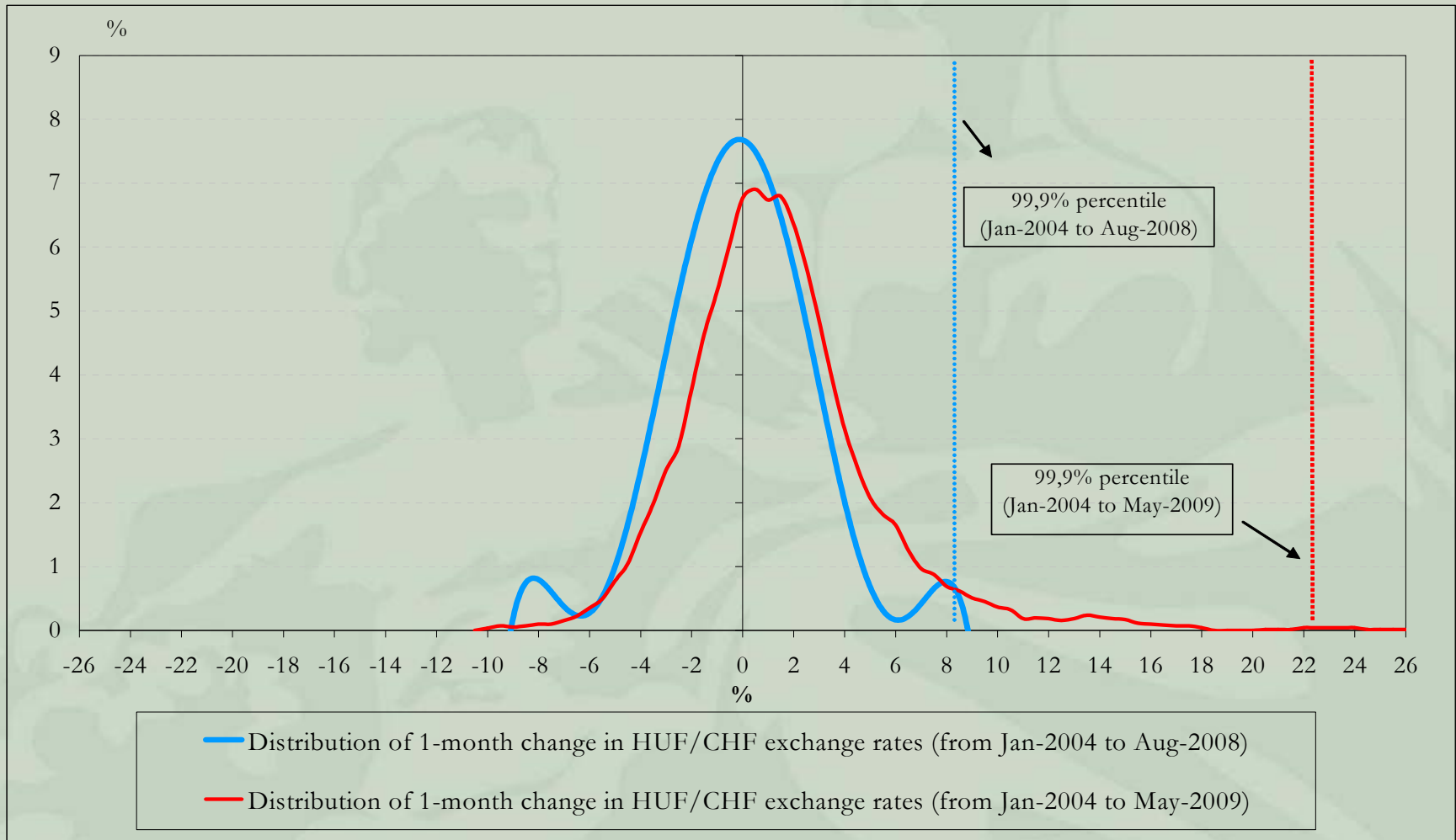
(Development of HUF/CHF exchange rate and differences in annualised percentage rate of charge)



Source: MNB.

FX regime: tail events before and after Lehmann

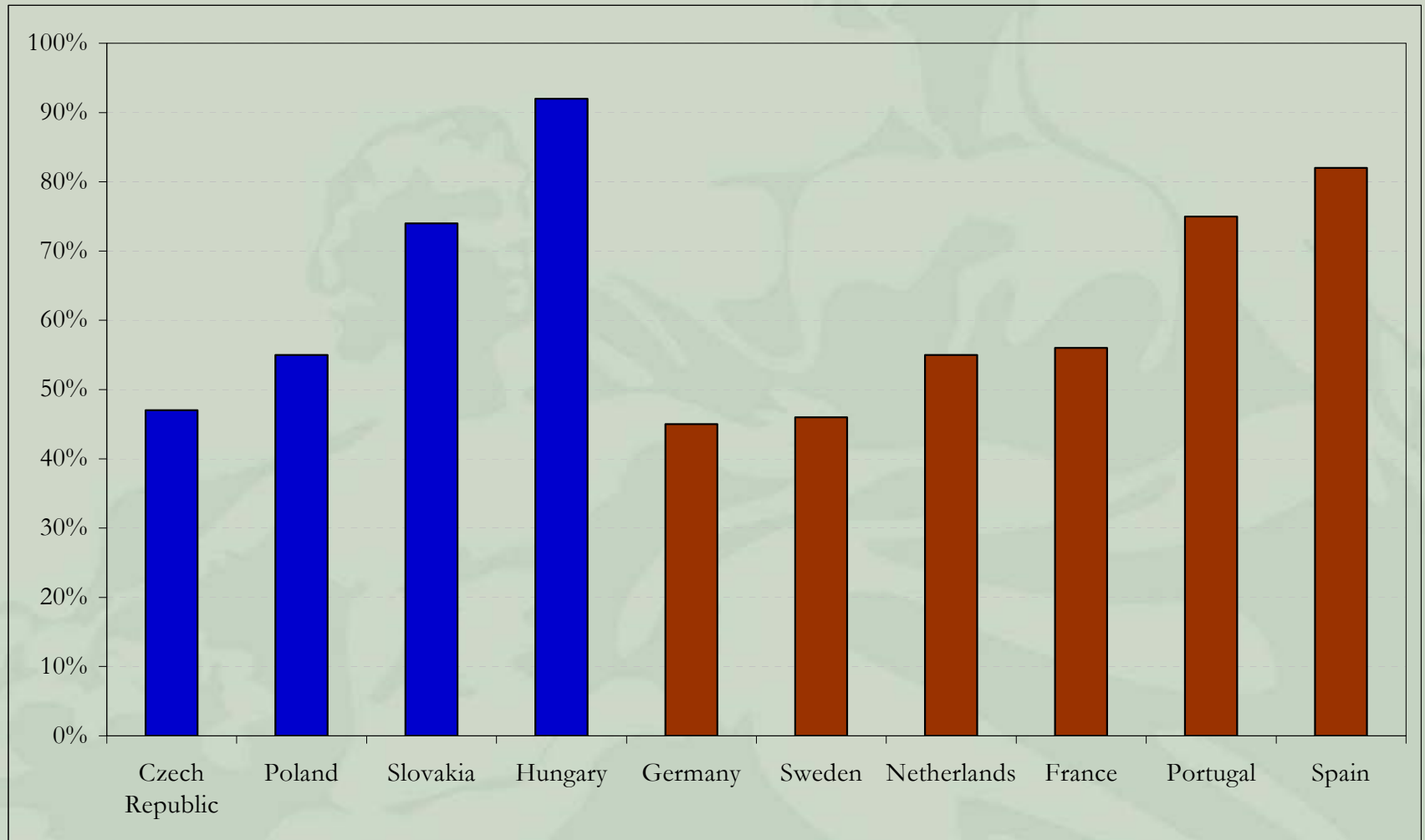
(Distribution of 1-month changes in the HUF/CHF exchange rates)



Source: MNB.

Collateral: home ownership

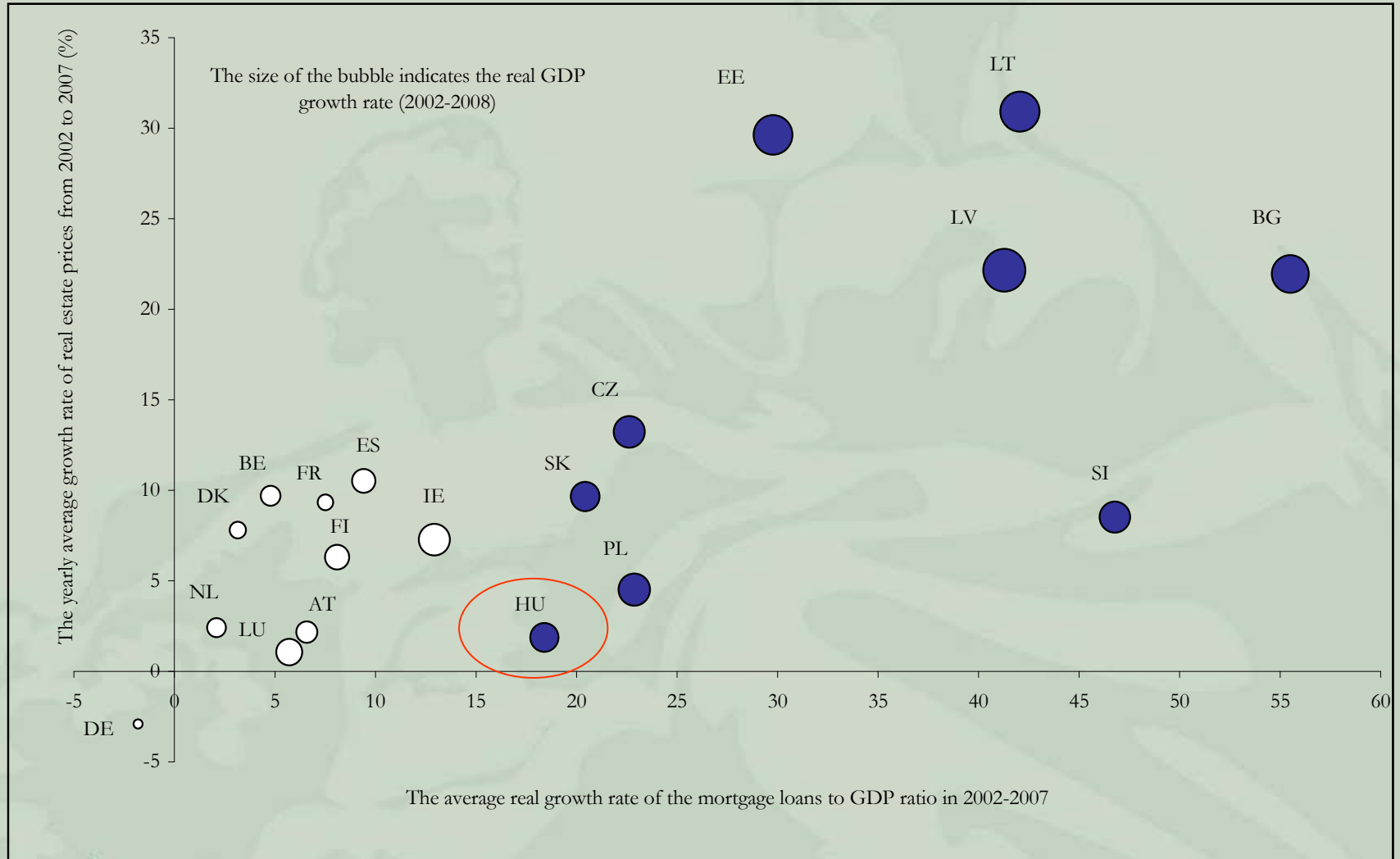
(Real estate ownership of households in 2000)



Source: Central Banks' websites.

Collateral: bubbles and lack of bubbles

(Growth rates of real estate prices and mortgage loans in the region)



Source: Central banks.

2.2. Banks: a kind of subprime lending?

- **Risk-based competition**

- Loosening credit conditions – increasing LTV ratios, increasing monthly debt service burden, loosening scoring requirements
- Shift in the denomination structure towards the riskier segments (HUF, EUR, CHF, then JPY)
- Increasing share of brokers (over 50%)

- **Funding of FX loans**

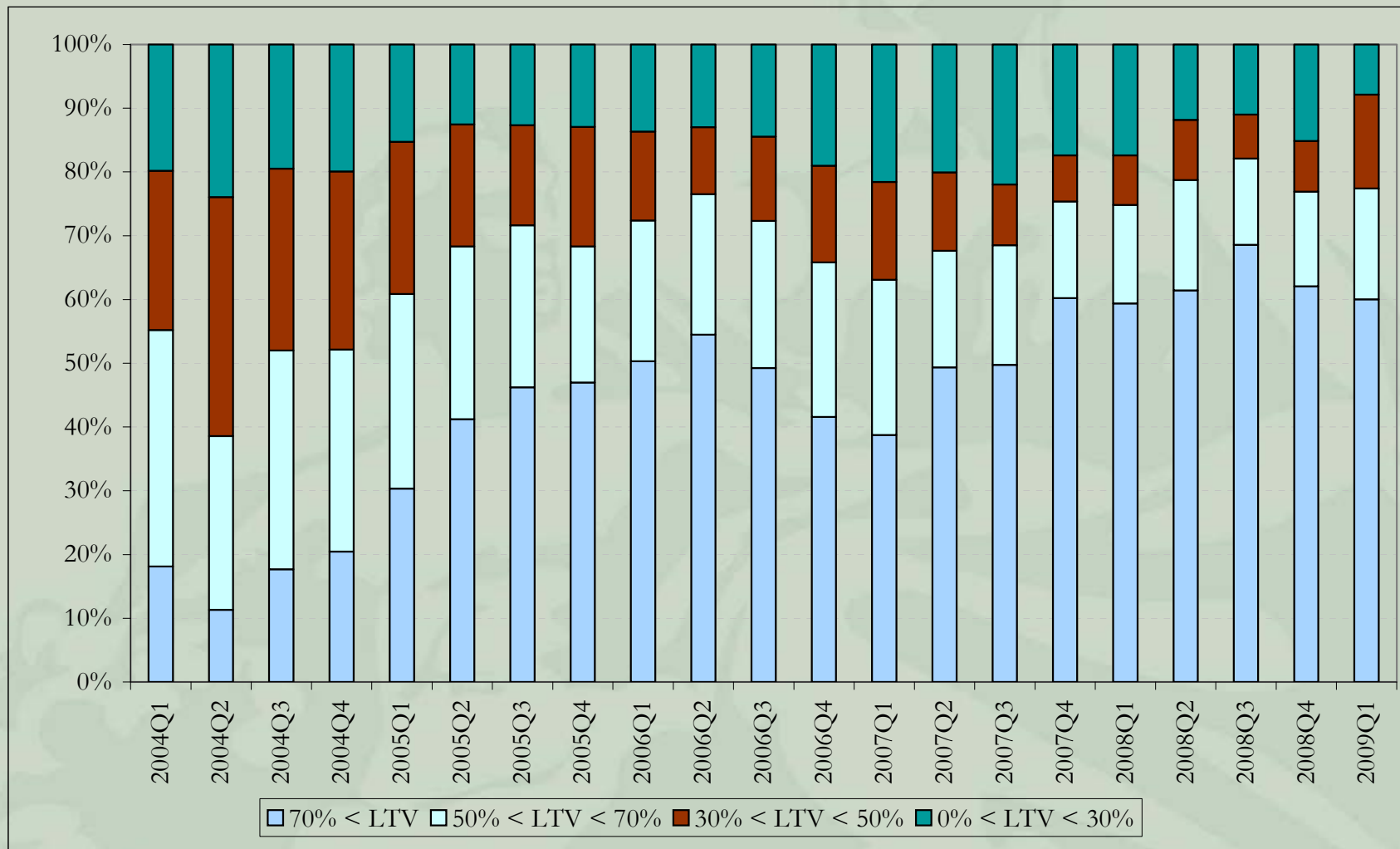
- easy access to capital markets – cheap liquidity!
- easy access to parent banks funds

- **Risk transfer**

- open balance sheet positions were closed by swap transactions
- off balance sheet banking! Risk transfer! Carry trade „burden” for households
- Market risk transformed into credit risk

Risk based competition: increasing loan-to-value ratios

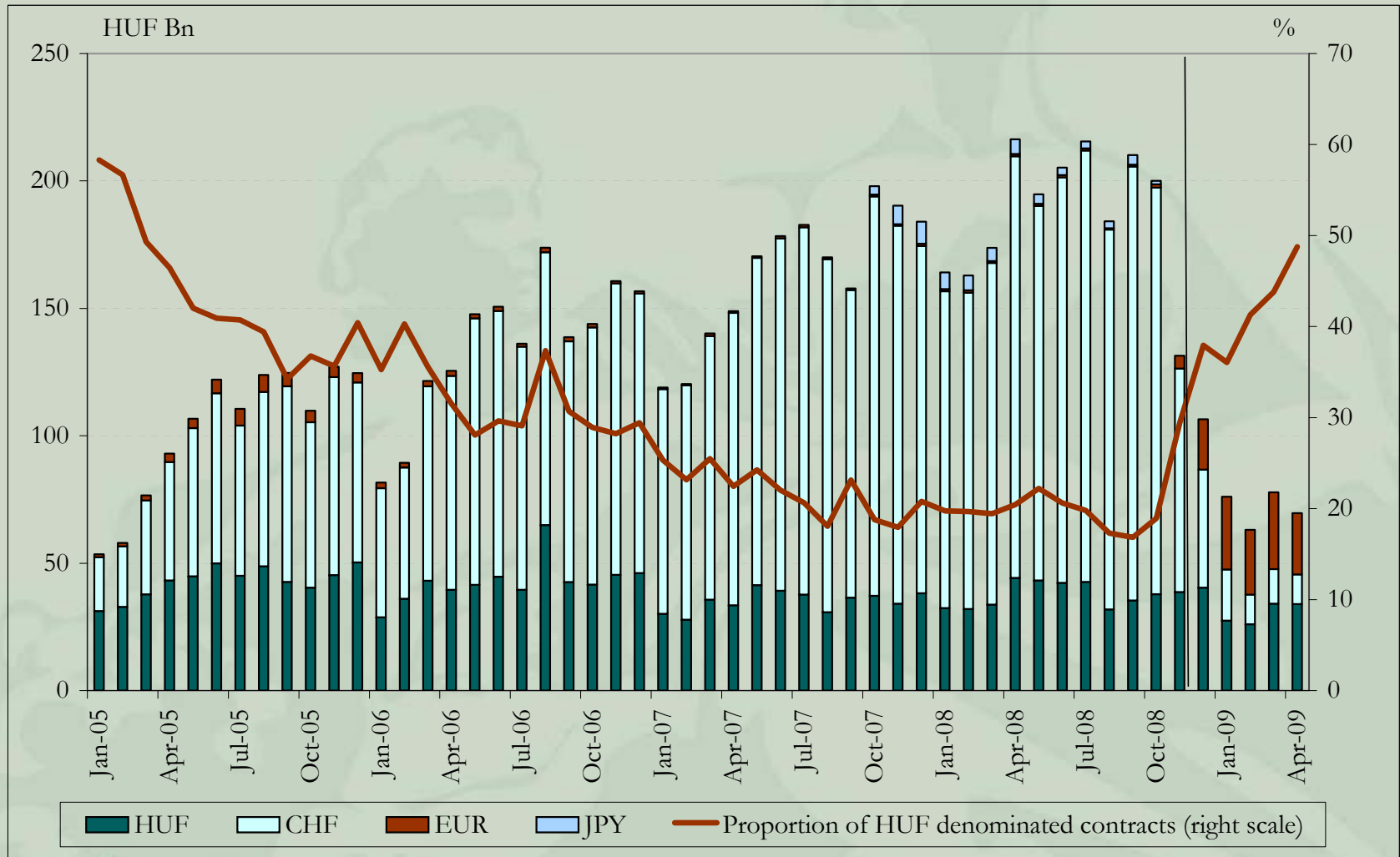
(Household new housing loan distribution by LTV)



Source: MNB.

Risk based competition: HUF _ EUR _ CHF _ JPY

(Composition of new credit contracts to households by their denomination)



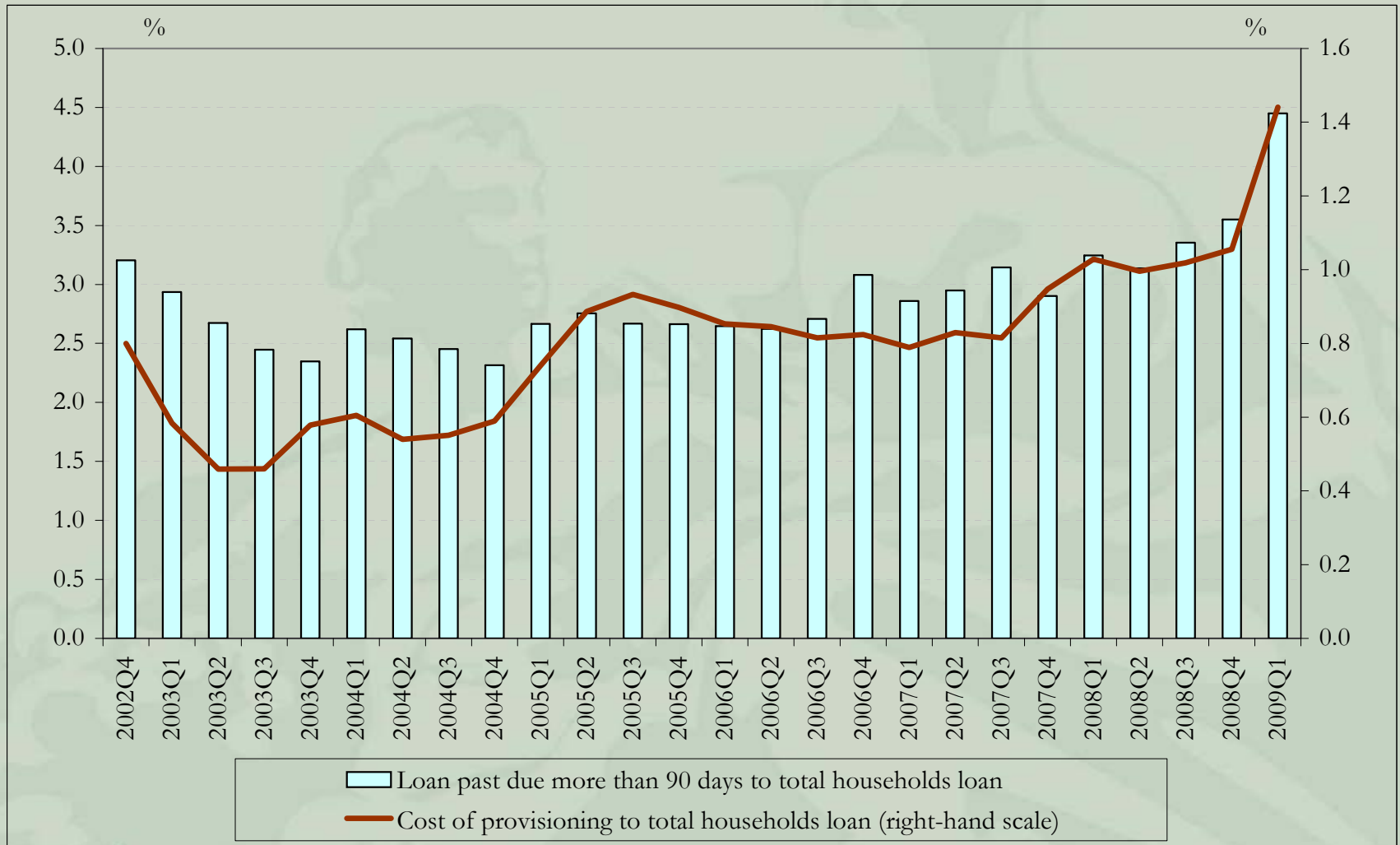
Source: MNB.

2.3. Micro-prudential assessment

- **Good portfolio quality**
 - improving risk management – model based scoring systems
 - increasing but still low LTV ratios
 - no asset price bubble
- **High income-generating capacity of FX-lending**
 - high margin: low funding cost, low risk premia (low expected loss), high fees
 - one of the most profitable banking sector in the region
- **Strong funding base**
 - strong ownership structure

Good portfolio quality

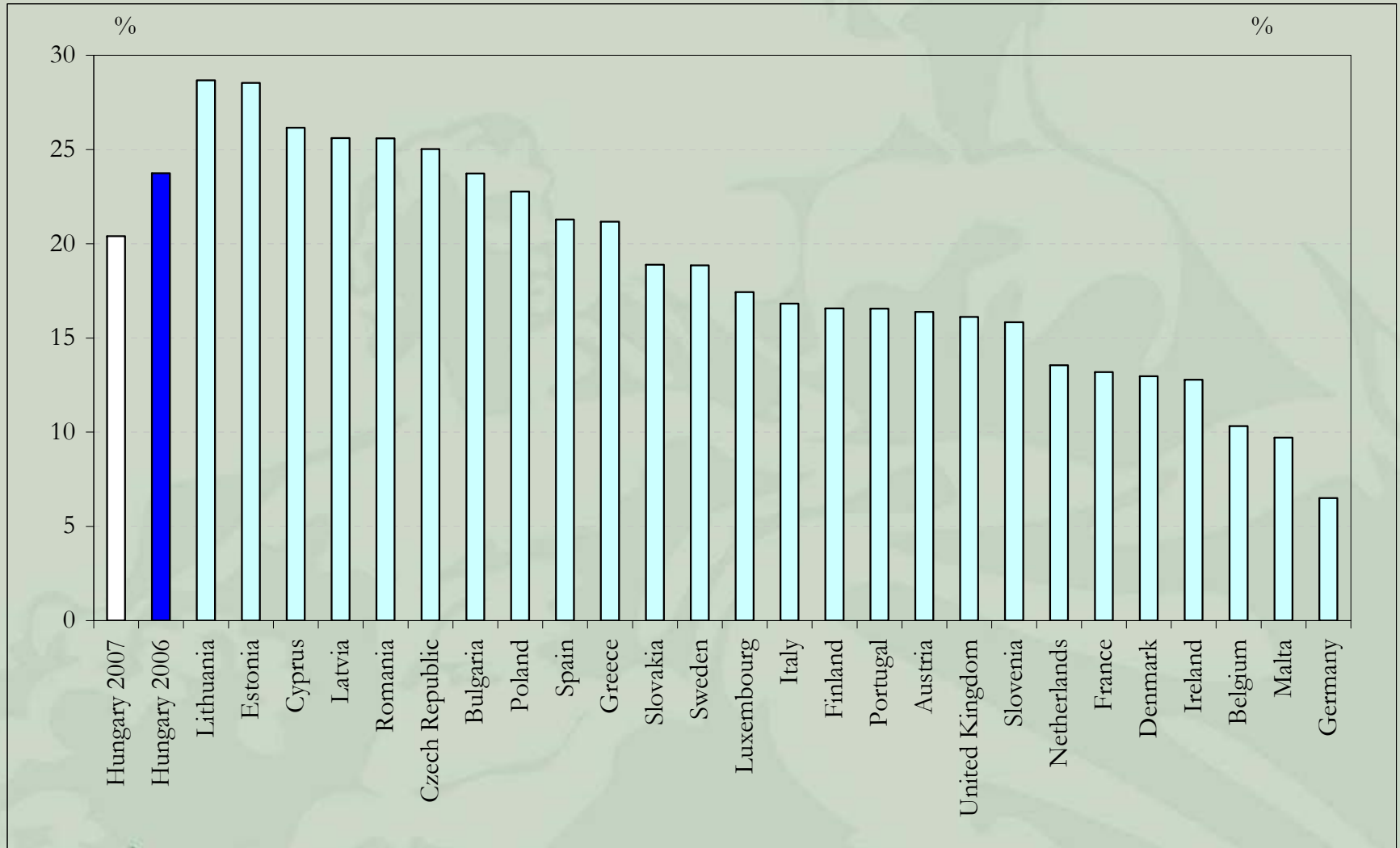
(Quality of the households' portfolio)



Source: MNB.

High profitability

(ROE for 2007)



Source: ECB.

3. Macro-level imbalances

3.1. Household sector

- Debt to GDP is relatively low, but debt service burden compared to disposable income is high
- Large currency mismatch – forced carry trade ?
- No housing price bubble (in Hungary), but households' loans are home equity type credit therefore interaction between credit and consumption is strong
- Subprime borrowers: high expected default ratio / higher LGD
- Consumption and saving: diminishing net saving position

High debt service burden

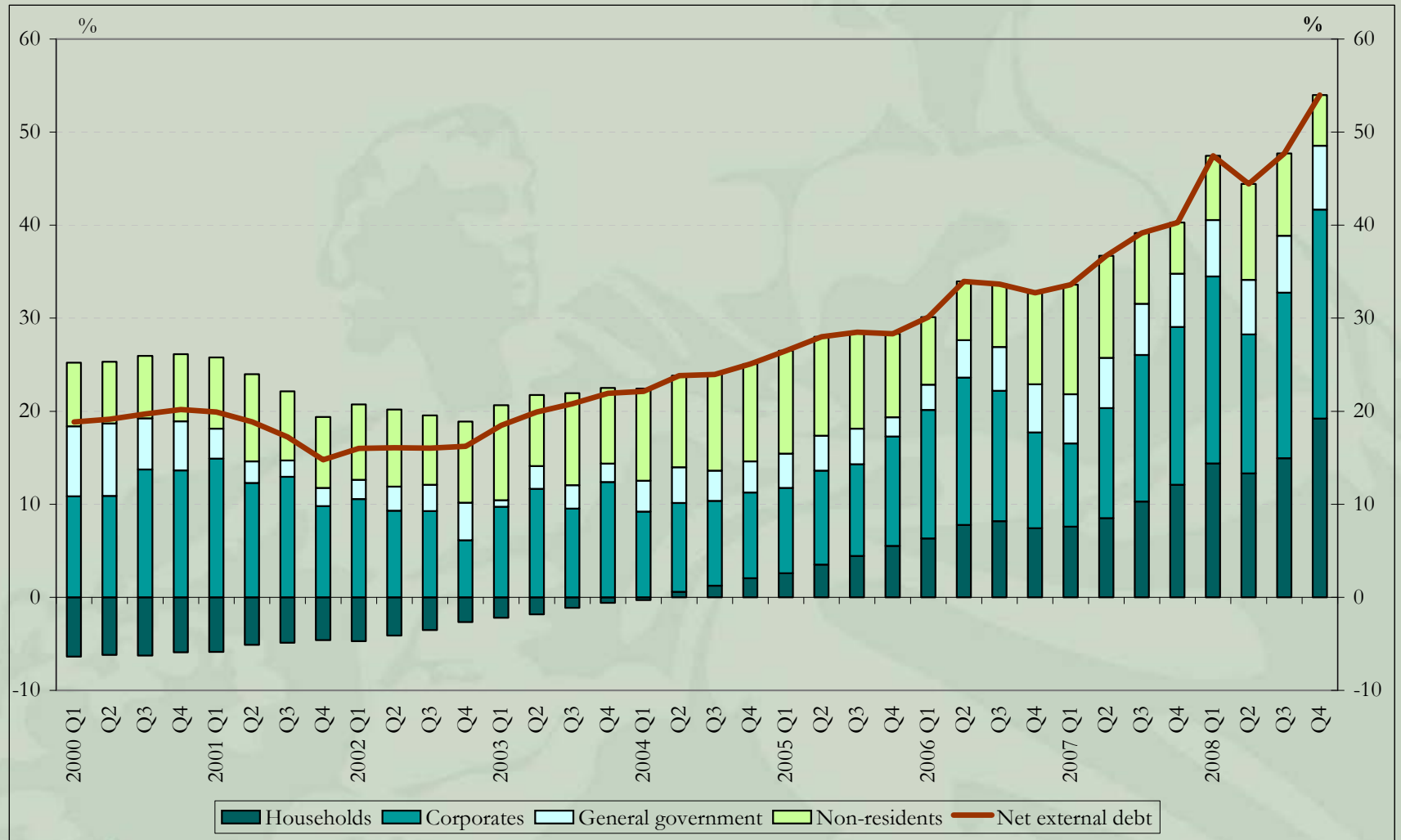
(Households debt-to-GDP and installment-to-income ratios)



Source: MNB.

Increasing open FX position of households

(Open FX position of the main sectors as percentage of GDP)



Source: MNB.

3.2. Banking system

Households' exchange rate risk can easily be transformed into endogenous credit risk of banks (risk transfer...)

Banking system is exposed to real estate market (endogenous collateral problem)

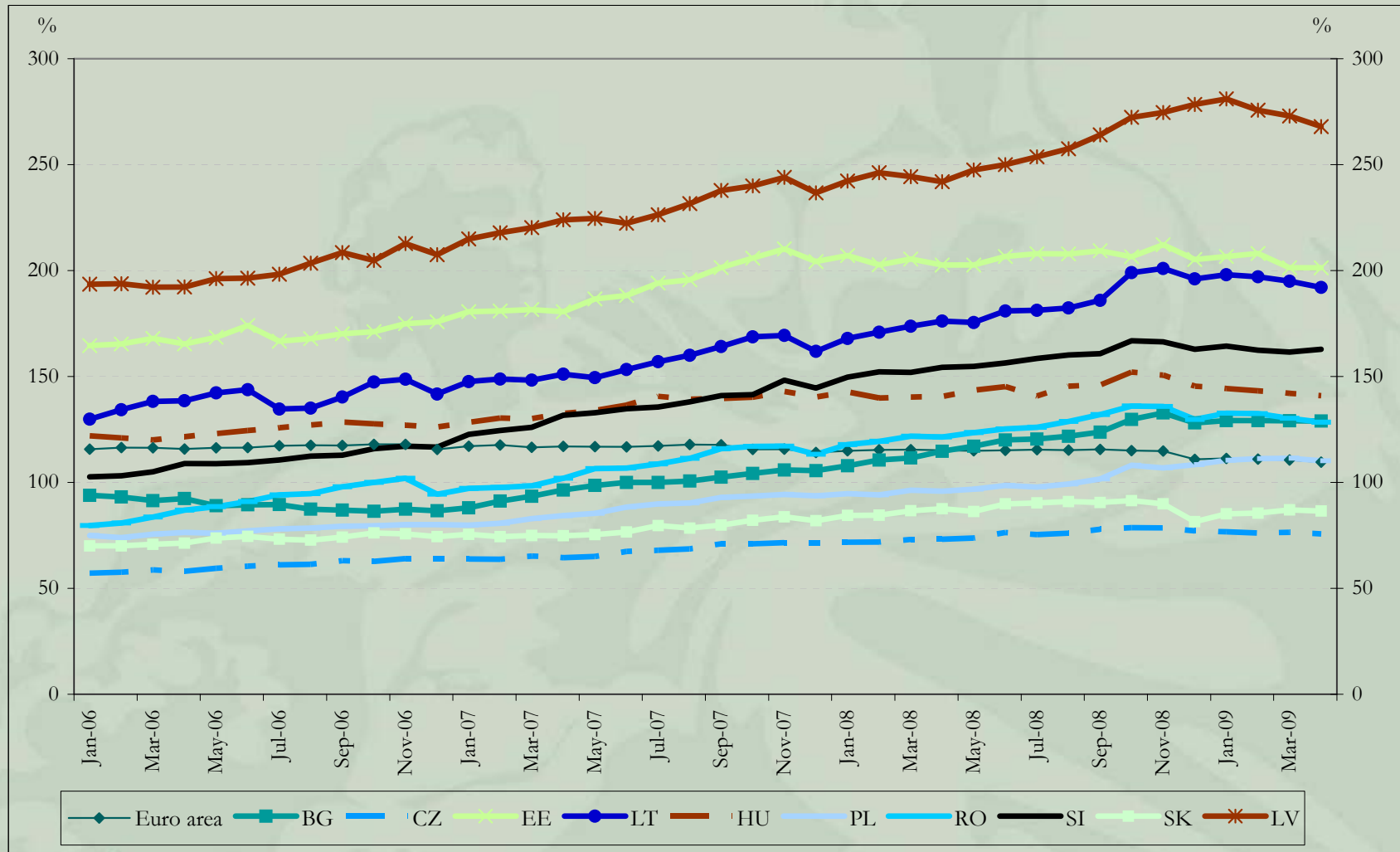
Long-term mortgage credits were financed mainly by short-term foreign funding (L/D problem, maturity mismatch)

Maturity and fx mismatch on balance sheet

On-balance sheet open FX position is closed off-balance sheet - freezing FX swap market can cause liquidity, roll-over or solvency risks

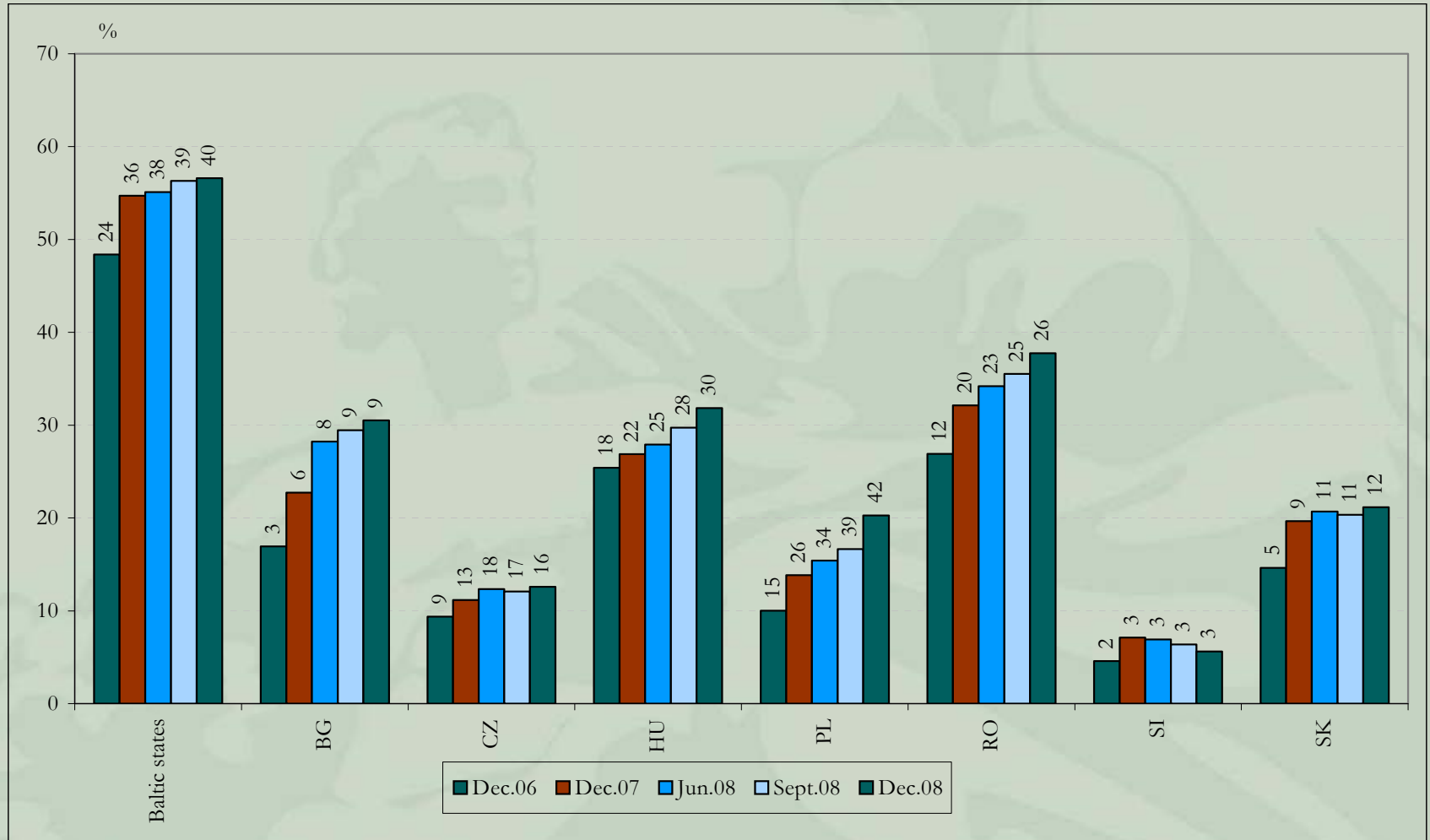
High loan to deposit ratio

(Loan to deposit ratios in CEE)



Foreign funds

(Foreign loans to the banking sectors of CEE member states of the European Union and its ratio to the total funds)

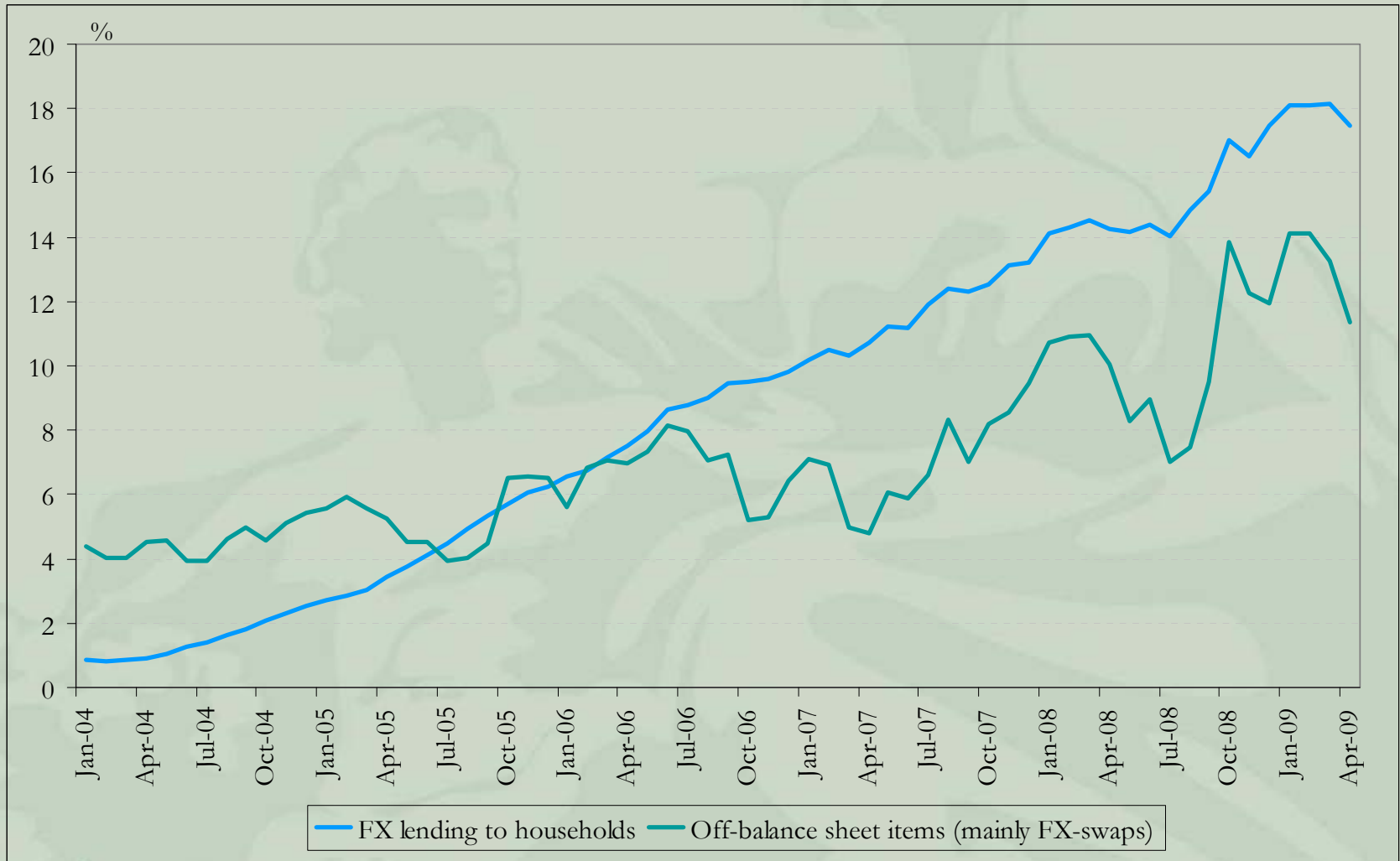


Note: Values above columns indicates the value of total foreign loans in billion EUR.

Source: ECB.

Increasing role of FX swaps

(Off-balance sheet items and households FX loans in percentage of balance sheet total)



3.3. Macro-prudential risks

High external financing requirement and indebtedness

Increased vulnerability of the banking sector and the economy to exogenous shocks (high risk premia), contagion effect

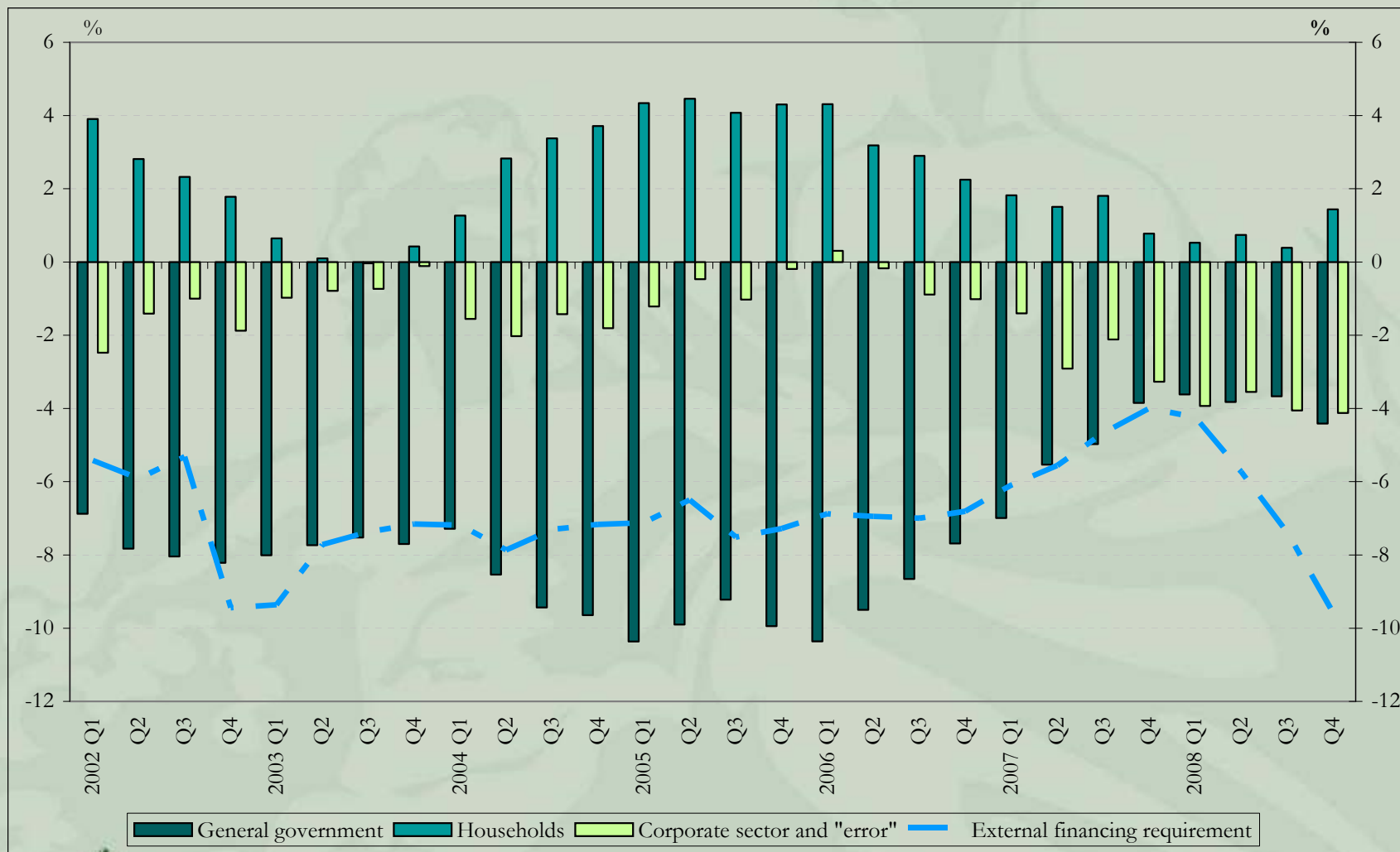
Increased liquidity risk – high dependence on foreign funds, on swap markets (drying out markets)

Limited, less efficient monetary policy transmission

LOLR efficiency deteriorated (not only HUF but FX as well)

Increasing external financing requirement

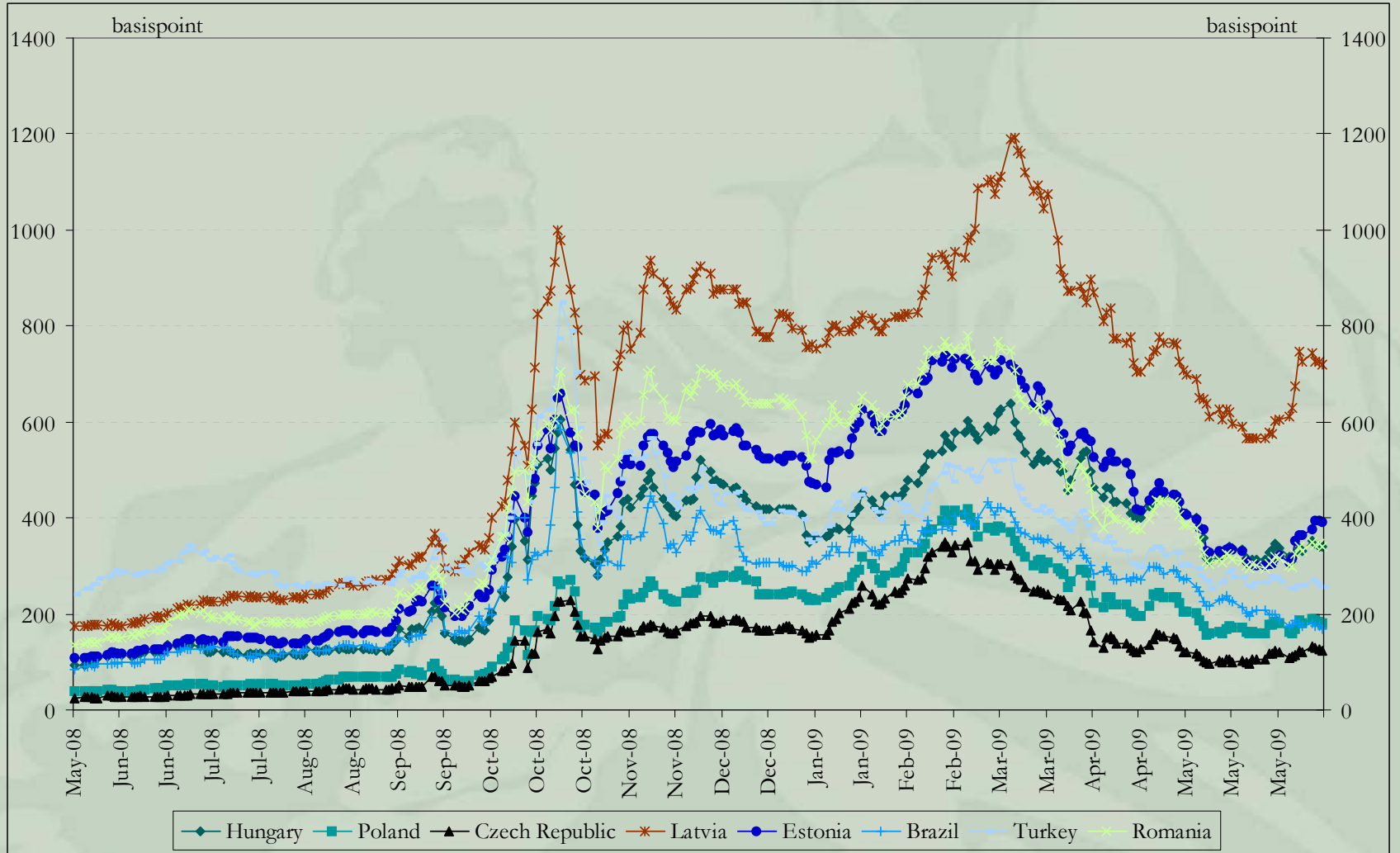
(Net financing capacity of the main sectors and external equilibrium as percentage of GDP)



Source: MNB.

Sovereign CDS spreads

(Dynamics of sovereign CDS spreads in emerging countries)



Source: Thomson Datastream..

4. Where should authorities intervene: what to regulate ?

Case study: several measures were used worldwide to control (FX) credit growth

<i>Monetary measures</i>	<i>Prudential measures</i>	<i>Supervisory measures</i>	<i>Fiscal measures</i>	<i>Administrative measure</i>
Interest rate policy	Higher and/or differentiated capital requirements	Tightening requirements on risk management (stresstests etc.)	Taxation on FX lending	Prohibition of foreign currency lending
Reserve requirement changes in the level, and eligible liability base, or differentiate)	Tighter loan classification and provisioning requirements	Tightening supervisory controls	Reduce government support on FX loans	
	Tighter conditions and standards (LTV, instalment to income) on loan types	Improve cooperation between supervisors and banks	Government support on loans denominated in domestic currency	Limits on growth rate of FX loans or on some type of funds
	Net open position limit			

Are the measures always effective ?

- Before the build-up of FX credit stock:
 - „one instrument, two goals” problem at interest rate policy
 - regulatory arbitrage due to the high foreign ownership of the banks – switch to cross-boarder lending
 - some of these measures can easily be evaded (e.g. differentiated reserve requirement)
 - due to high public debt the room for fiscal policy was narrow
- After the build-up of FX credit stock:
 - limiting FX lending may strengthen recession now
 - stock of FX denominated loans can decrease only very slowly