



CROATIAN NATIONAL BANK

Regulation, Risk Perception and ER options - the CEE Region -

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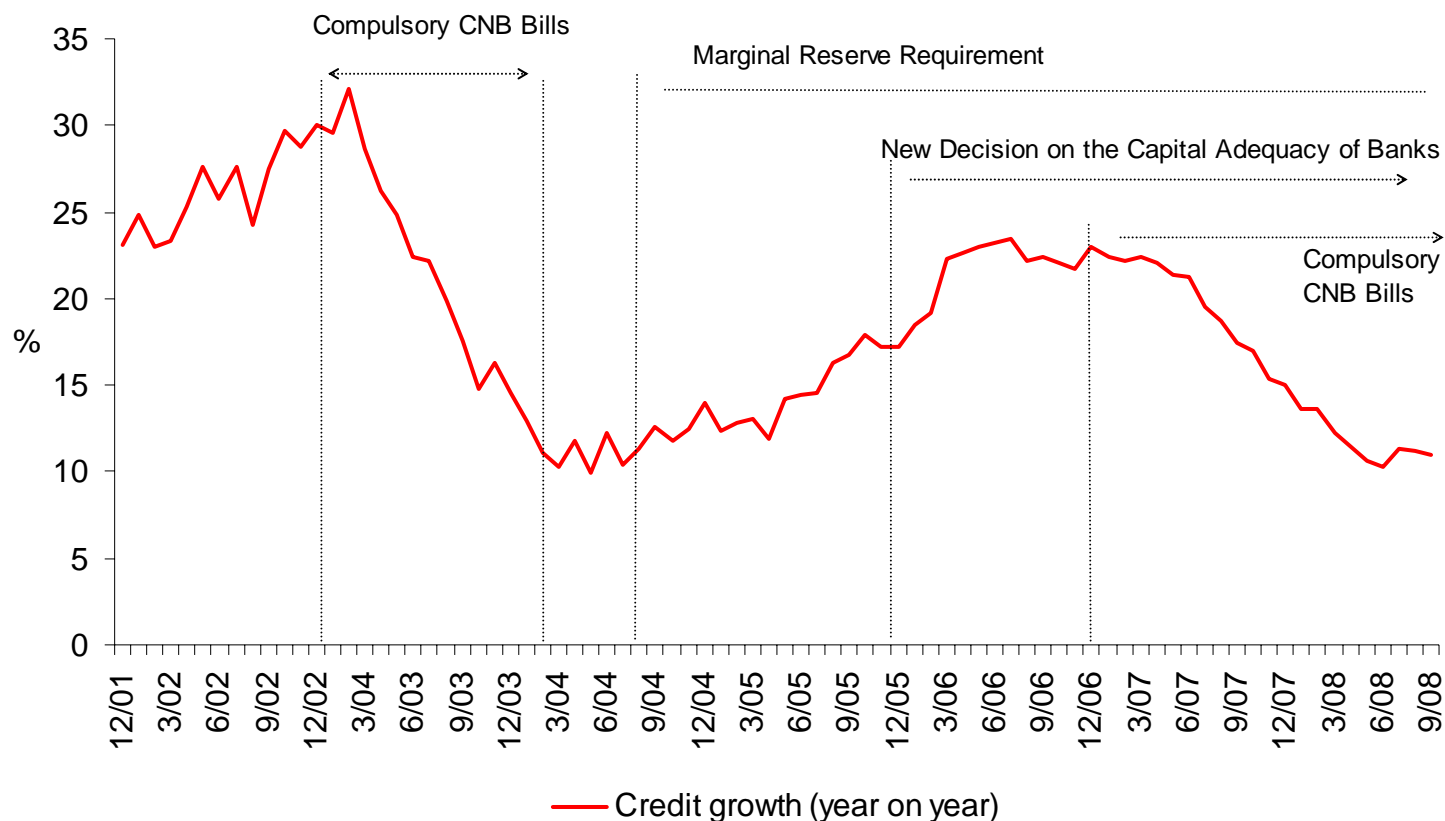
Outline

- I. Regulation in a fully globalized environment (Croatia)
- II. Risk Perception (CEE)
- III. Exchange rate policy options looking forward (CEE)

I. Small country regulation in a globalized setting

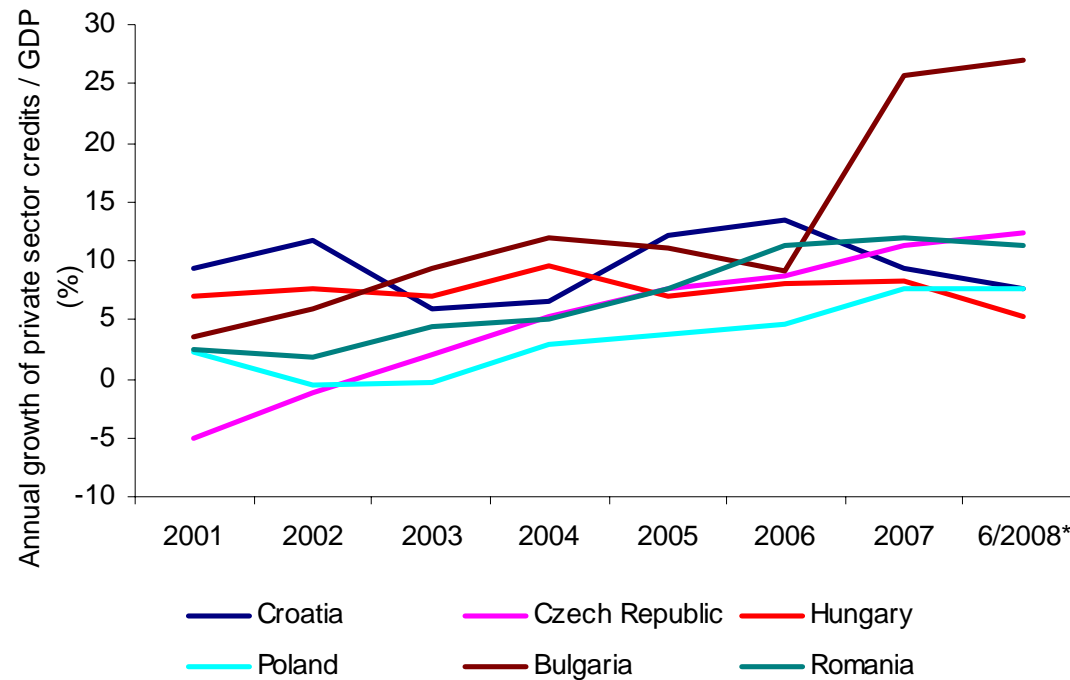
- ❑ Banking system dominated by eurozone banks (90%)
- ❑ Bank's balance sheets dominated by foreign currency deposits (85%)
- ❑ No control of capital flows
- ❑ No effective control of the price of credit supply - eurozone banks refinance with the ECB (mother banks) – lend in fx (with fx clause) in Croatia
- ❑ Combination of high credit demand and aggressive credit supply
- ❑ => rapid credit growth, foreign debt accumulation, fx risk->credit risk, ...boom to be followed by bust
- ❑ “Conventional” monetary policy ineffective

What can be done when “conventional” monetary policy does not work...



Source: CNB

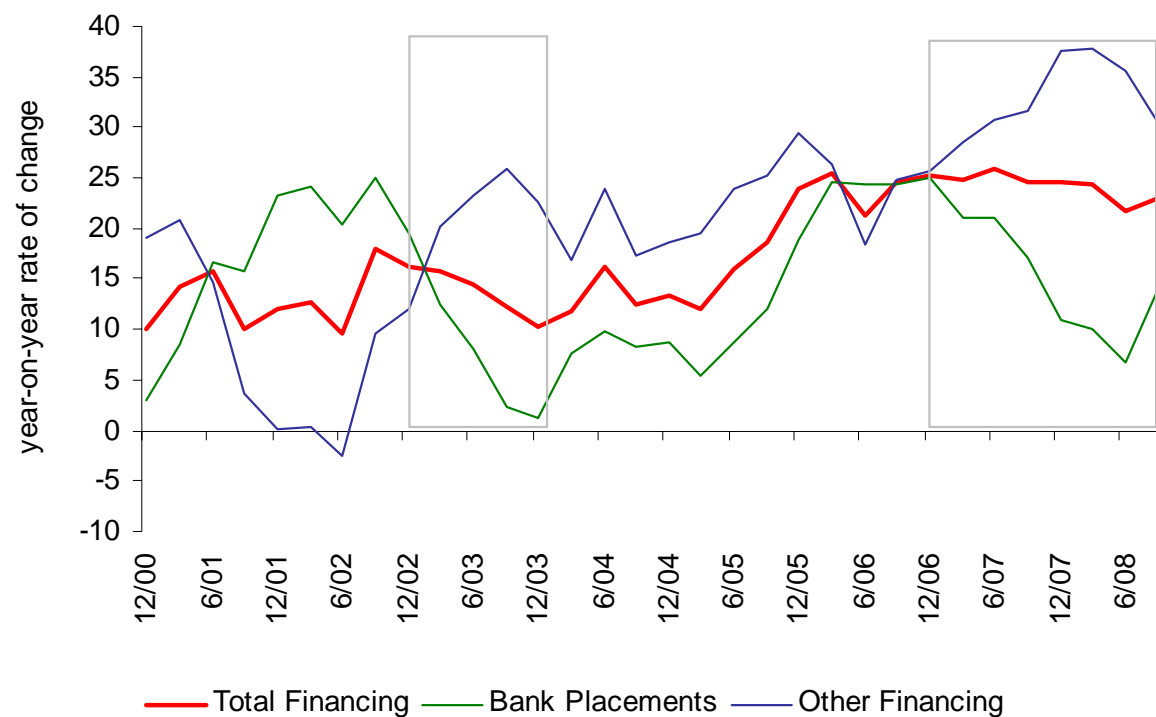
1) Slowdown of credit “boom”



* estimate, except Croatia

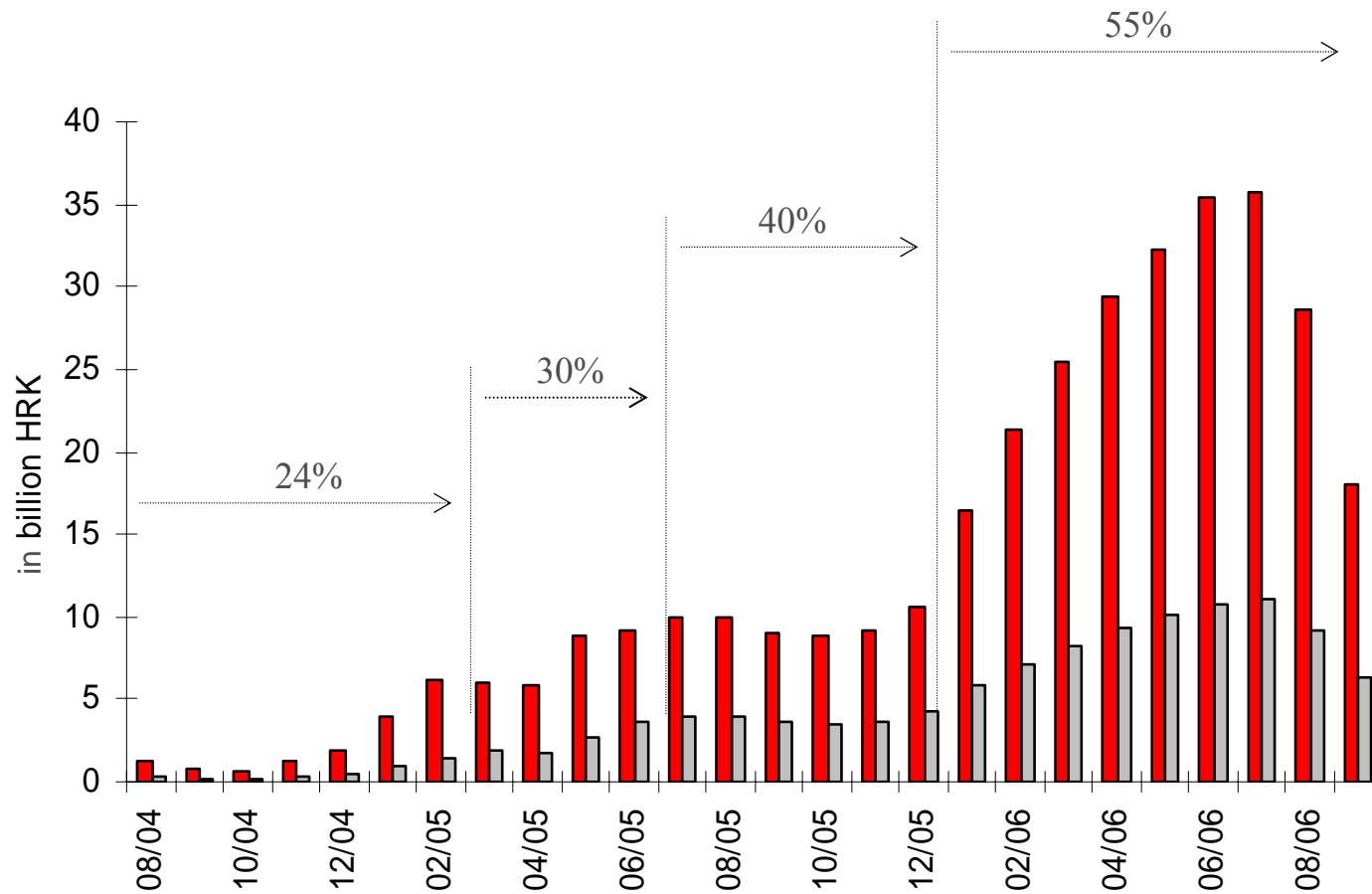
Sources: CNB; IFS; central banks' web pages

... but maintaining financing of corporate sector...



Source: CNB

2) Marginal reserve requirement

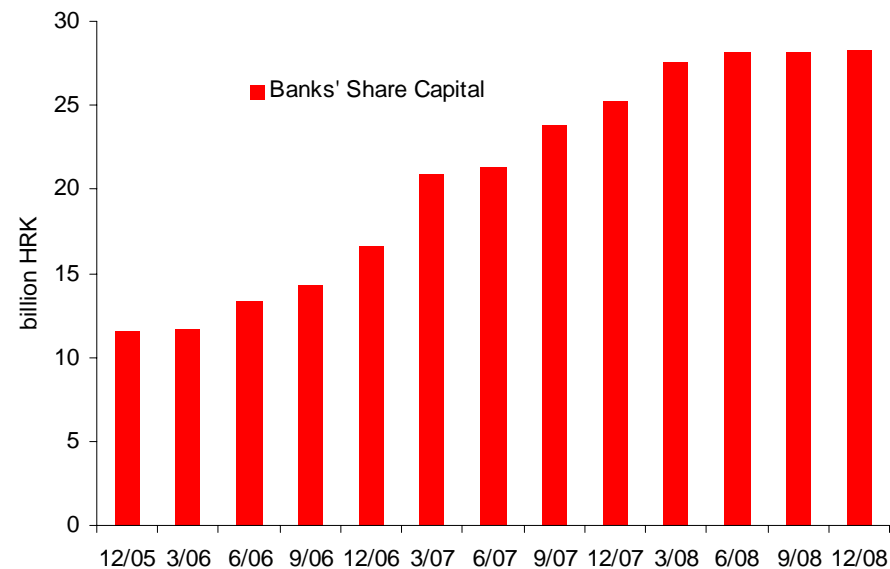
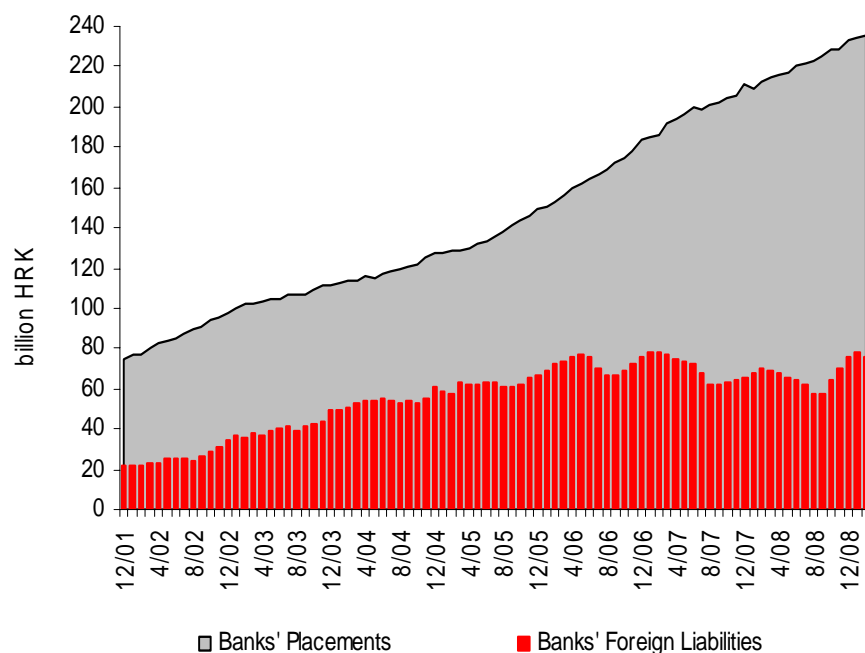


Source: CNB

■ MRR calculation base - left

■ Allocated marginal reserve requirements - left

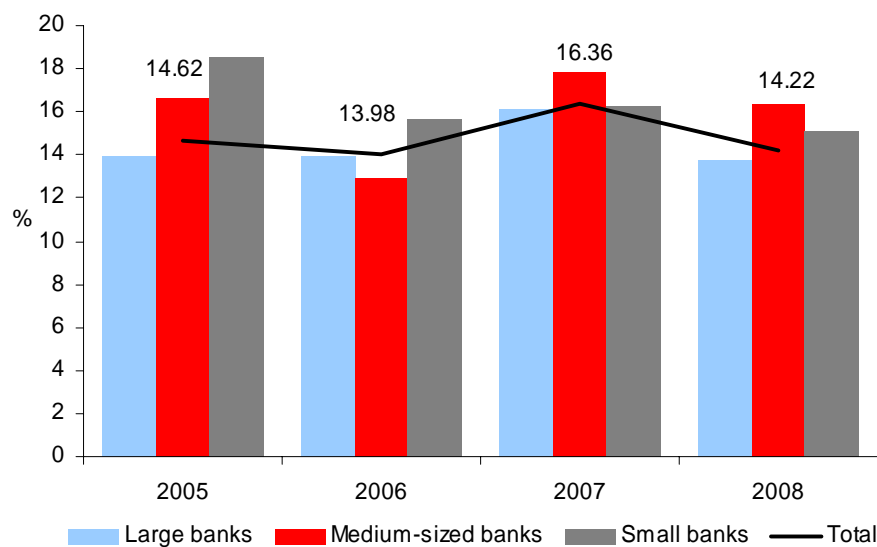
...banks substituted debt with equity...



Source: CNB

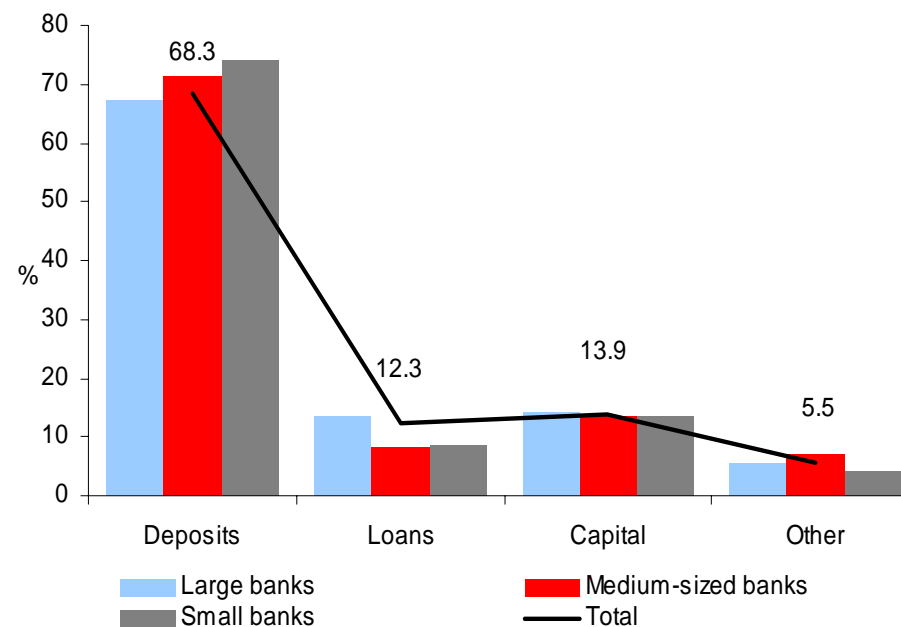
...high capital adequacy - low banks' leverage

Capital adequacy



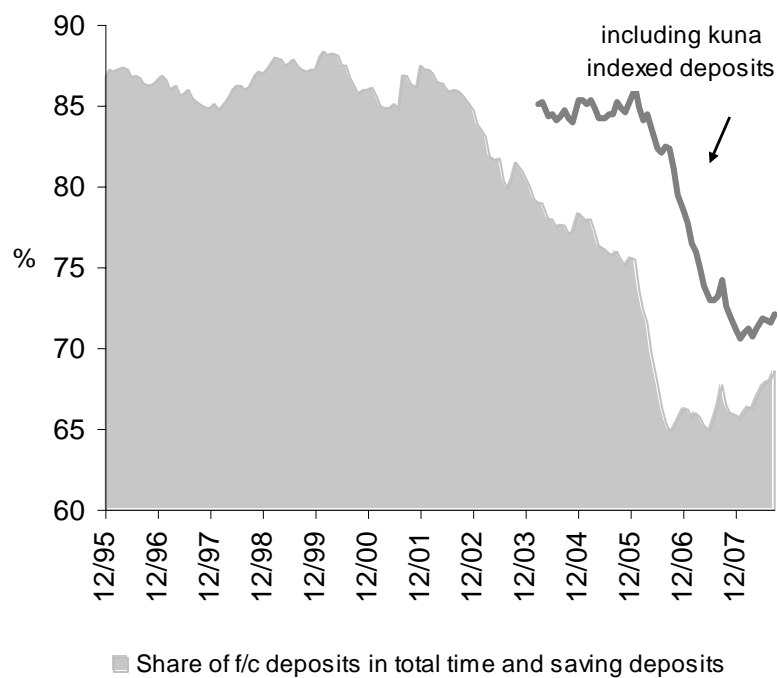
Source: CNB

Structure of liabilities of bank peer groups

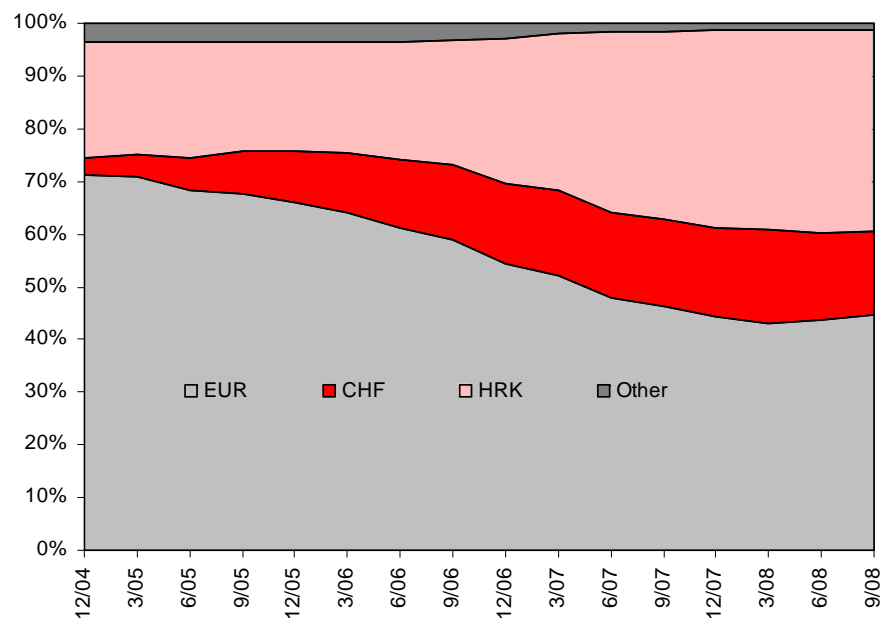


Source: CNB

3) Positive change in balance sheet currency structure - reduced currency risk



Source: CNB



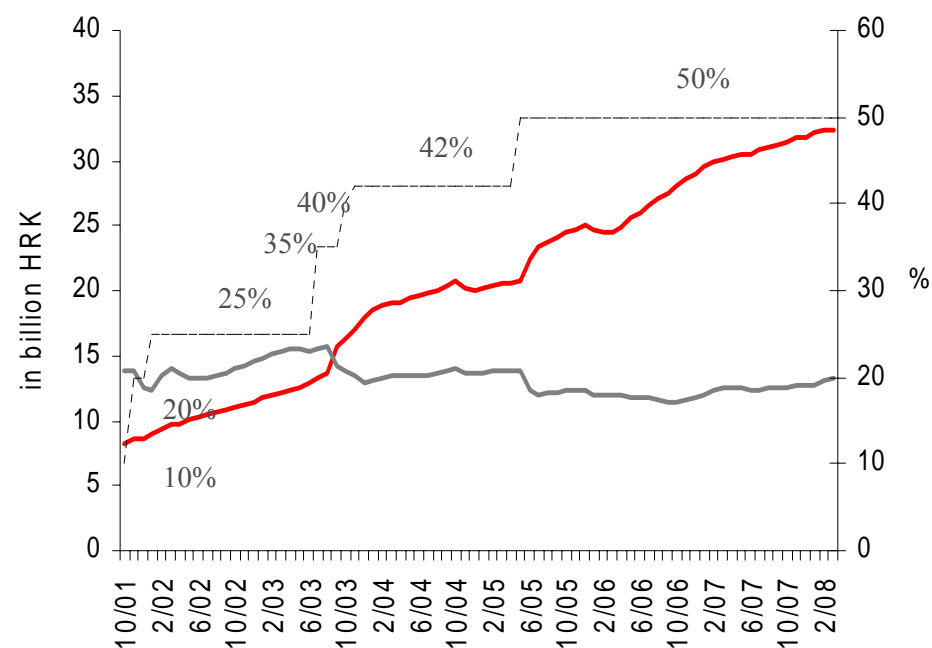
Source: CNB

4) Minimum fx liquidity requirement...

- ❑ CNB required banks to keep **32%** (later lowered to **28.5%** and then to **20%**), of the amount of their foreign exchange liabilities in liquid foreign currency instruments
- ❑ together with the central bank reserves: required **liquidity buffer** for the financial system
- ❑ but, also, another **counter-cyclical regulatory/monetary policy tool**

...and another unorthodox toll ...

- % of reserve requirement on foreign currency deposits that has to be held in local currency
 - weapon of deterrence against the fx speculation
 - also cheap sterilization tool for the CB
- mismatch in banks' balance sheets?
 - regulation allows banks to have non-zero net foreign currency position of up to 20% of liable capital



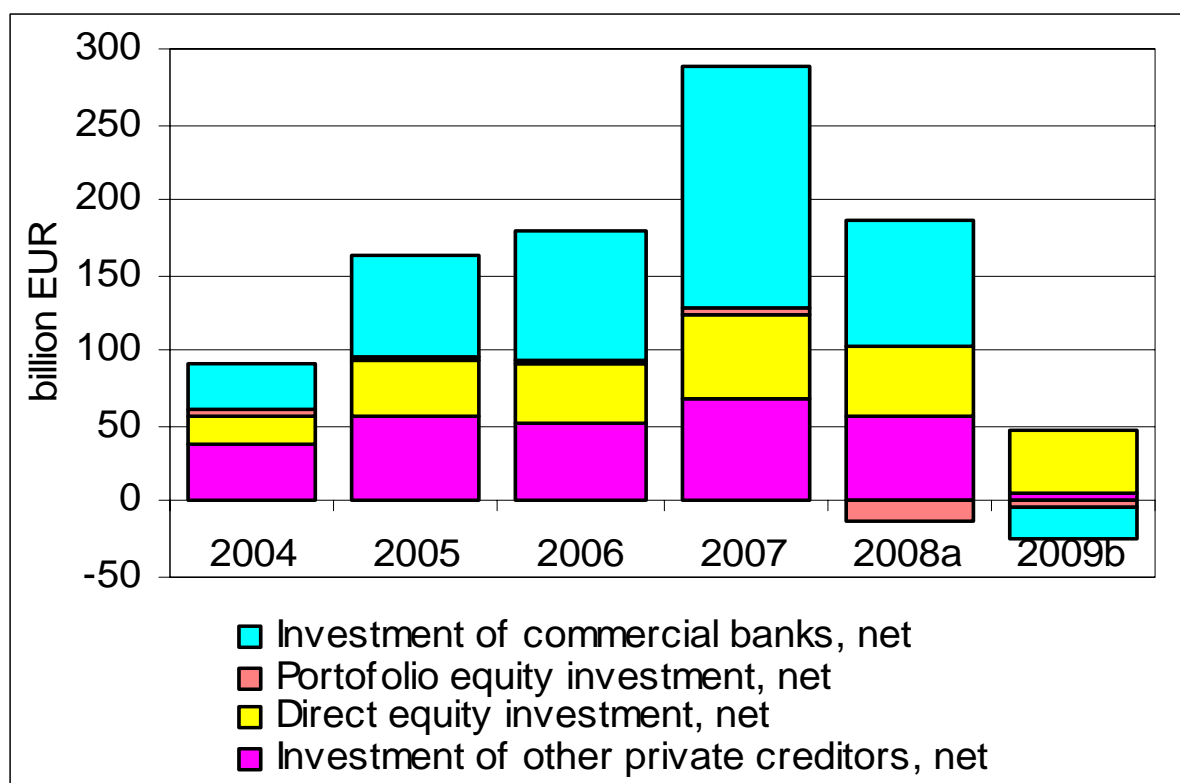
In summary: results of such an ‘unorthodox’ regulatory framework

- Slowdown in credit growth
- High capital adequacy – low leverage of the banking system
- Smaller balance sheet risk (currency induced credit risk)
- Buffer of both fx and domestic currency liquidity that has been released post-Lehman
 - removed capital inflow tax (MRR) with the onset of the crisis
 - reduced reserve requirement (17 – 14%)
 - reduced minimum fx liquidity requirement (32 – 20%)
- Counter-cyclical intervention equal to 8% of the GDP – fx reserves stable

II. Crisis and Risk Perception in the CEE

- CEE - since the beginning of the transition large capital inflows, mainly from the EU
- High penetration of foreign (EU/Eurozone) banks in domestic financial markets (70-98%) served as the main vehicle for large capital inflows
- Risk perception trends slowly reversed in the second half of 2007, with spreads skyrocketing post-Lehman

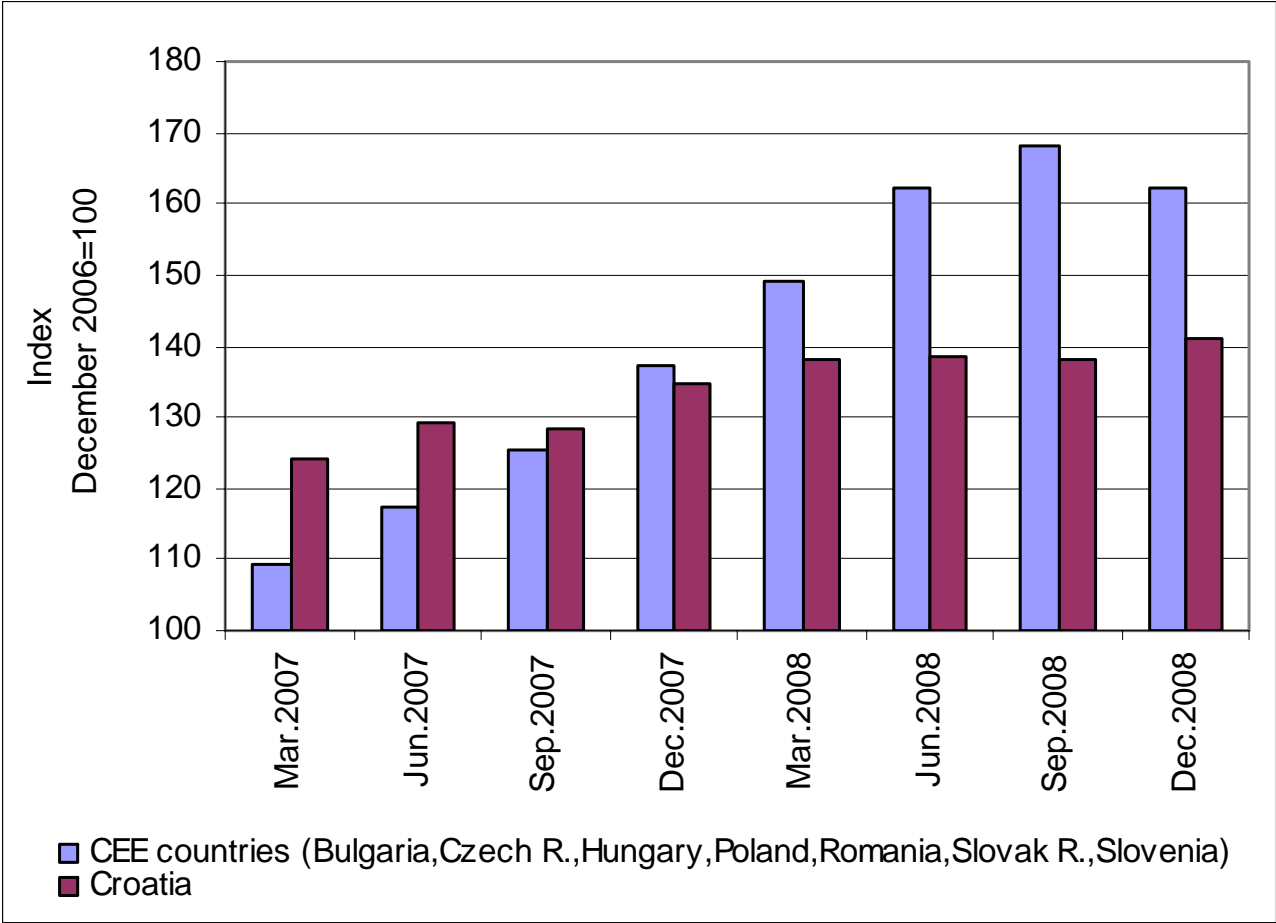
Capital Inflows to European Emerging Market Countries



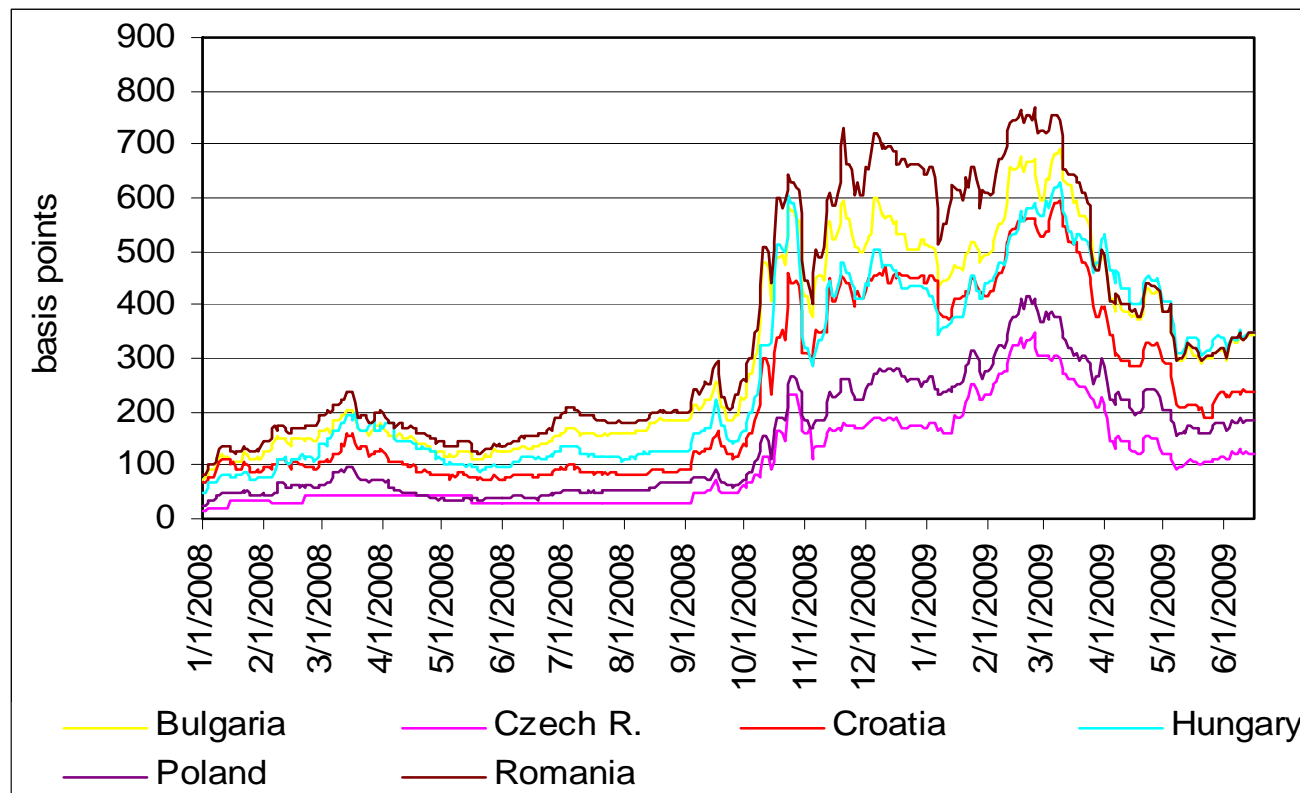
a Estimate. b Forecast.

Sources: International Institute of Finance, Capital Flows to Emerging Market Economies, January 2009 and Bloomberg.

BIS Reporting Banks' claims on CEE countries



CDS Spreads, Selected CEE Countries

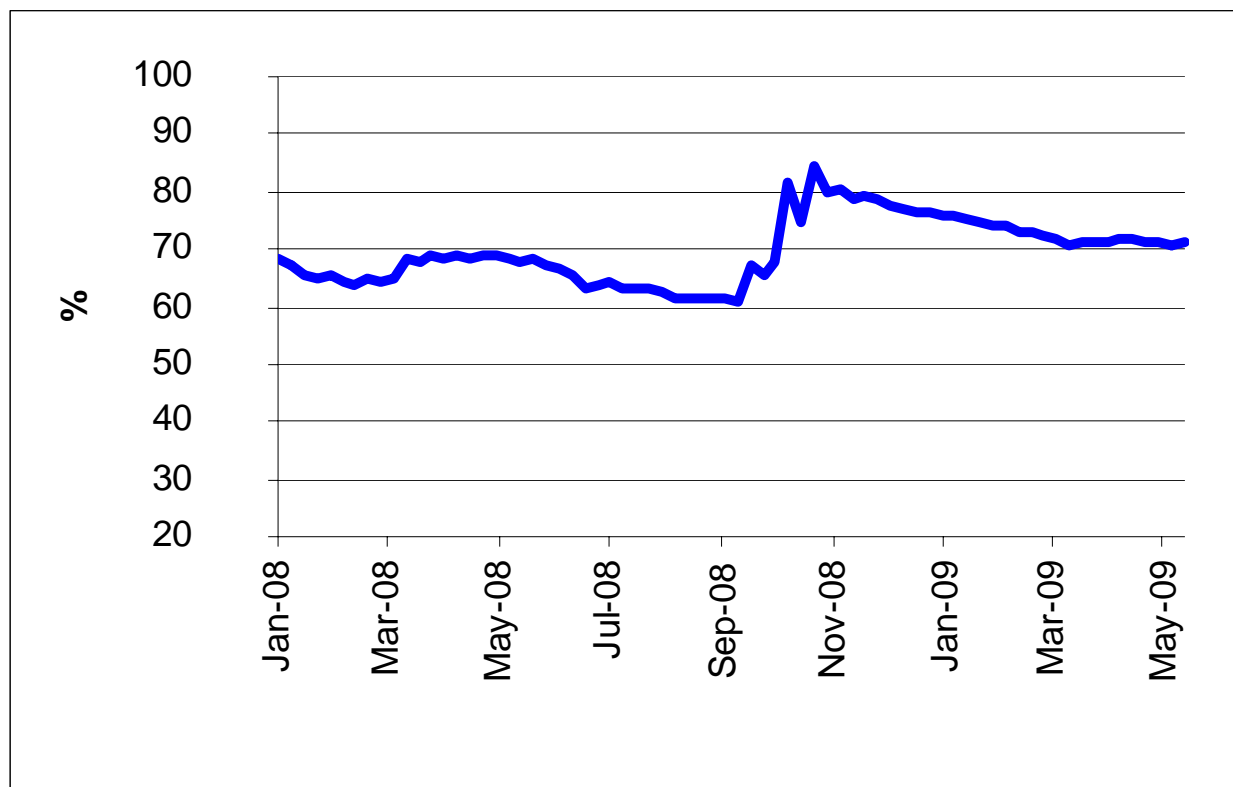


Source: Bloomberg.

Have the CEE region decoupled from the rest of the EM during crisis?

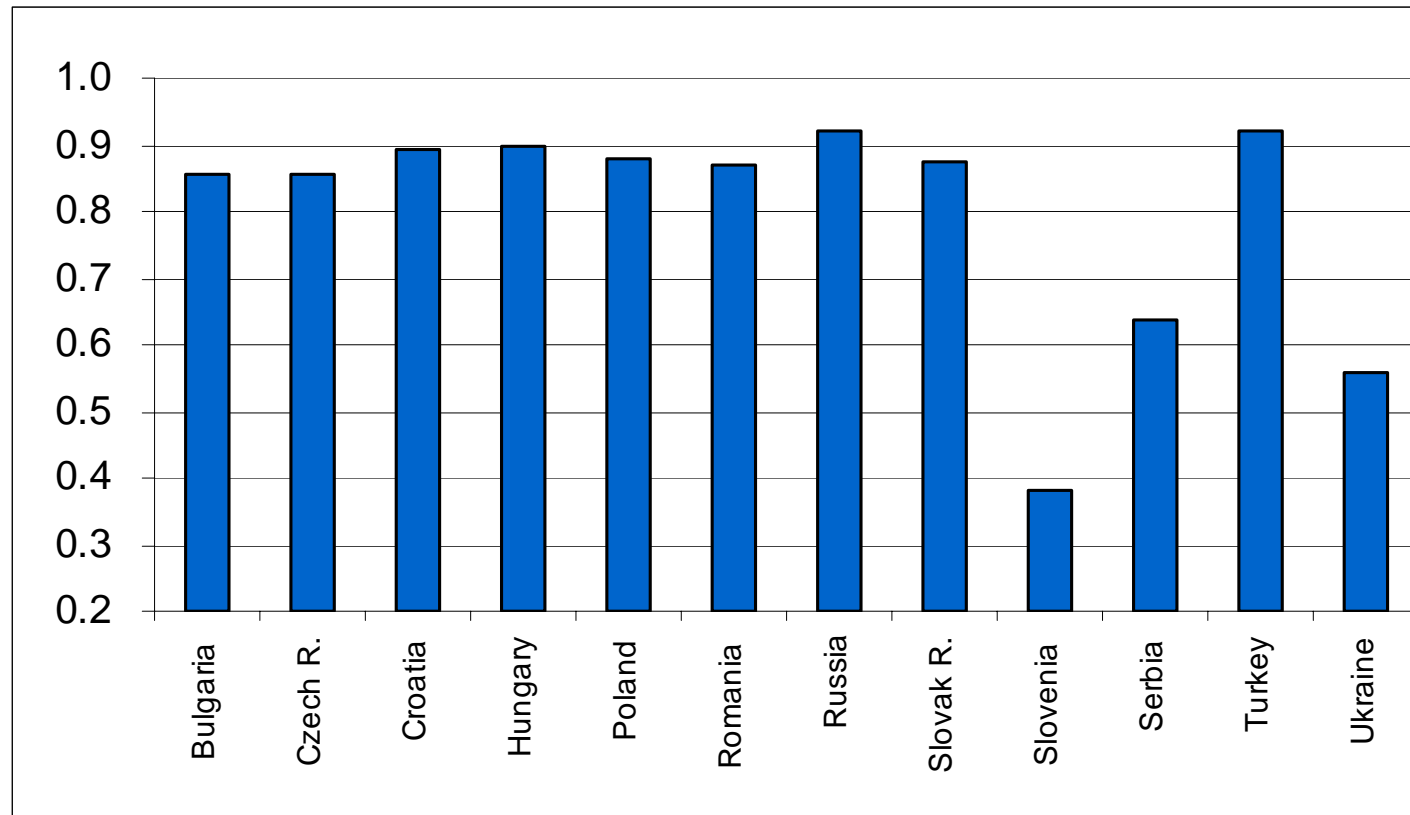
- ❑ In the seven post-Lehman months rating agencies (Moody's, Fitch), IMF, Nobel Laureate (Krugman: Austria is the next country to go bankrupt) and the press (Financial Times) all pointed to the Central and East Europe as the most vulnerable/risky region
- ❑ Main argument: unsustainable external positions will have to correct as the large capital inflows of the last decade will reverse and the region will pay dearly
- ❑ Were CEE countries really decoupling from the rest of the EM?

EM countries CDS Variation Explained by the Principal Component



Note: Principal Component Analysis includes 12 Central and Eastern Countries (Bulgaria, Croatia, Czech R., Poland, Romania, Russia, Slovak R., Slovenia, Serbia, Turkey and Ukraine) and also 12 countries of Latin America and Asia (Argentina, Brazil, Chile, Columbia, Mexico, Peru, Philippines, Indonesia, China, Malesia, Thailand, Vietnam).
Sources: Bloomberg, CNB.

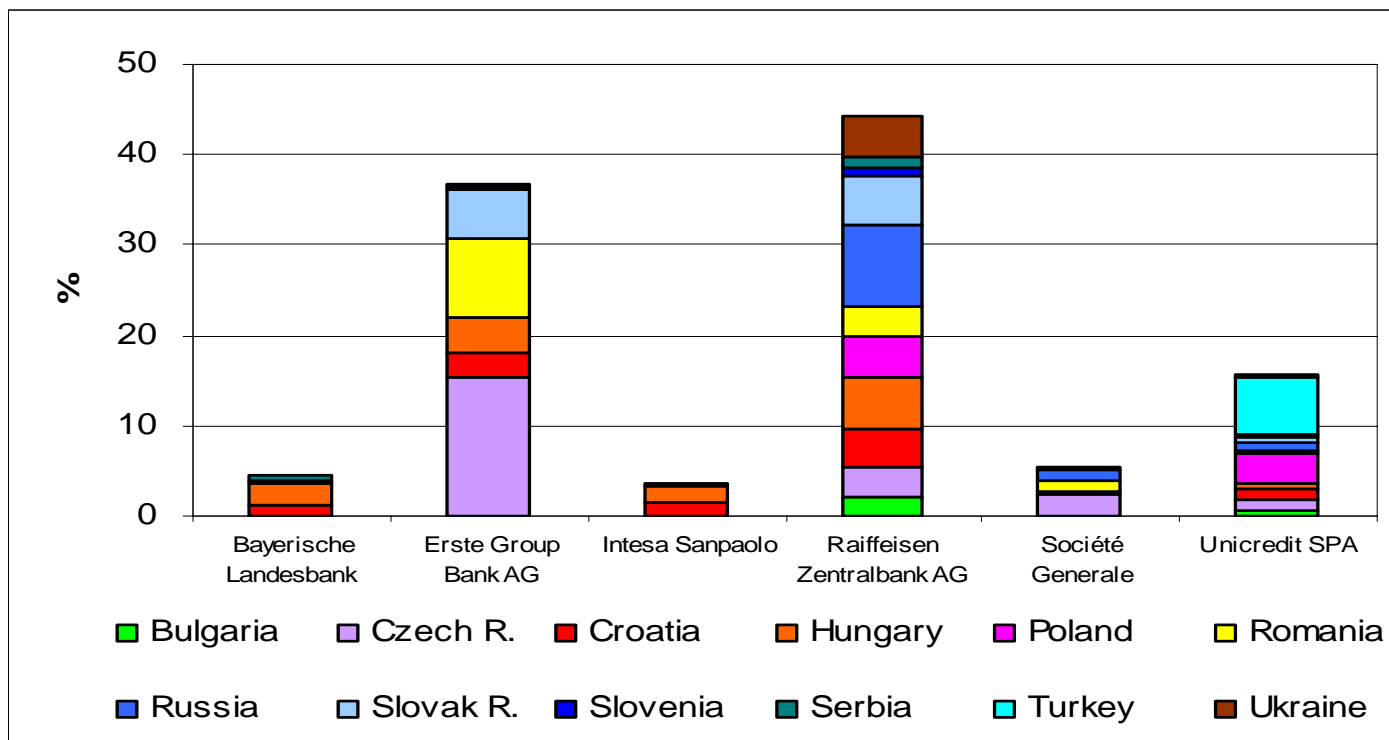
Correlation with Principal Component



Sources: Bloomberg, CNB.

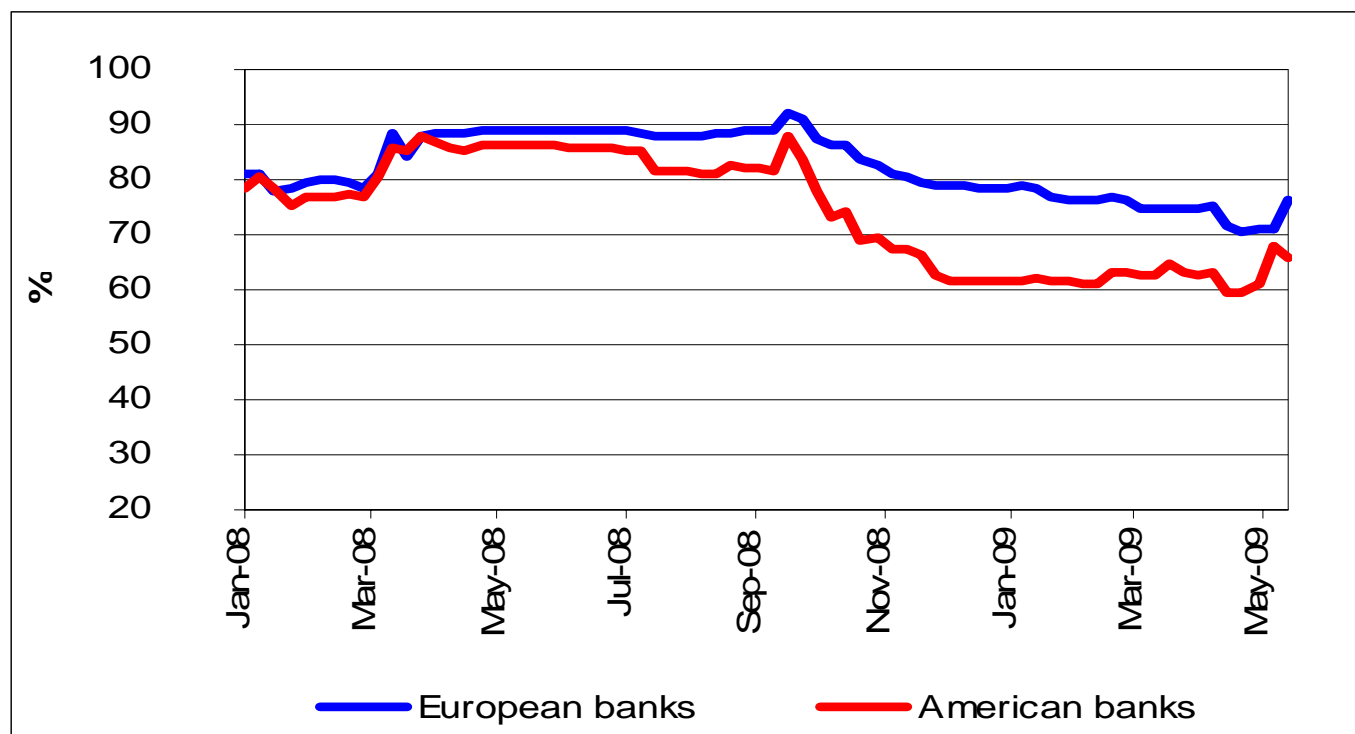
...and what about banks?

Share of total bank assets in the CEE



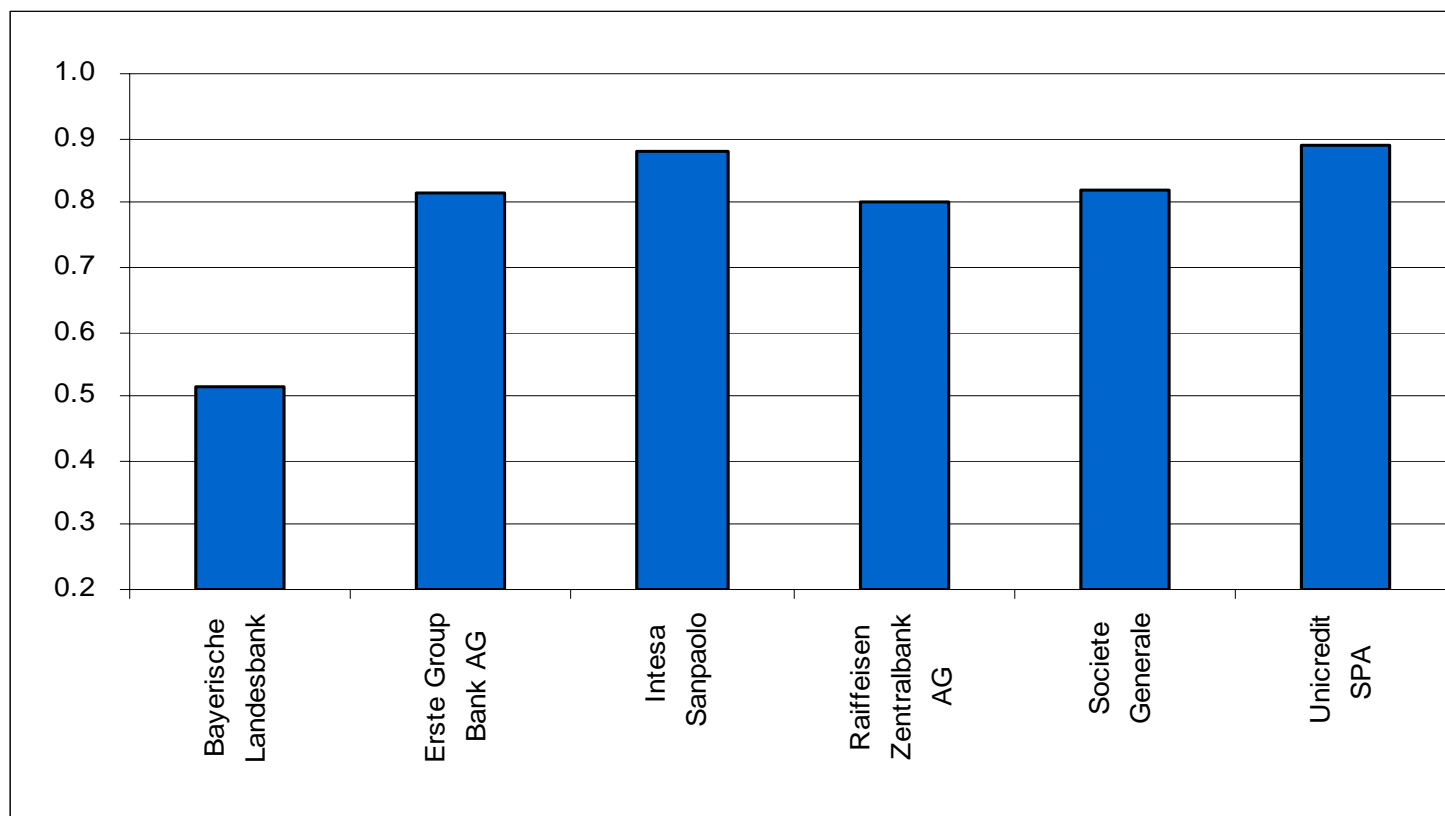
Source: Bankscope

Bank's CDS Variation Explained by the Principal Component



Note: Analysis of Principal Component is made on 4 Parent Banks (Erste Group Bank AG, Intesa Sanpaolo, Societe Generale i Unicredit SPA), 4 biggest european banks (Credit Suisse, HSBC, HBOS i Royal Bank of Scotland) as well as 4 biggest american banks (Bank of America, JP Morgan, Wachovia i Wells Fargo). Because of the missing data for Bayerische Landesbank and RZG AG for previous periods, they were not included in the analysis.
Sources: Bloomberg, CNB.

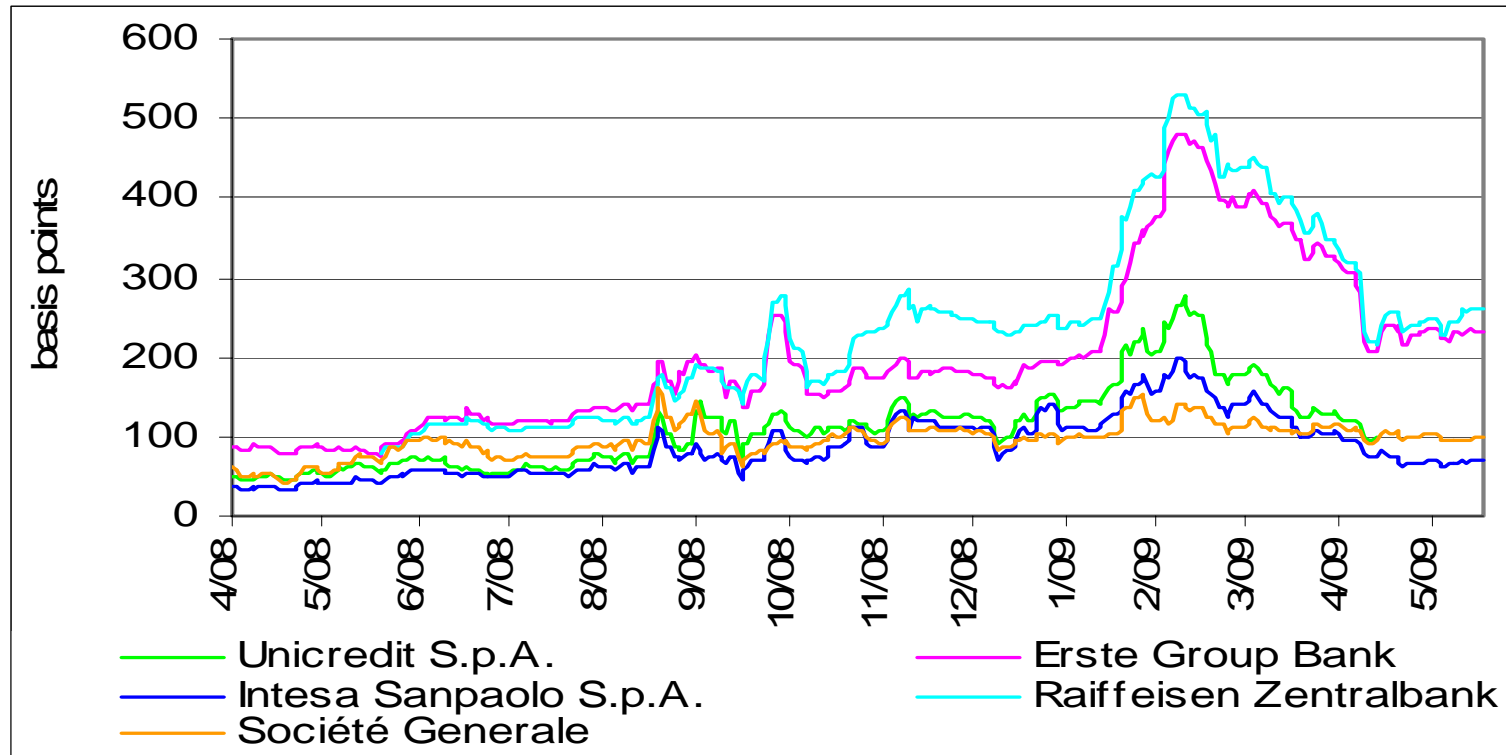
Correlation with Principal Component



Note: The biggest correlation of european and american banks are not included. Correlation Mean is taken with Principal Component of the biggest european nad american banks on the sample of week CDS change from 27th June 2008 to 15th May 2009.

Source: Bloomberg, CNB.

CDS Spreads for Parent Banks



Source: Bloomberg.

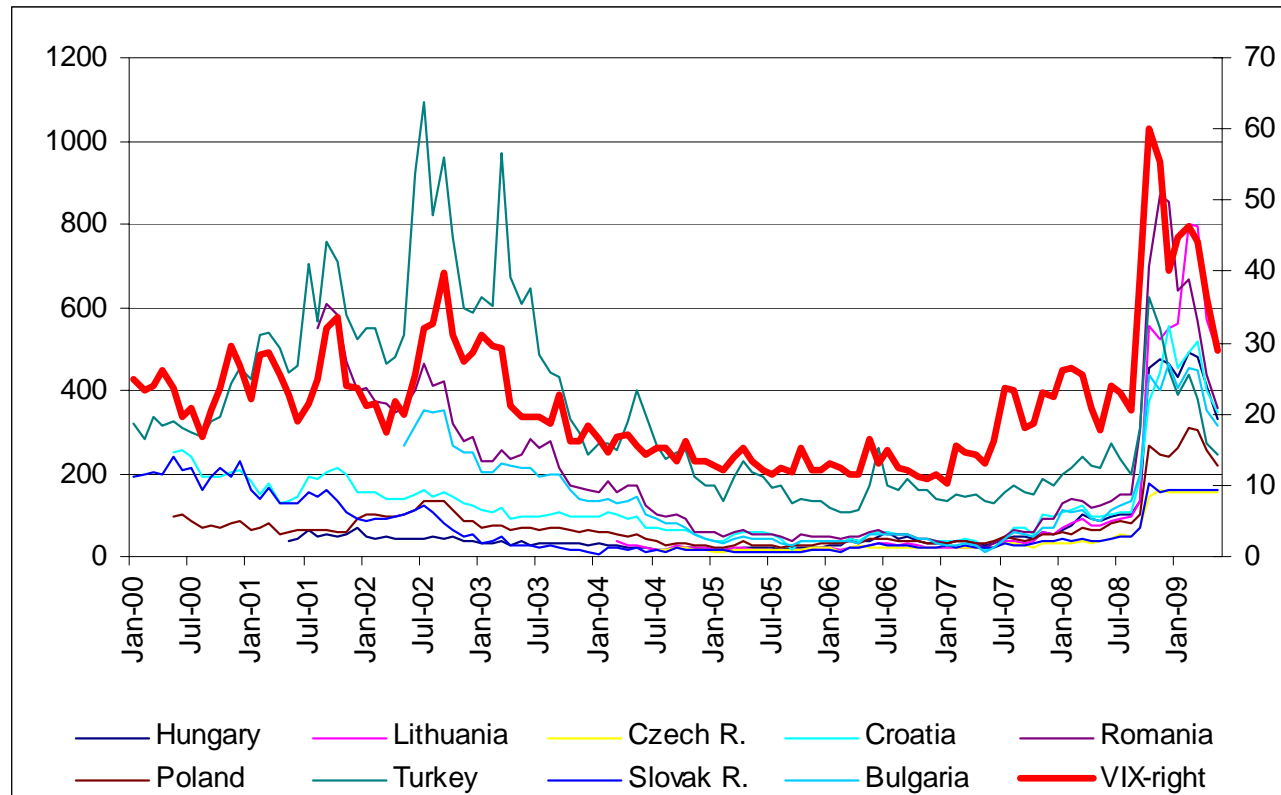
What lessons have been learned?

- Contagion can come from the core to the periphery

- Contagion links:
 - Banking system
 - Mother bank's problems have caused deposit withdrawals in the CEE
 - Capital inflow stop due to the changed mother bank's policies/risk perception
 - Trade links

-
- Fundamentals are important, after all

CEE sovereign spreads and VIX Index



Source: Bloomberg, JPM.

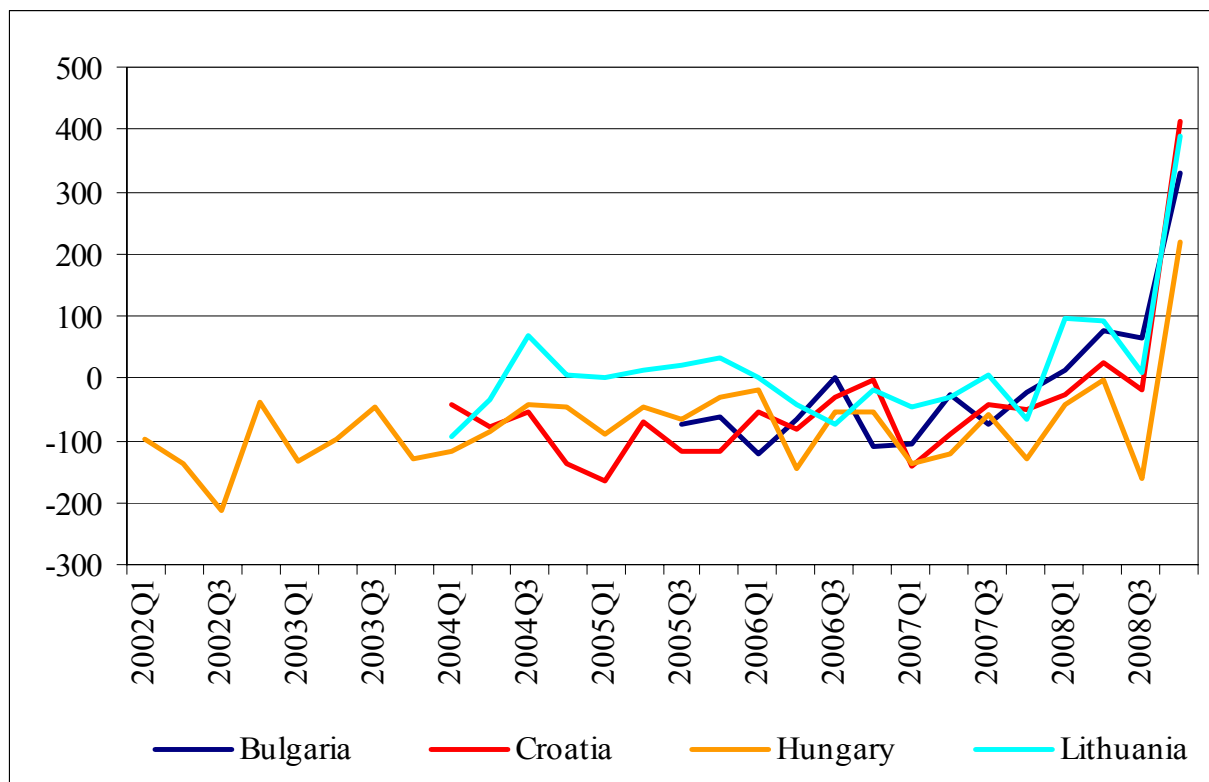
CDS Movers

Independent Variable	Coefficient
GDP gap	-5.7
Inflation	20.3
Exchange Rate (HRK/EUR) % Change	7.1
External Debt/International Reserves	0.3
% Change of Export/GDP	-9.2
EU and EMU accession progress	-45.7
VIX Index Change	6.6
Constant	93
<i>Adjusted R²</i>	0.58

* Significant at the level of 5%

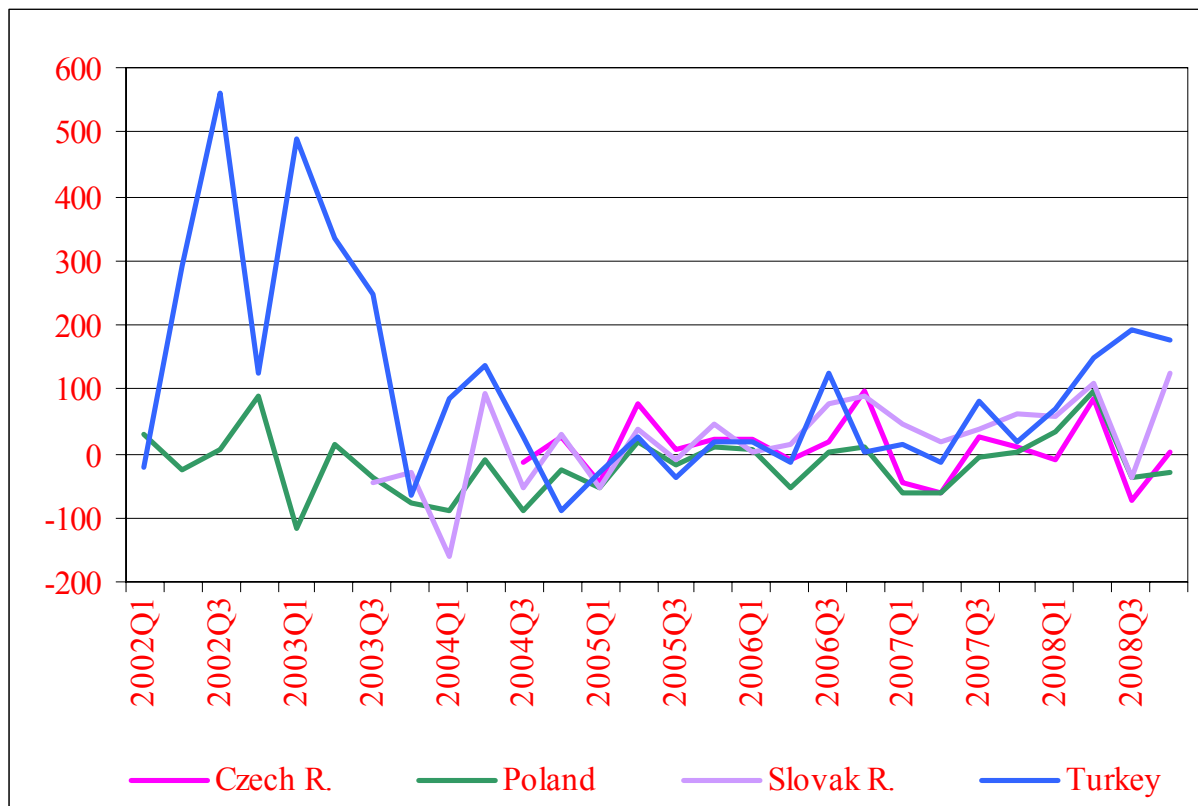
Source: CNB calculations.

Residuals from the model by country



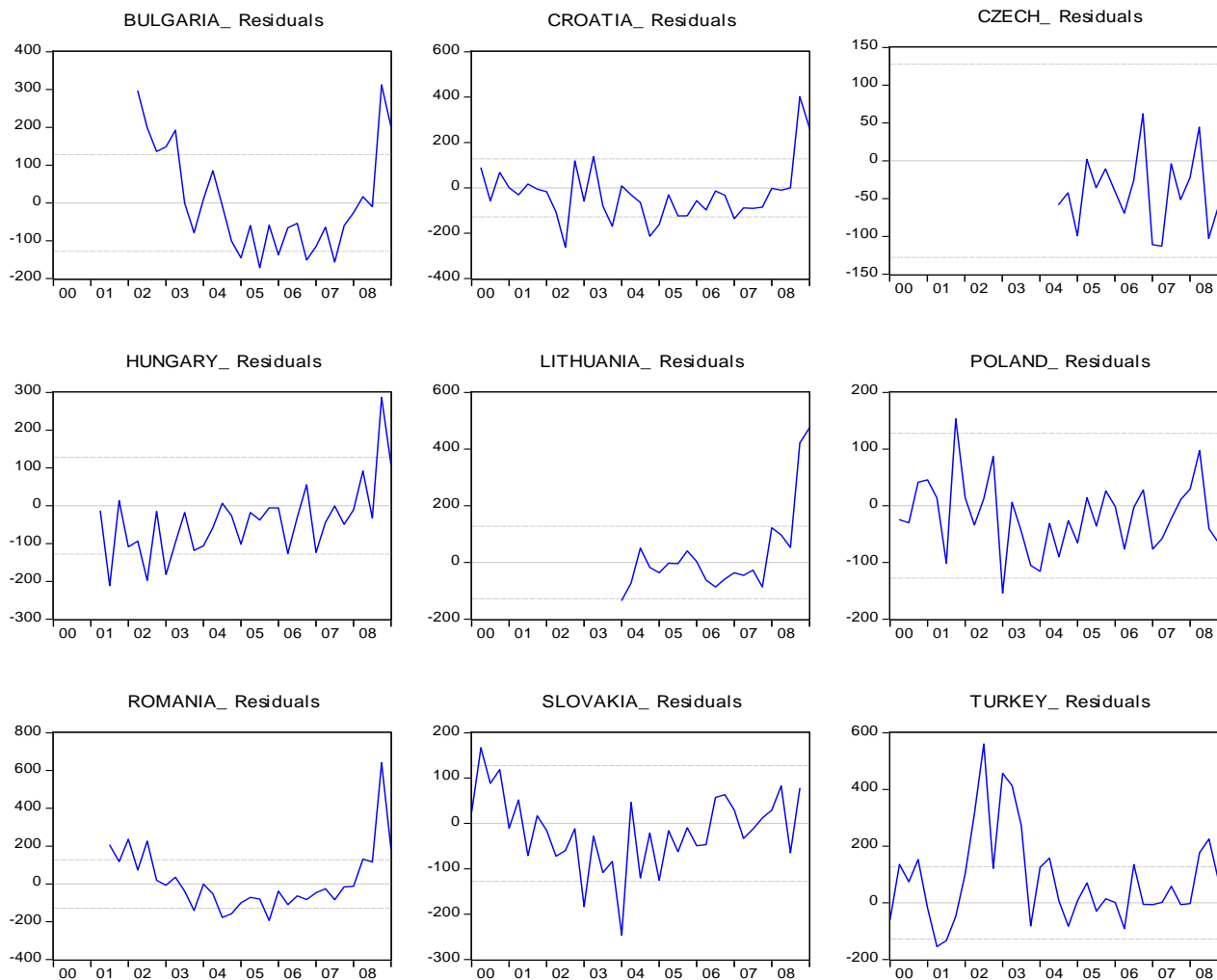
Source: CNB calculations.

Residuals from the model by country



Source: CNB calculations.

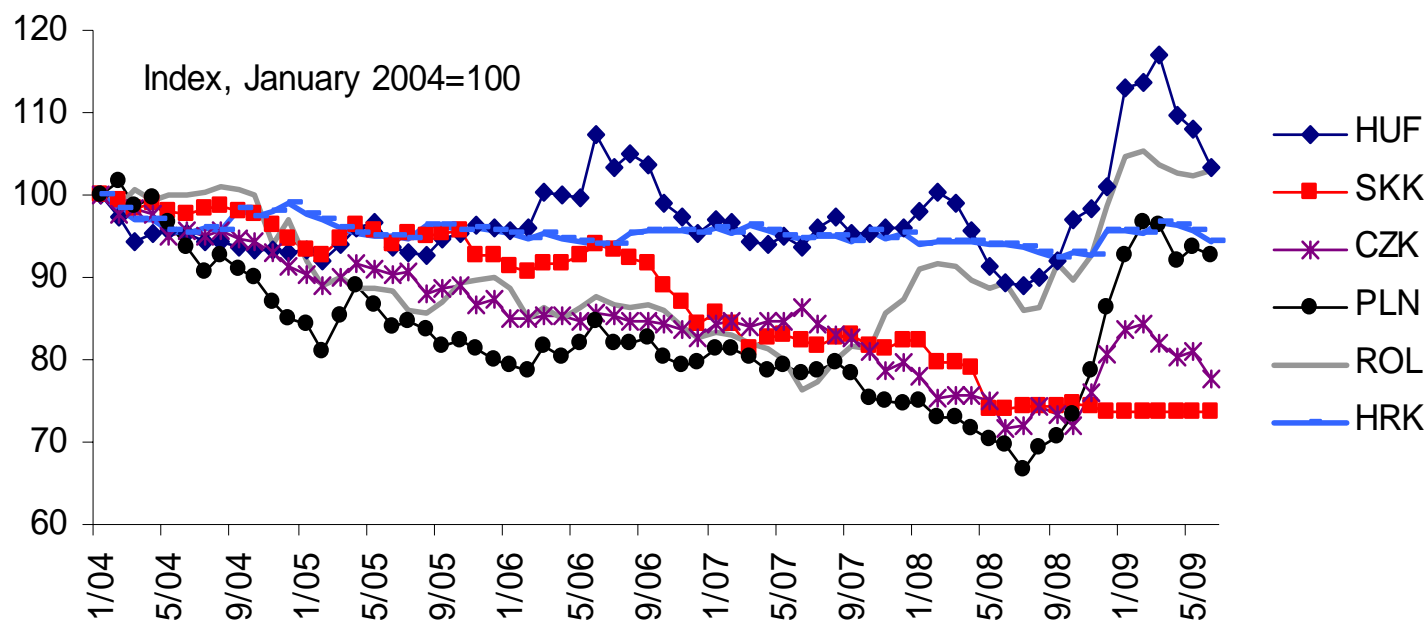
Model residuals by country



III. What exchange rate (monetary) policy options?

- ❑ For the CEE, the current, medium or long run option is the Eurozone
- ❑ Two countries have already joined – Slovenia and, recently, Slovakia
- ❑ This, however, is a double-edged sword – on the one hand it lowers risk perception and, thus, costs of financing, increasing the potential rate of growth, but on the other hand, government or EU/Eurozone shelter might increase the likelihood of poor policy performance
- ❑ In the future the name of the game will be unit labor costs, more than the exchange rate

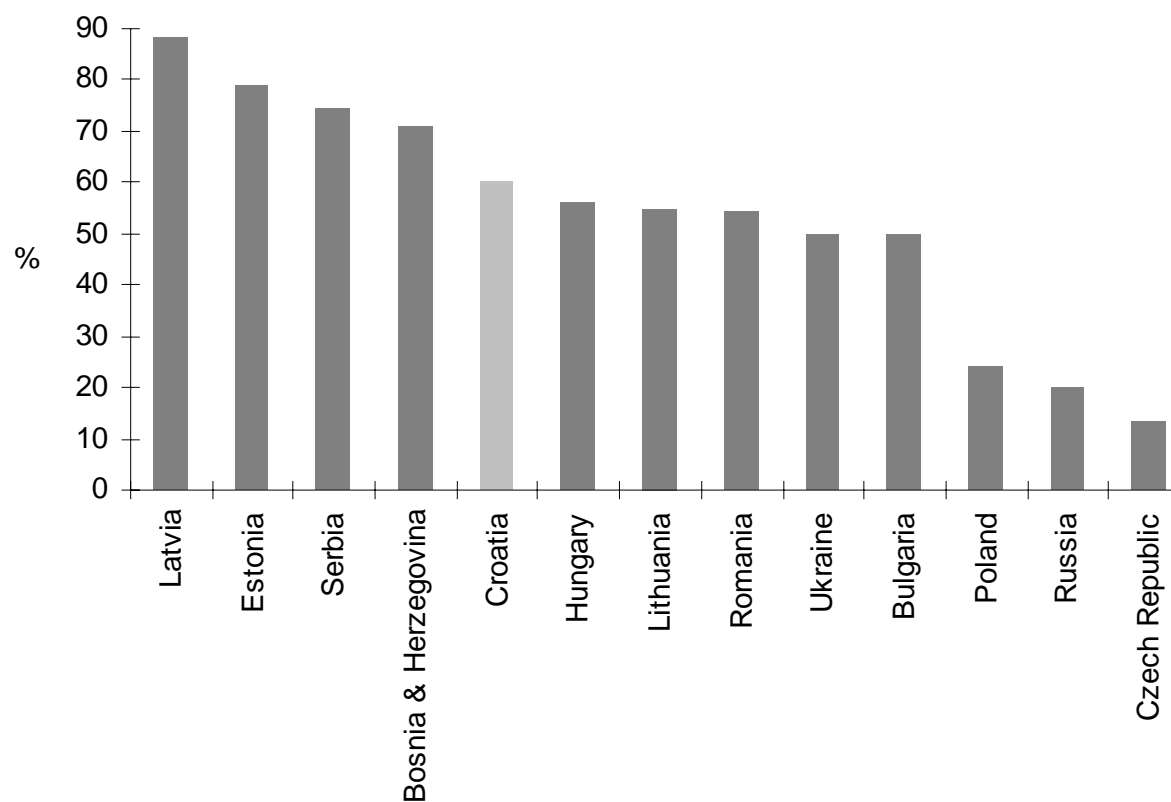
Current: exchange rates in CEE



Sources: CNB; Eurostat

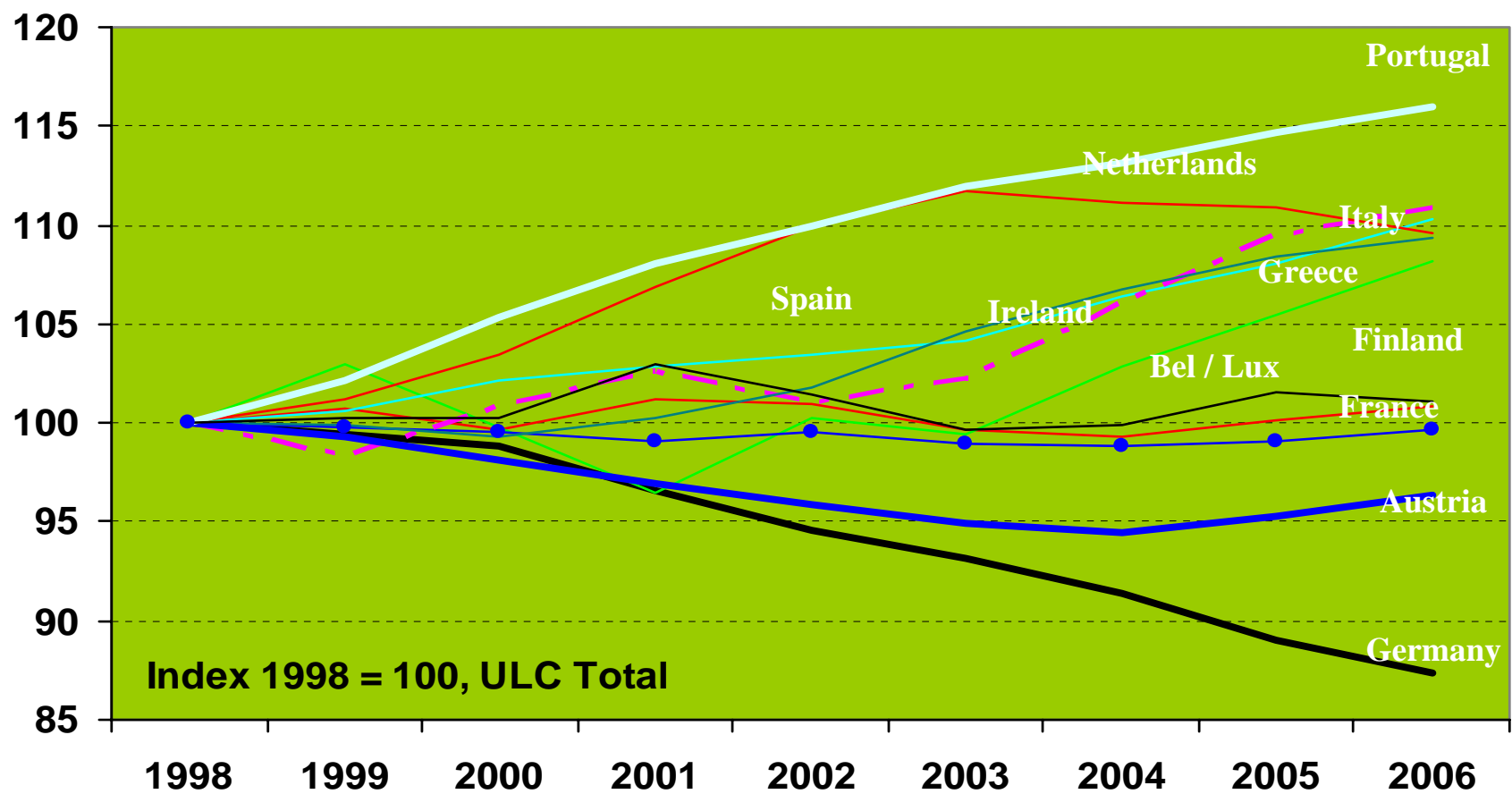
... exchange rate policy choice largely depends on currency substitution...

Share of F/c loans in total loans, 2007

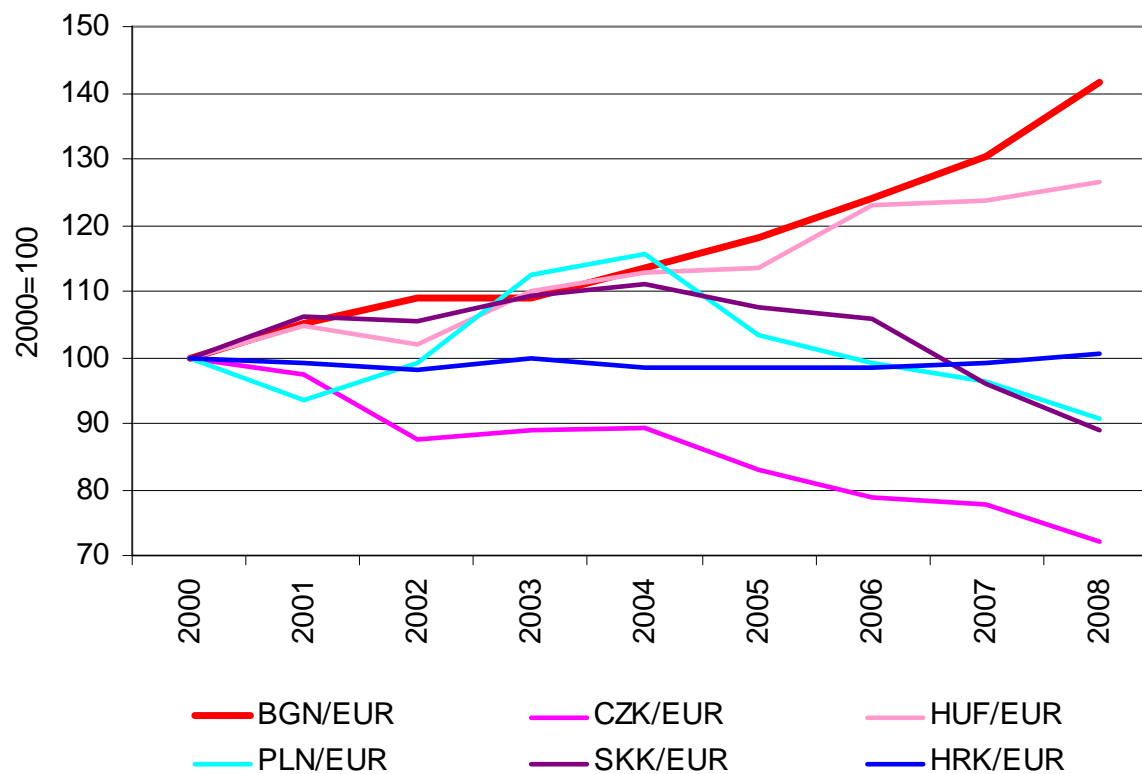


Source: IMF (2009)

Medium to long run: Intra-Eurozone real exchange rates



Real exchange rates



* deflated by CPI

Sources: CNB; Eurostat