

The Czech economy during the economic crisis

Miroslav Singer

Vice-Governor, Czech National Bank

Mathematical Methods in Economics

Kostelec nad Černými lesy, 9 September 2009

Outline

- Global crisis and risks to future developments
- Impacts of the crisis on the Czech financial sector
- Stress tests of the banking system
- Central bank's previous response

Crisis: nihil novum sub sole

- The nature of the crisis remains the same: too much living on debt
⇒ overconsumption [accelerator-multiplier] ⇒ overproduction
⇒ overheating, bubbles in asset markets ⇒ misalignment from fundamentals ⇒ (discontinuous) correction
- A significant feature of the current crisis: a protracted combination of many factors (accumulation of bad loans, financial innovations - securitisation, underpricing of risks, easy monetary policy, failures of financial supervisors, political interests, incentive schemes etc.)
- The crisis originated in the financial sector of advanced economies and evolved quickly to a real economy crisis
- Rescue and stabilisation measures of governments and central banks were first focused on the stability of the financial system and later on supporting demand
- It is an “imported” crisis for most countries of the world (including emerging markets)

The depth of the crisis is not accidental, it is a result of numerous past mistakes and bad decisions

Anti-crisis policies: risks

- Governments and central banks of advanced countries are being unusually activist in this crisis – steps are often taken only to “take steps”
- The “cleaning” effect of the crisis is ignored
- Rescue operations are often dominated by the “too big to fail” argument (it is often too late to ask: “too big to exist”?)
- The main risk: not addressing causes, but mitigating effects (foundations of a future crisis?)
- Relying too much on state interventions increases moral hazard of systemically important entities
- Wrong timing of the exit from expansive policies may lead to excessive fluctuations in the cycle and inflation

The risk of mistreatment of the crisis is comparable with the risks of the crisis itself

Why the path to recovery might be

LONG AND HARD

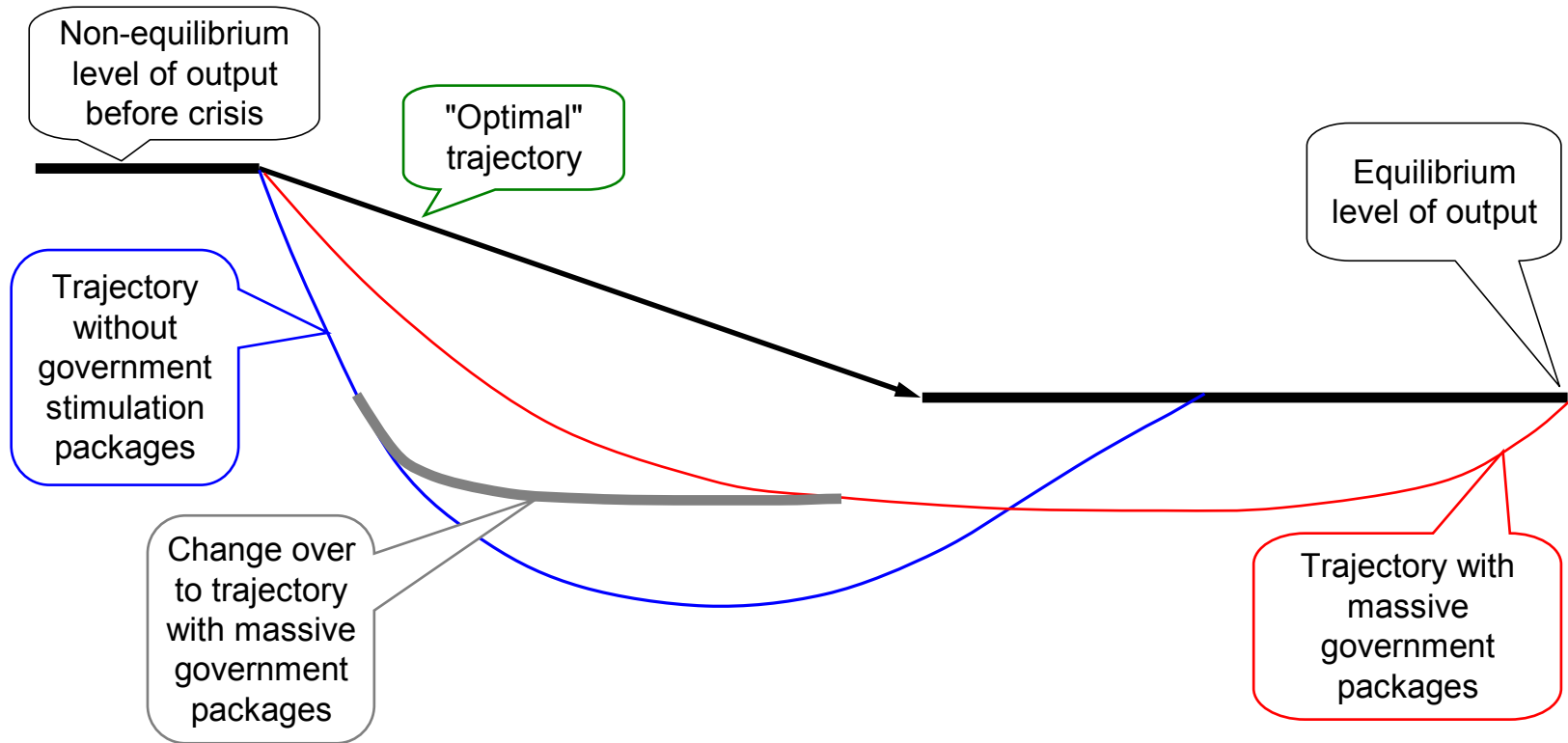
- Because the previous overheating of economies was long-running
- Because financial (and, moreover, synchronised) crises tend to be longer and deeper than “ordinary” crises
- Because there may be latent problems we don't know about yet (credit cards?)

SHORT AND “EASY”

- Because recent fiscal and monetary stimuli were massive
- Because short-term political interest in recovery might outweigh long-term interest in having sound economy (whatever the costs)

Risk of recovery path: stimulatory effects of state interventions will subside earlier than fundamental causes of crisis ⇒ second economic decline may occur (W-shaped crisis)

Various paths out of crisis



The recovery path with sizeable state interventions may be shallower, but will probably be longer than without sizeable interventions. Hypothesis: world economy is moving to path with sizeable state interventions

Risks and bottlenecks of recovery

- Fast growth in public finance deficits:
 - ◆ Rise in interest rates \Rightarrow crowding-out of private investment
 - ◆ Jumps in debt and rise in interest payments
 - ◆ Less room for manoeuvre for fiscal stabilisation
- Activation of crisis feedback:
 - ◆ Unemployment \Rightarrow delay in recovery on demand side
 - ◆ Banking sector \Rightarrow renewed rise in uncertainty and lack of confidence
- Even more moderate negative growth in economies, if long-running, may be detrimental to financial sector

Signals that the recession will end soon are proliferating; however, the recovery process is still subject to great uncertainty

Impacts of the crisis on the Czech financial sector

Structure of impacts

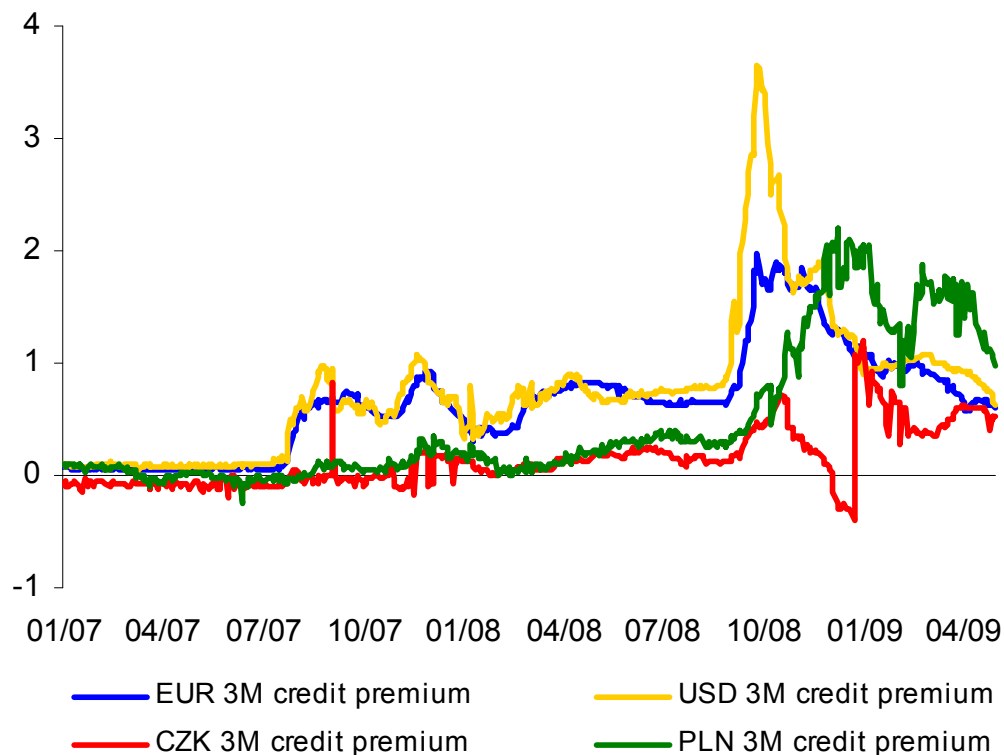


Impacts of the financial crisis on the domestic financial sector: indirect channel

- Lehman Brothers failure generated overnight a collapse of confidence between financial institutions:
 - ◆ Increased risk premium on markets
 - ◆ Fall in liquidity
 - ◆ Increased volatility
- Cooling of housing market
- Stock market fall (limited significance in the Czech R.)

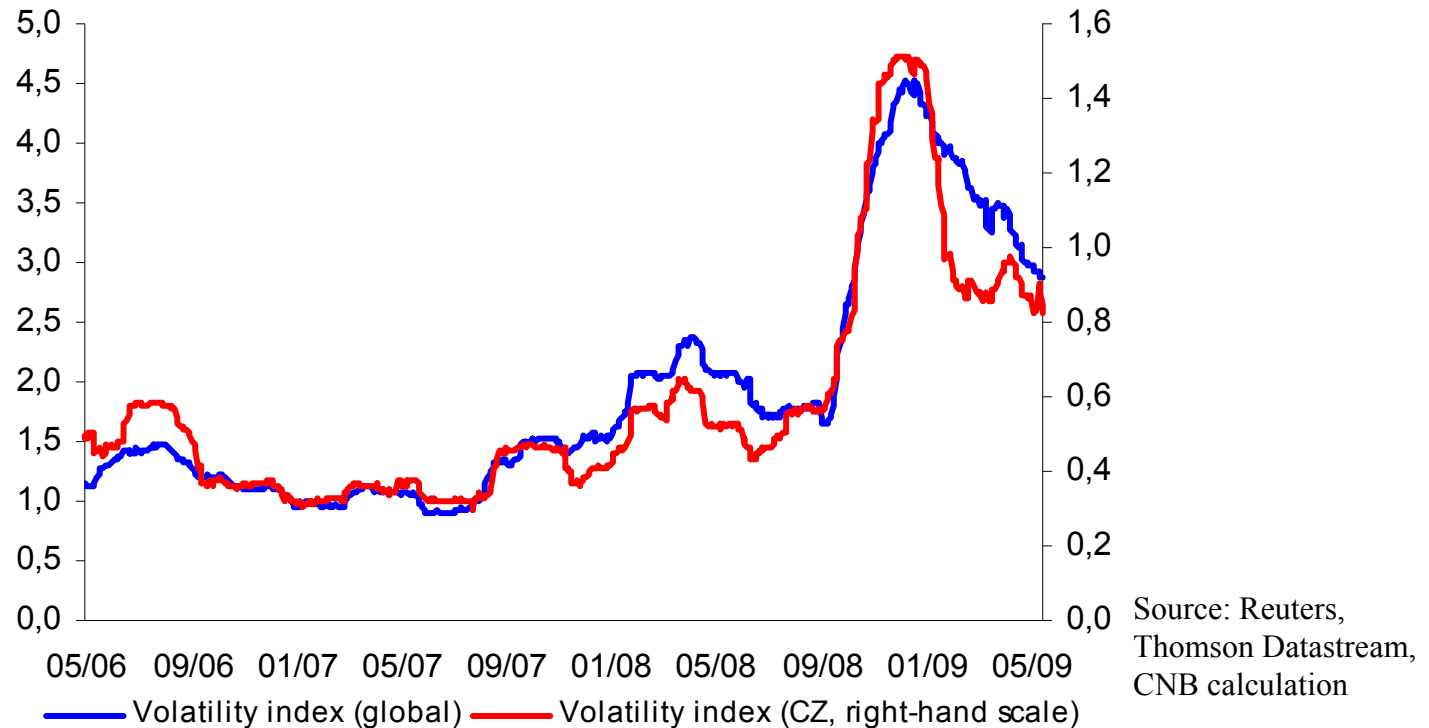
The financial crisis snowballed, having major impacts on some sectors

Credit premia on interbank market (%)



Note: The credit premium is calculated as a difference between the 3M interbank rate and the 3? OIS of the relevant currency. The fall in the credit premium in the Czech Republic in January 2009 was due to a decrease in OIS of 150 points on 7 January 2009. The decrease only reflects a lower market liquidity and the overall shallowness of the OIS market.

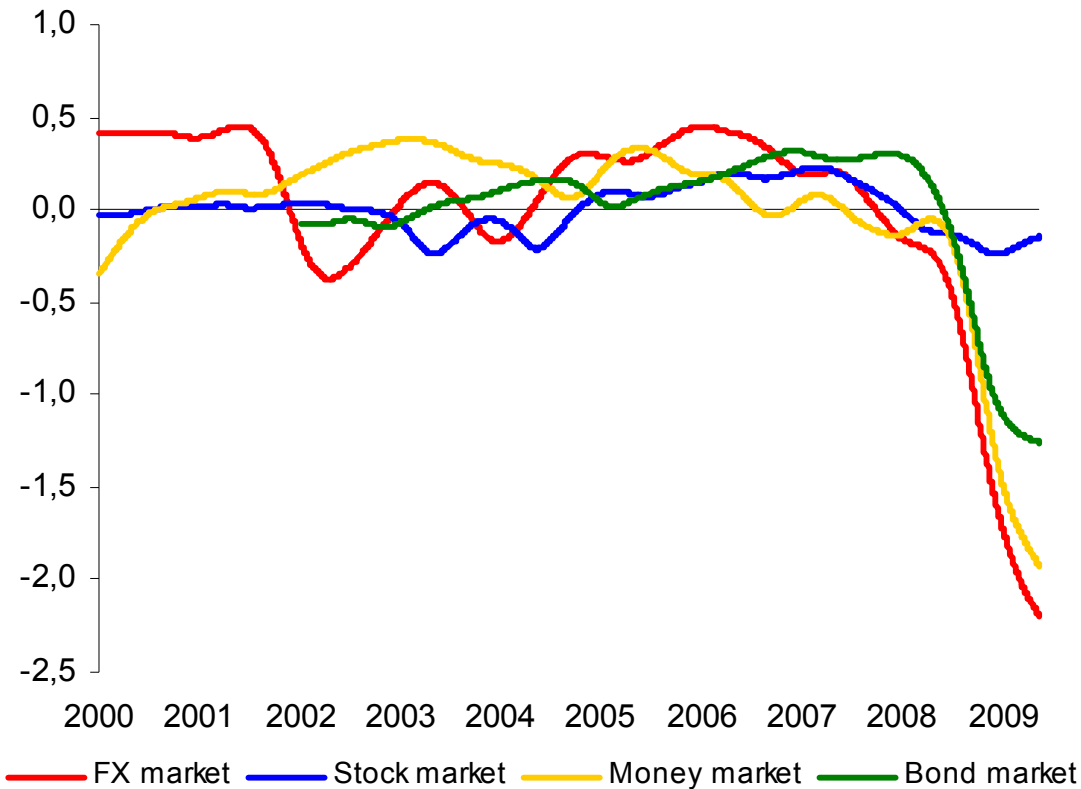
Volatility on domestic and foreign markets (historical volatility over last 90 days)



Note: global volatility index = sum of historical volatility of S&P500, DJ Stoxx50, USD/EUR and YEN/USD exchange rates, 10Y German and US government bonds, prices of gold, oil, and 3M Euribor and 3M Libor over the last 90 days. Czech volatility index = sum of historical volatility of the PX stock index, CZK/EUR exchange rate, 10Y government bond and 3M Pribor.

Market uncertainty led to increased volatility

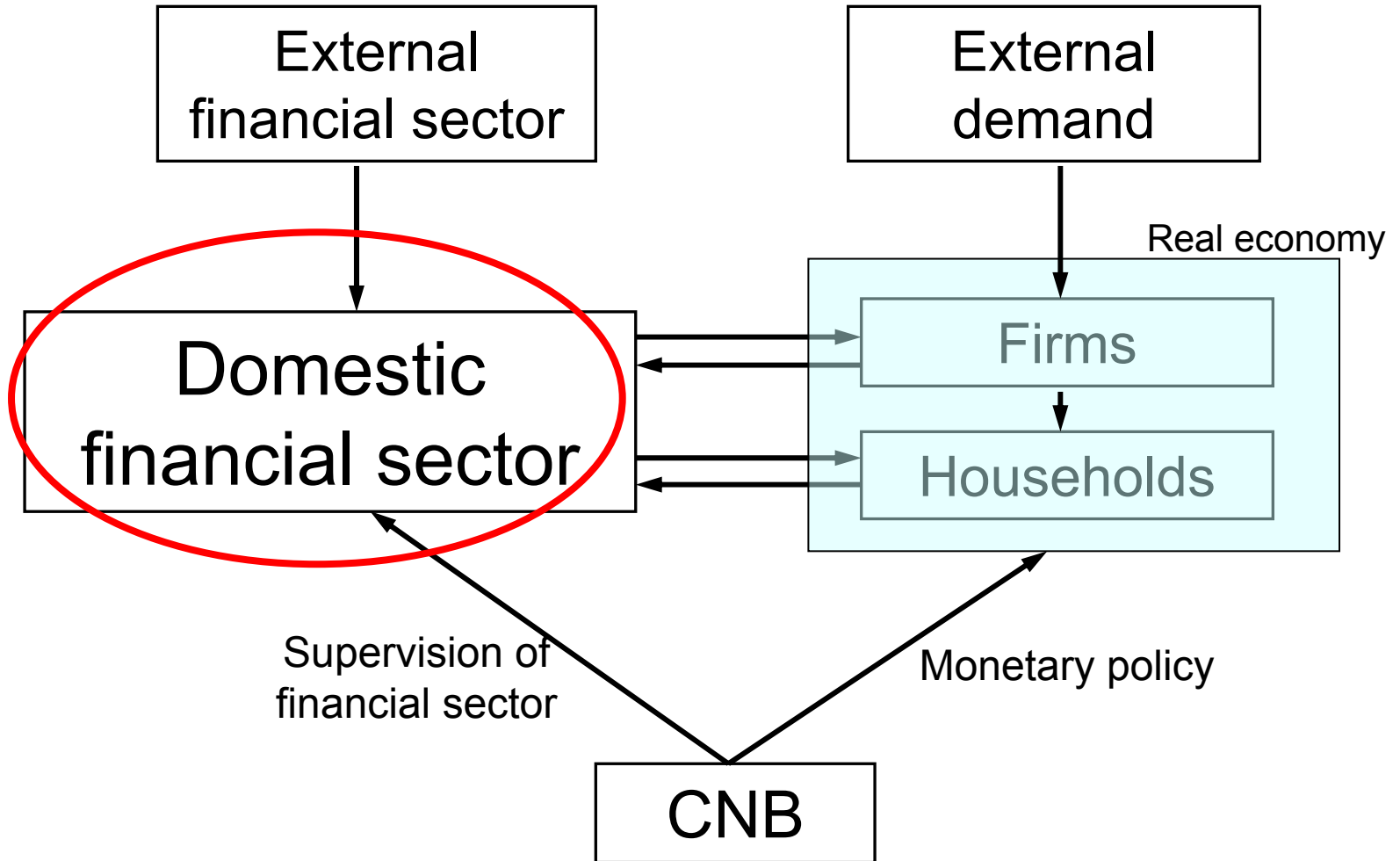
Market liquidity indicators for individual markets



Source: ČNB, Bloomberg, Thomson Datastream, ČNB calculation

Liquidity dropped most on the foreign exchange market and the money market

Structure of impacts

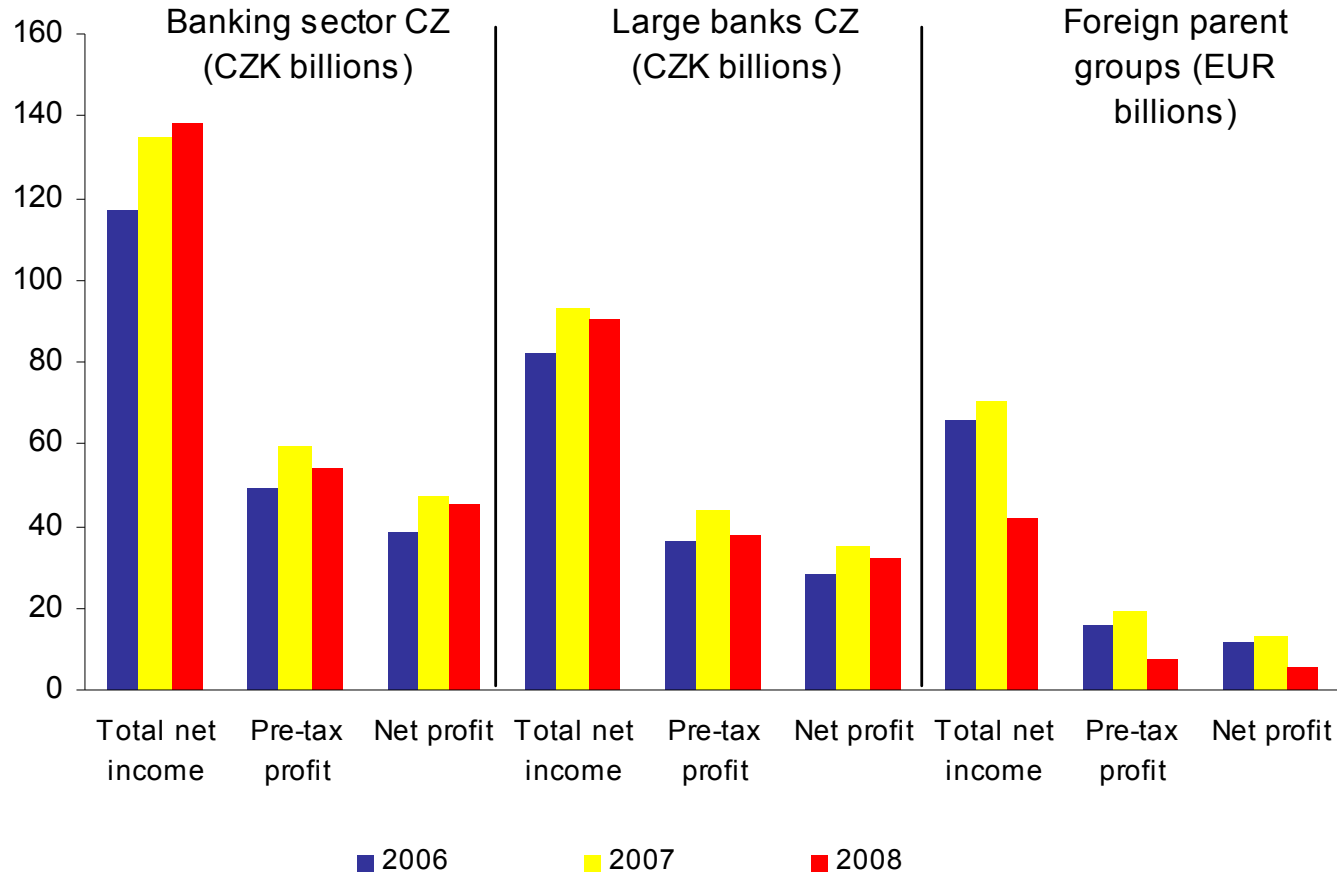


Starting situation of the domestic financial (banking) sector

- Excess liquidity (CNB withdraws liquidity)
- Is relatively “isolated” (has enough funds to provide loans from primary deposits)
- Has traditional conservative model (sufficient growth opportunities)
- Has low NPL ratio
- Small volume of foreign currency loans (not dependent on functioning of exchange rate risk hedging markets)
- Ratio of “toxic” assets is negligible (less than 1% of assets)
- Is well capitalised and highly profitable

The financial crisis found the Czech financial system in a solid starting situation

Profit in banking sector

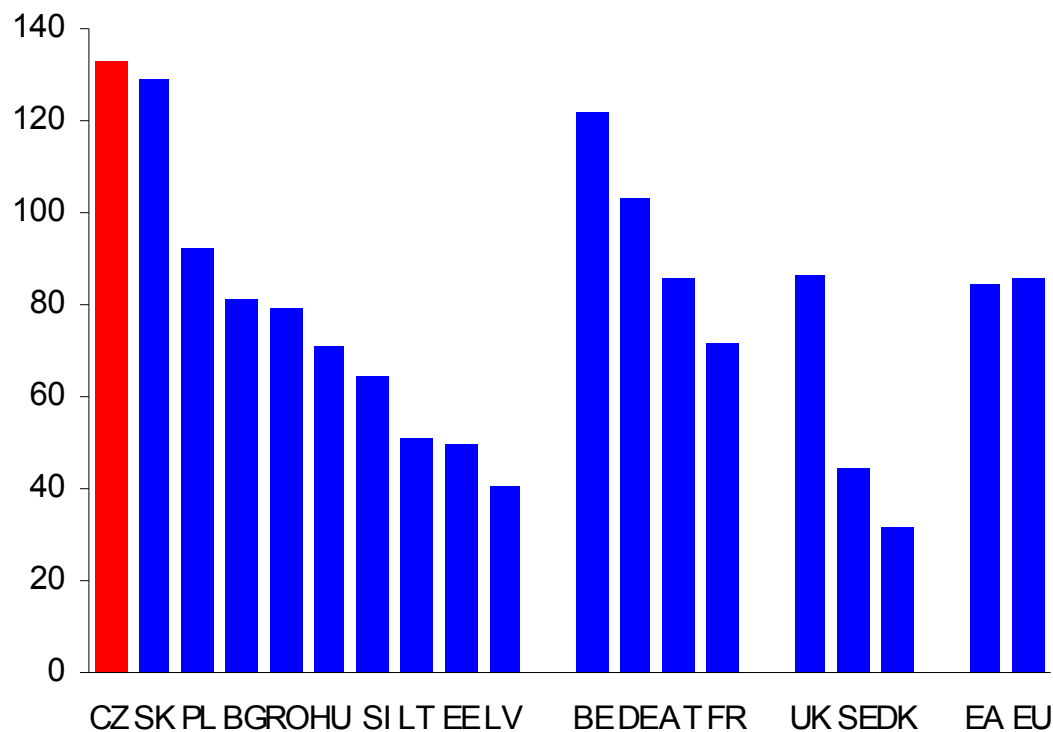


Unlike their foreign parents, Czech subsidiaries suffered hardly any profit losses in 2008



Deposit-to-loan ratios in selected EU countries in 2008

(%; resident loans and deposits, non-bank institutions)

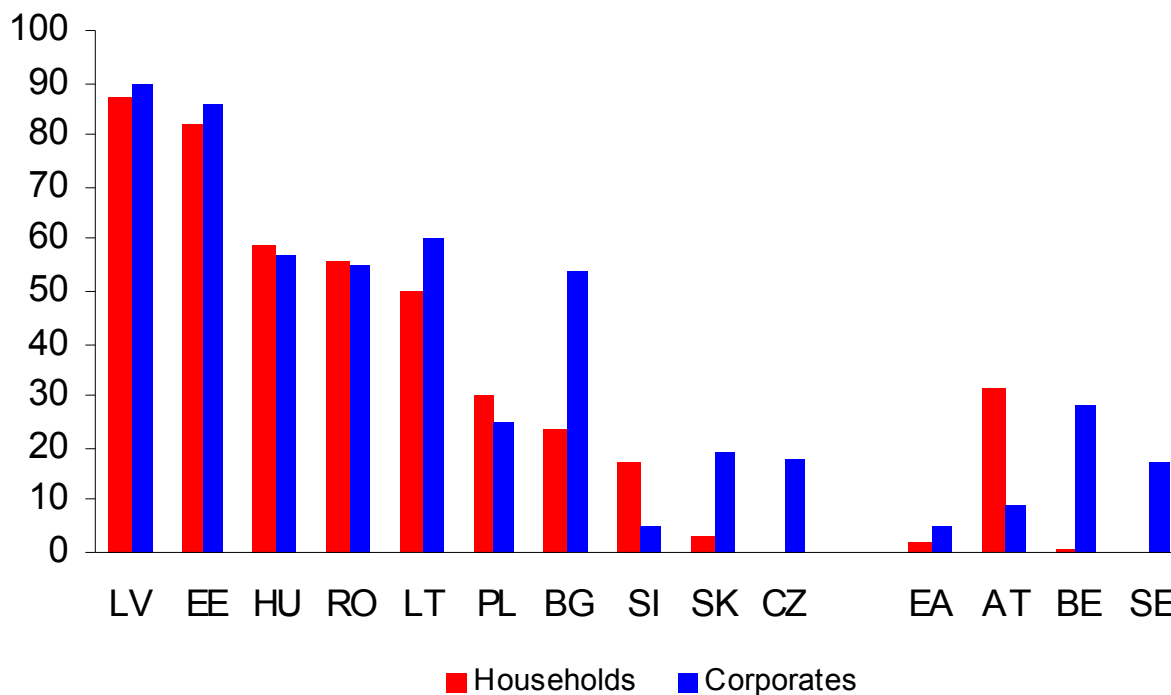


Source: ECB

The Czech Republic had the highest deposit-to-loan ratio

FX loans in selected EU countries in 2008

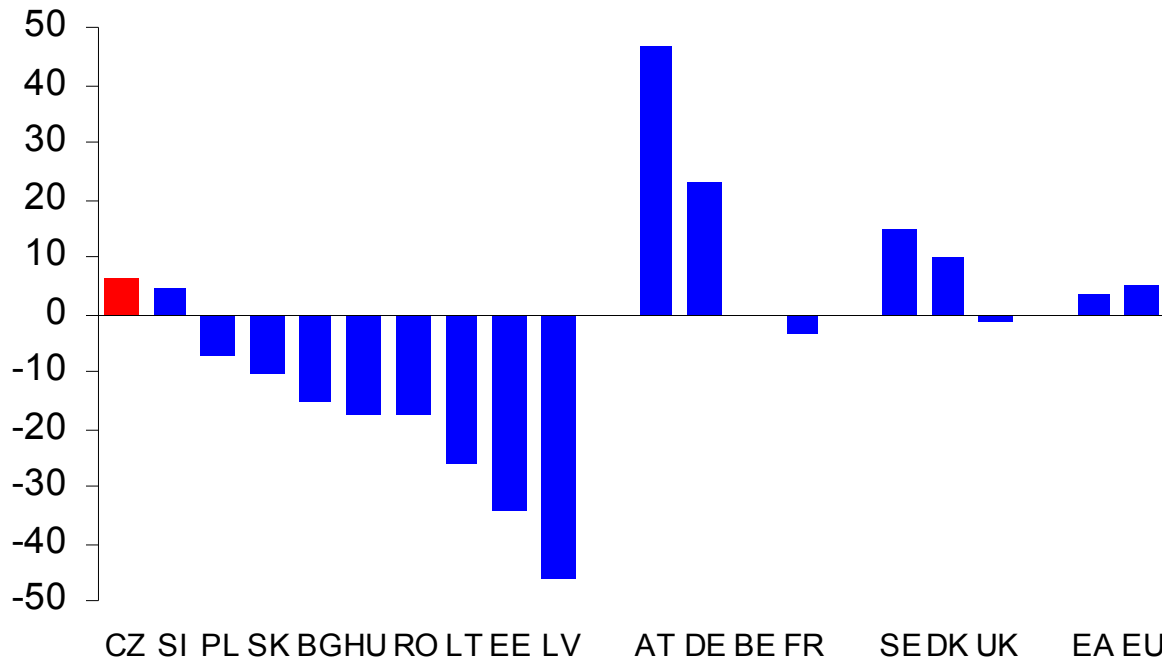
(% of total loans to given sector)



Source: BIS, ECB, central banks

Czech households have a zero share of foreign currency loans

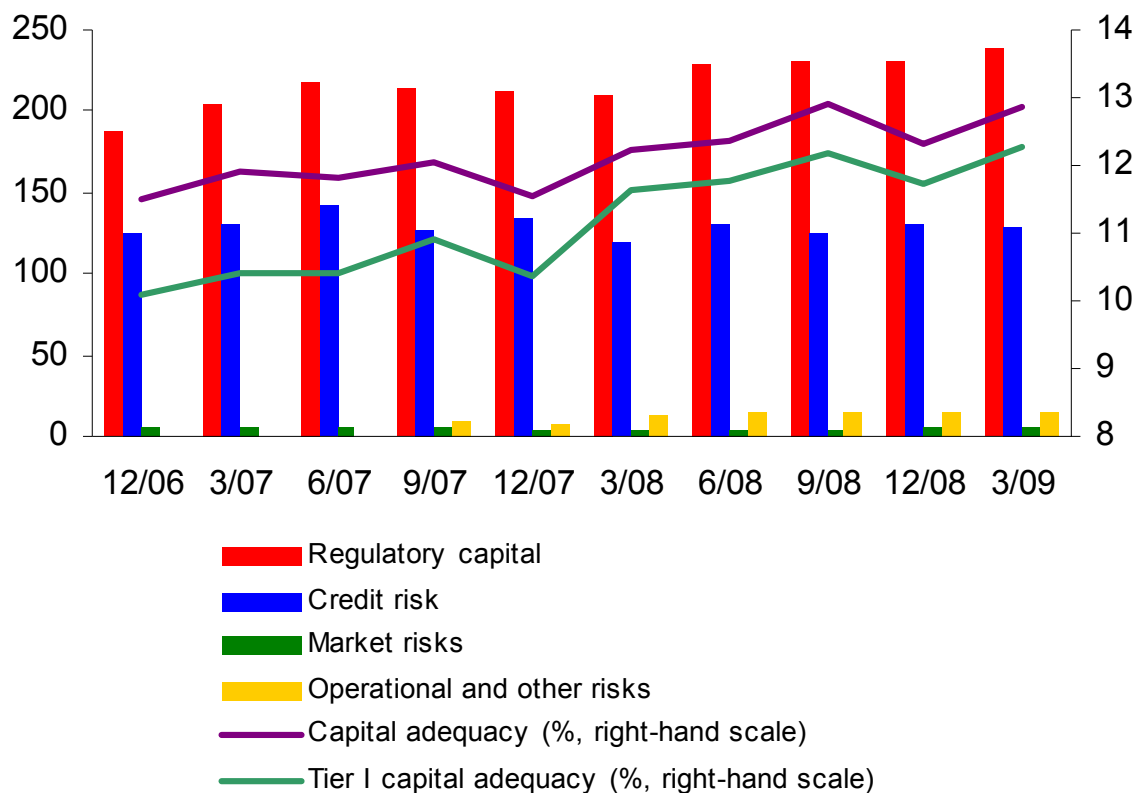
Net external positions of selected EU countries' banking sectors in 2008 (% of GDP)



Source: IFS, IMF

The Czech Republic and Slovenia are the only new EU member states that are independent of external funds (positive net external position)

Capital and capital requirements for types of banking risks (CZK bn, %, bank. sec.)

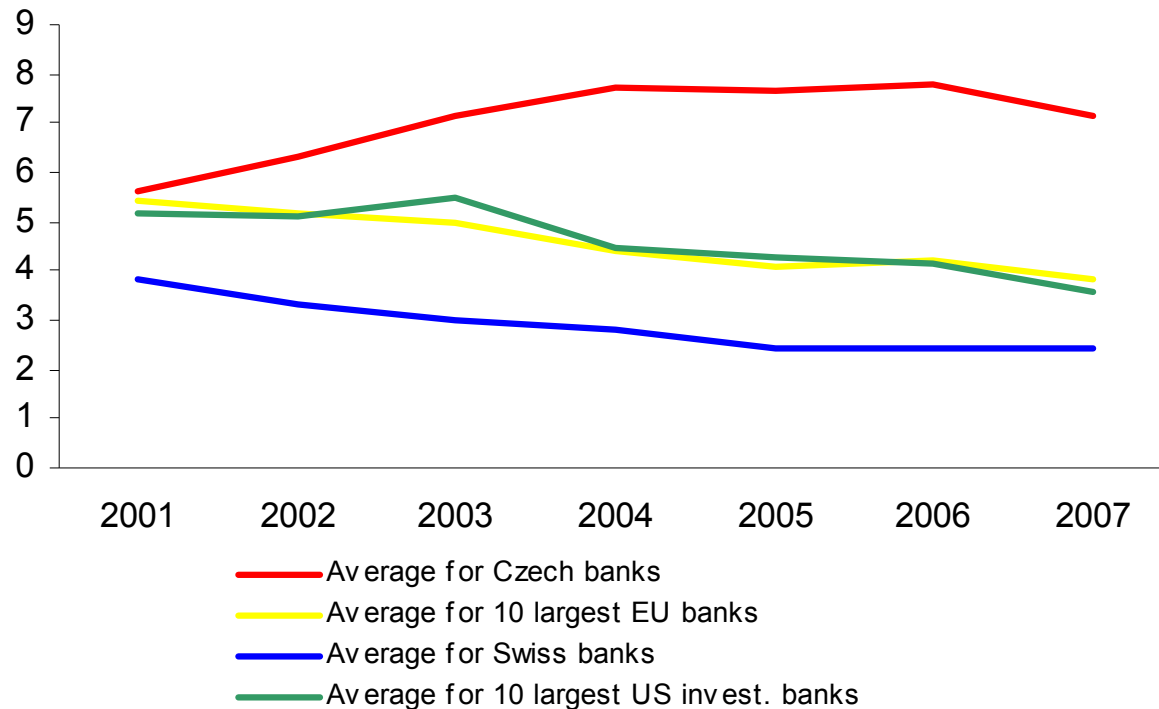


Source: CNB

The Czech banking sector remains sufficiently capitalised



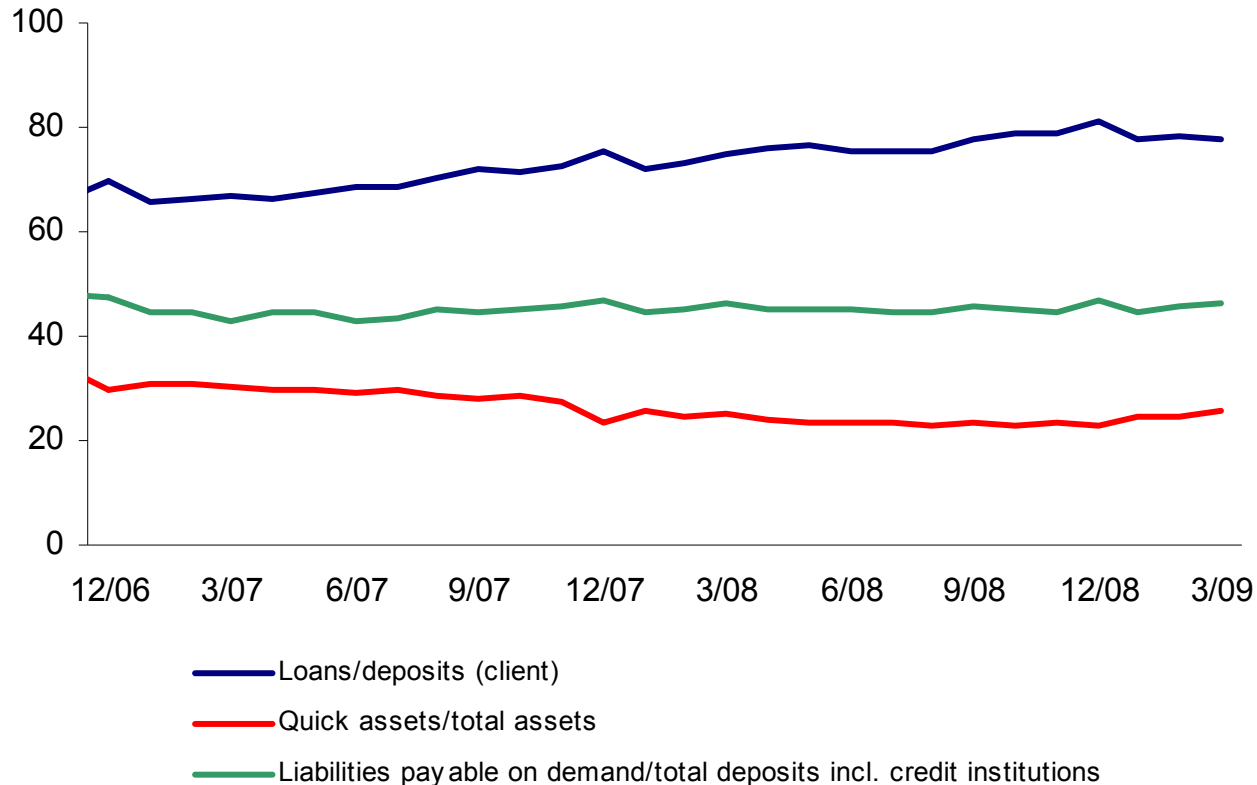
Capital ratios (capital/total assets) of Czech and foreign banks (in %)



Source:
BankScope,
CNB
calculation

Domestic banks are very conservative compared to foreign banks

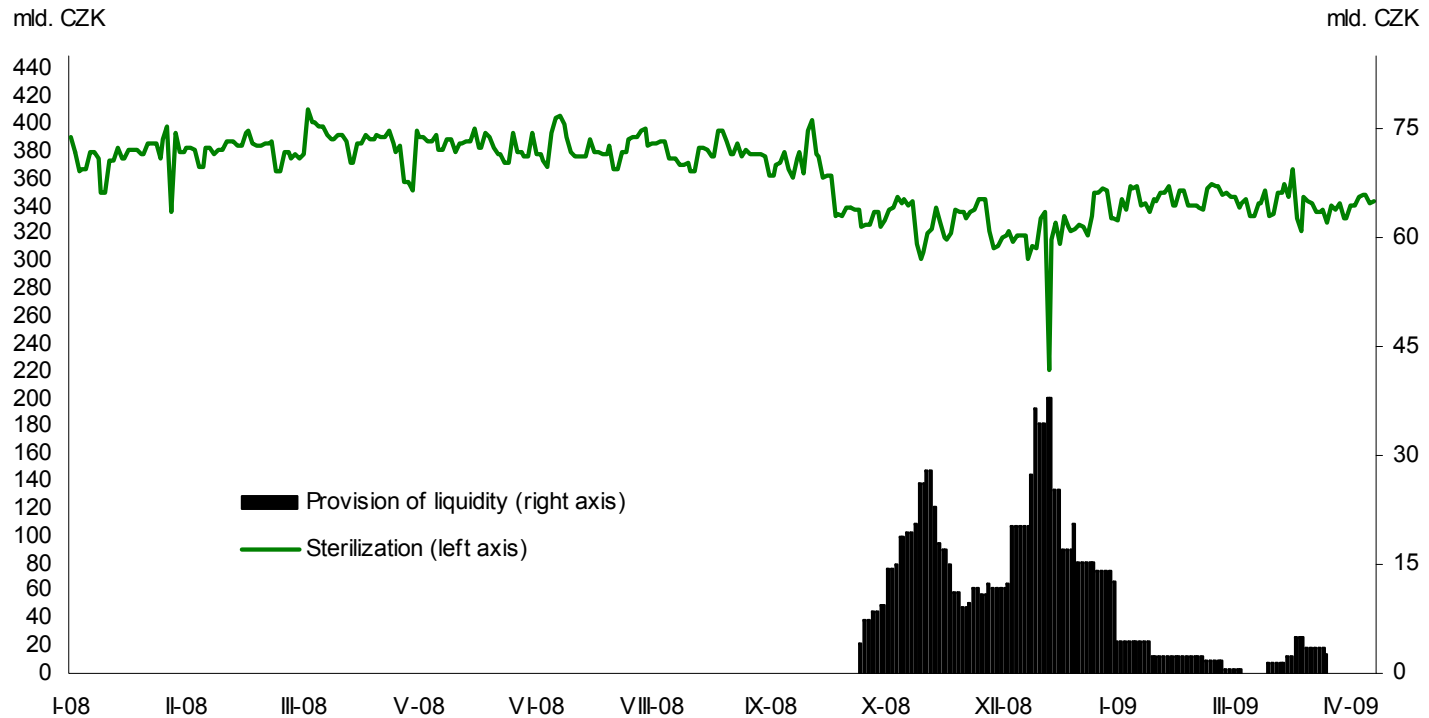
Liquidity ratios in the banking sector (%)



Source: CNB

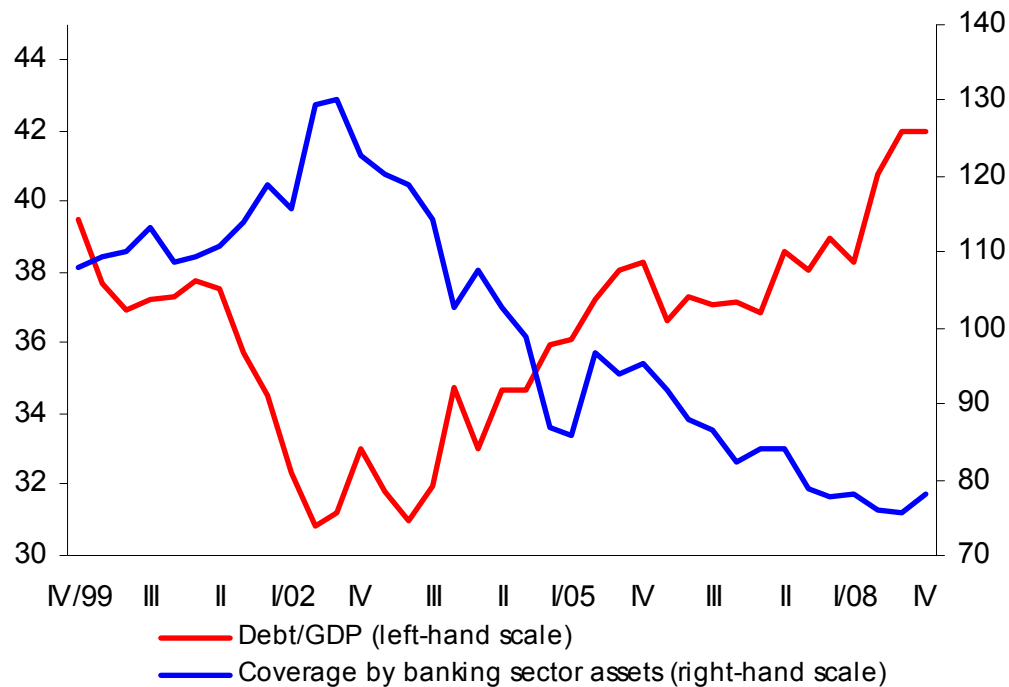
Czech banks remain very liquid

Withdrawal and provision of liquidity (in CZK billions)



The good liquidity situation is also demonstrated by the bank's recent low take-up of liquidity-providing facility introduced in autumn 2008

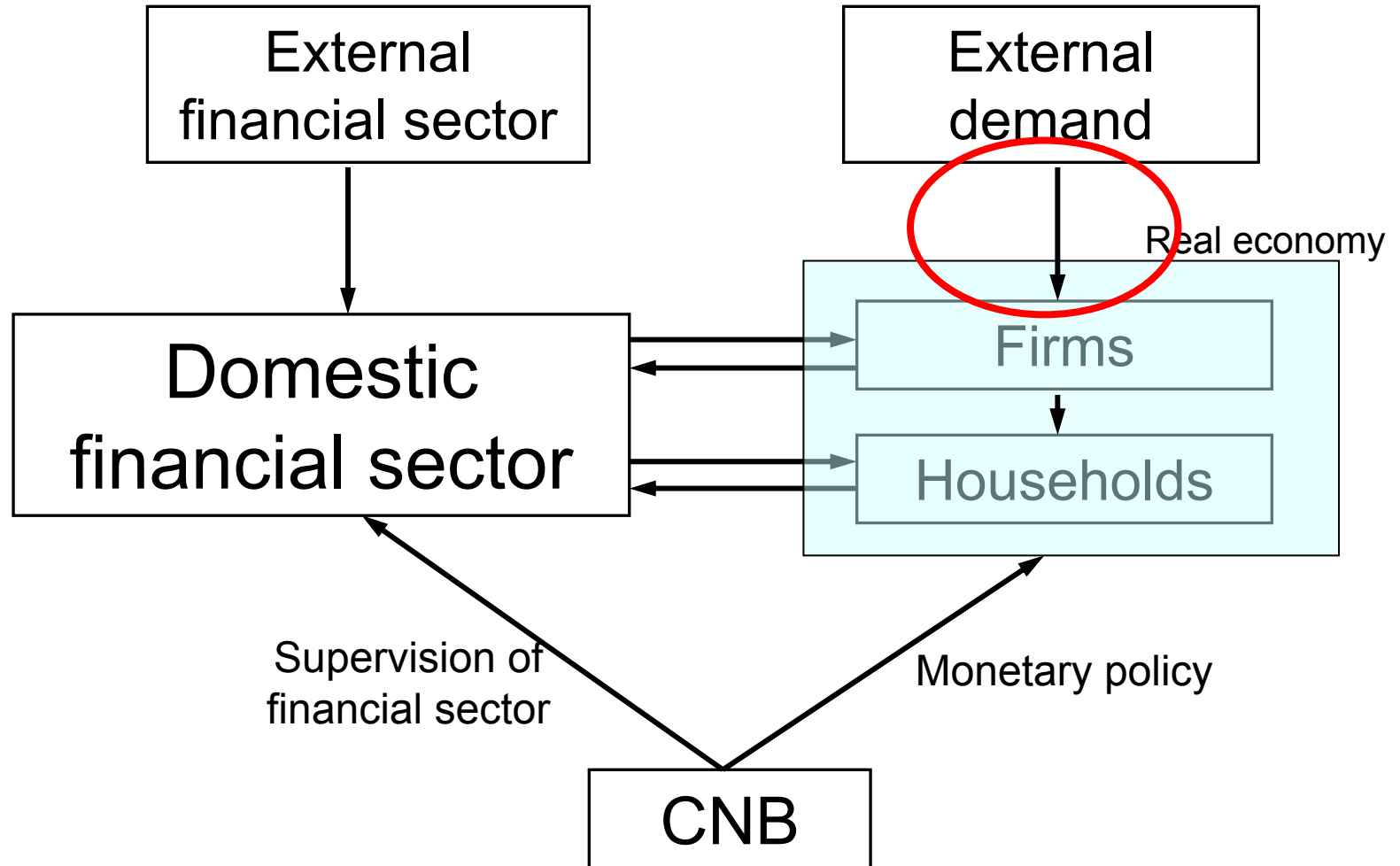
Ratio of the gross external debt of the Czech Republic to GDP and its coverage by the external assets of the banking sector (CNB and commercial banks)



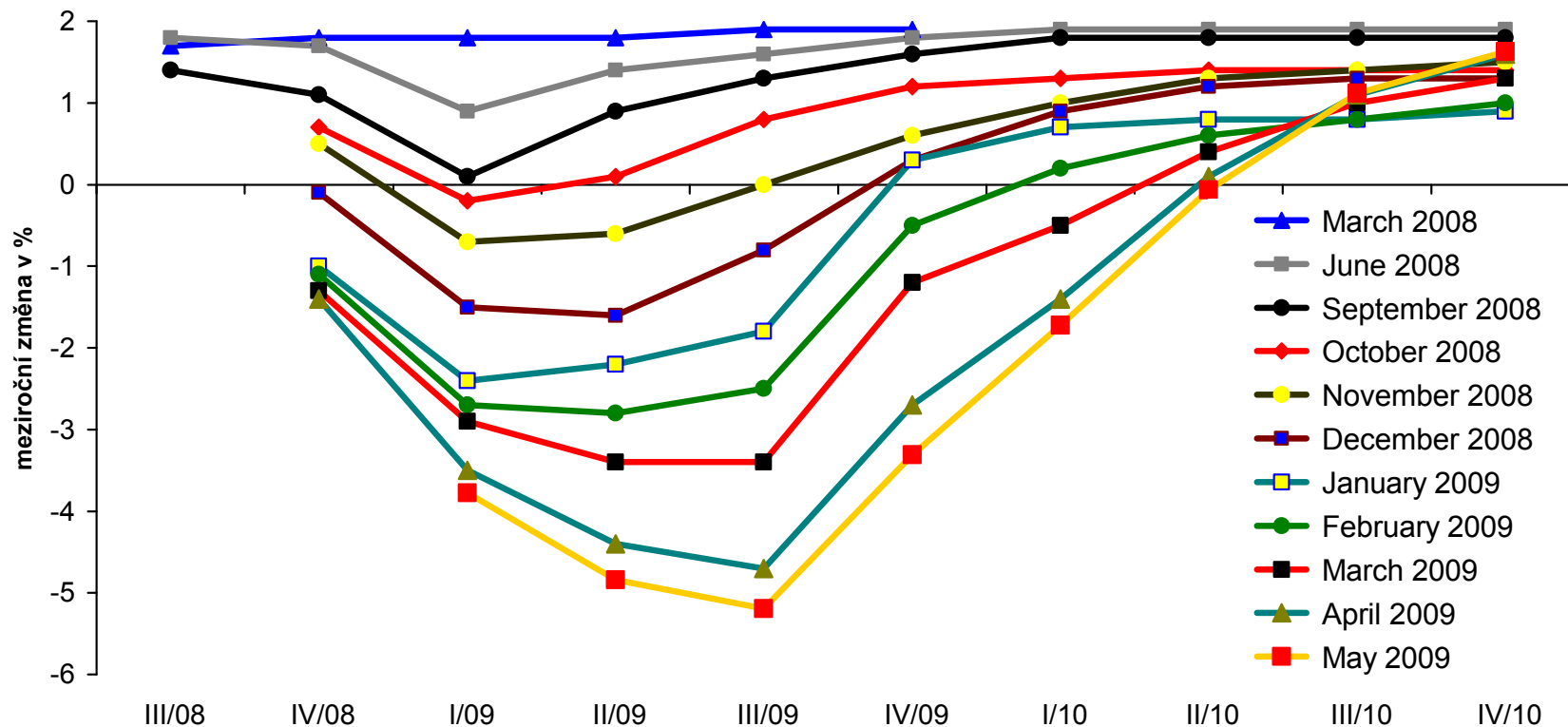
Source: ČNB

Assets of the banking sector account for around 80% of total external debt, which can be regarded as sufficient

Structure of impacts

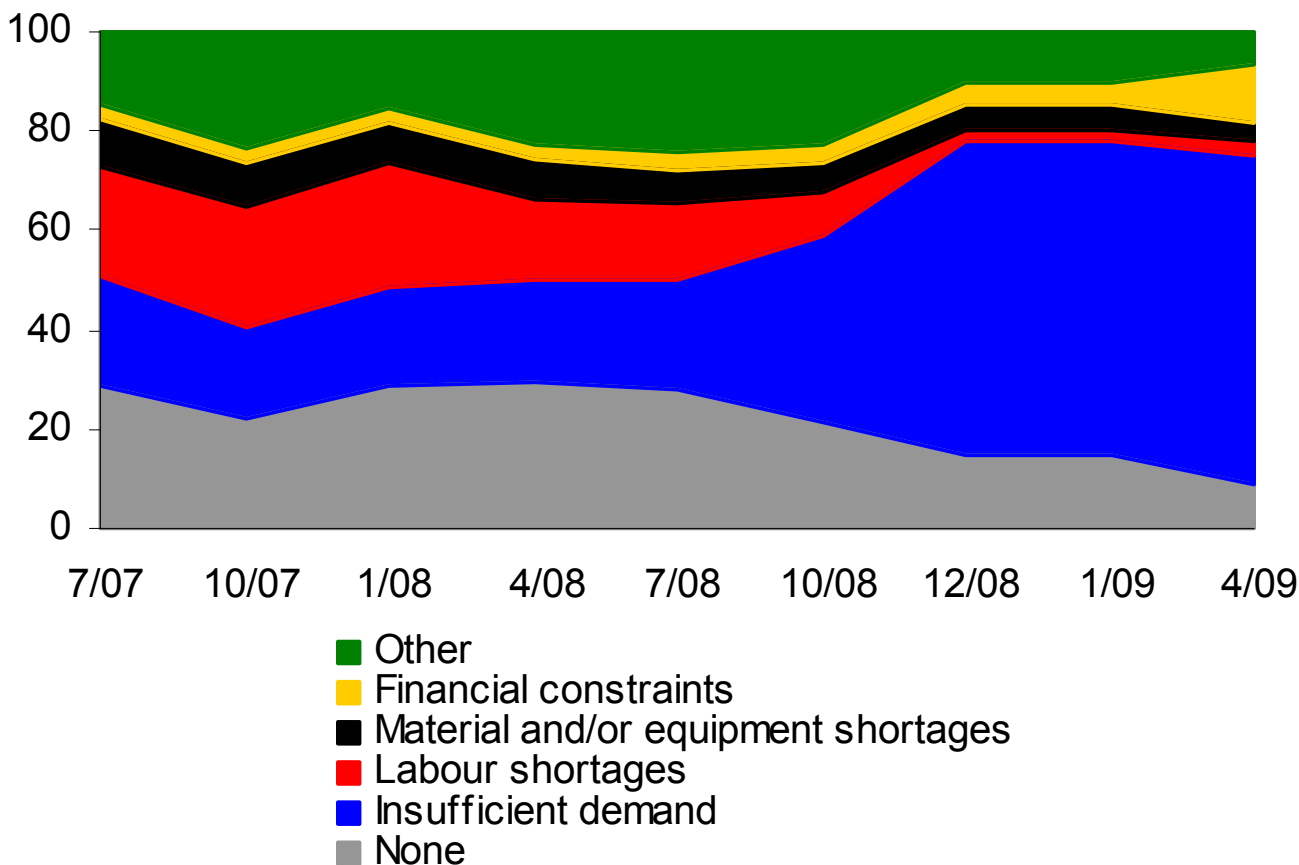


External demand (Consensus Forecasts)



External demand growth forecasts for 2009 were systematically deteriorating between spring 2008 and spring 2009

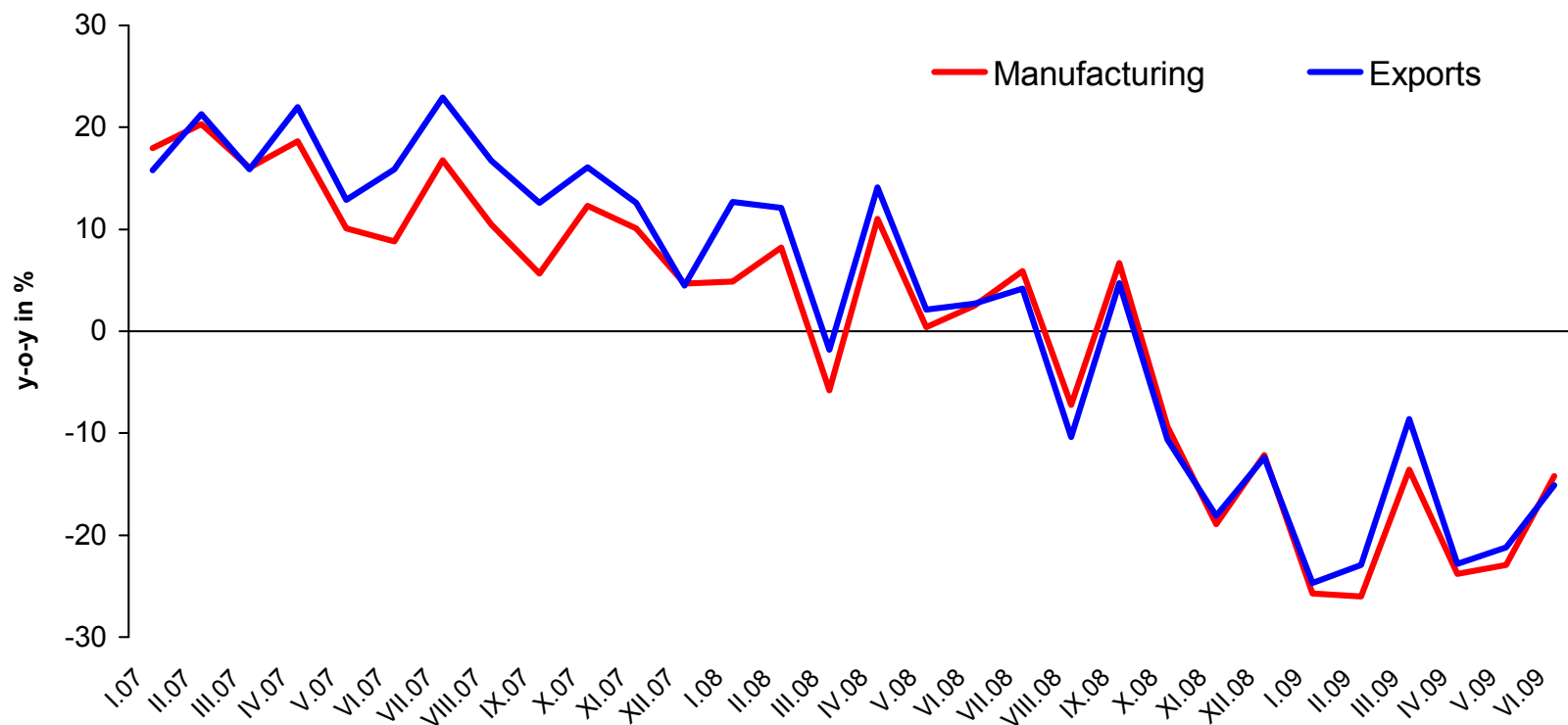
Barriers to growth in industry (in %)



Source: CZSO

Within several months, the insufficient demand has become the main barrier to growth in industry

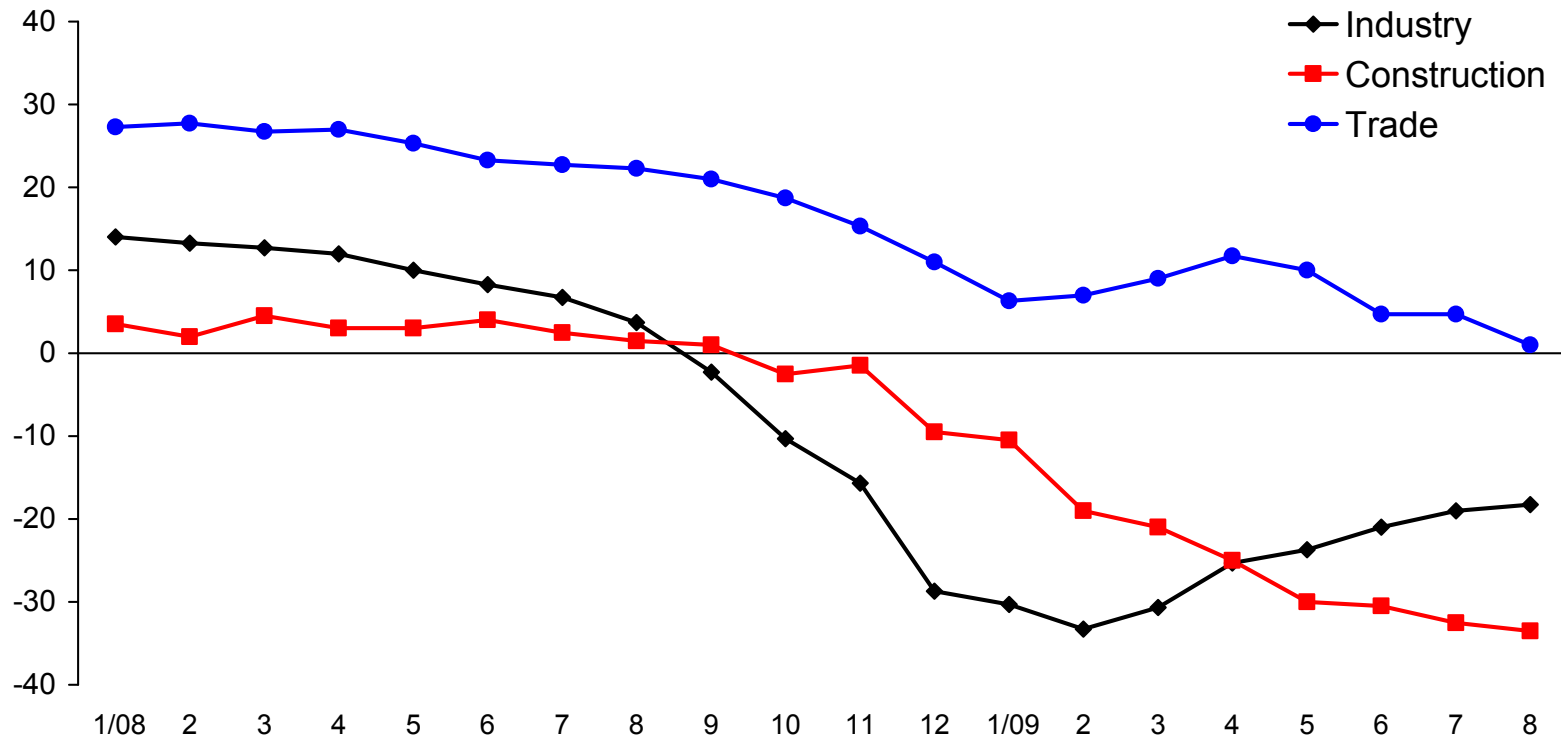
Manufacturing and exports



Source: CZSO

Manufacturing and exports were the "gate of entry" of the crisis; we may now be at the bottom of the crisis (in year-on-year terms)

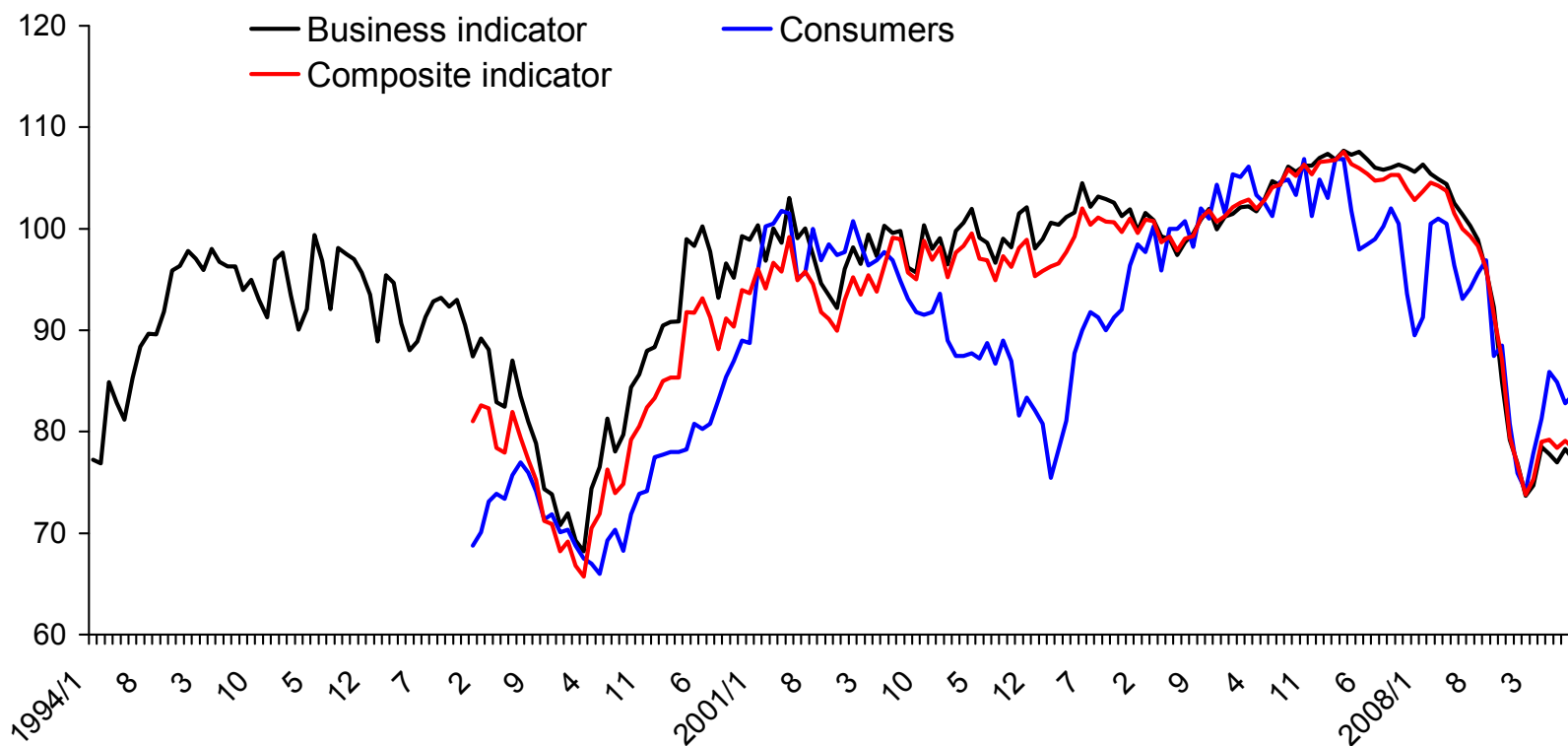
Confidence indicators



Source: CZSO

While the confidence indicator in industry is already “improving” (it is less worse), that in construction keeps deteriorating

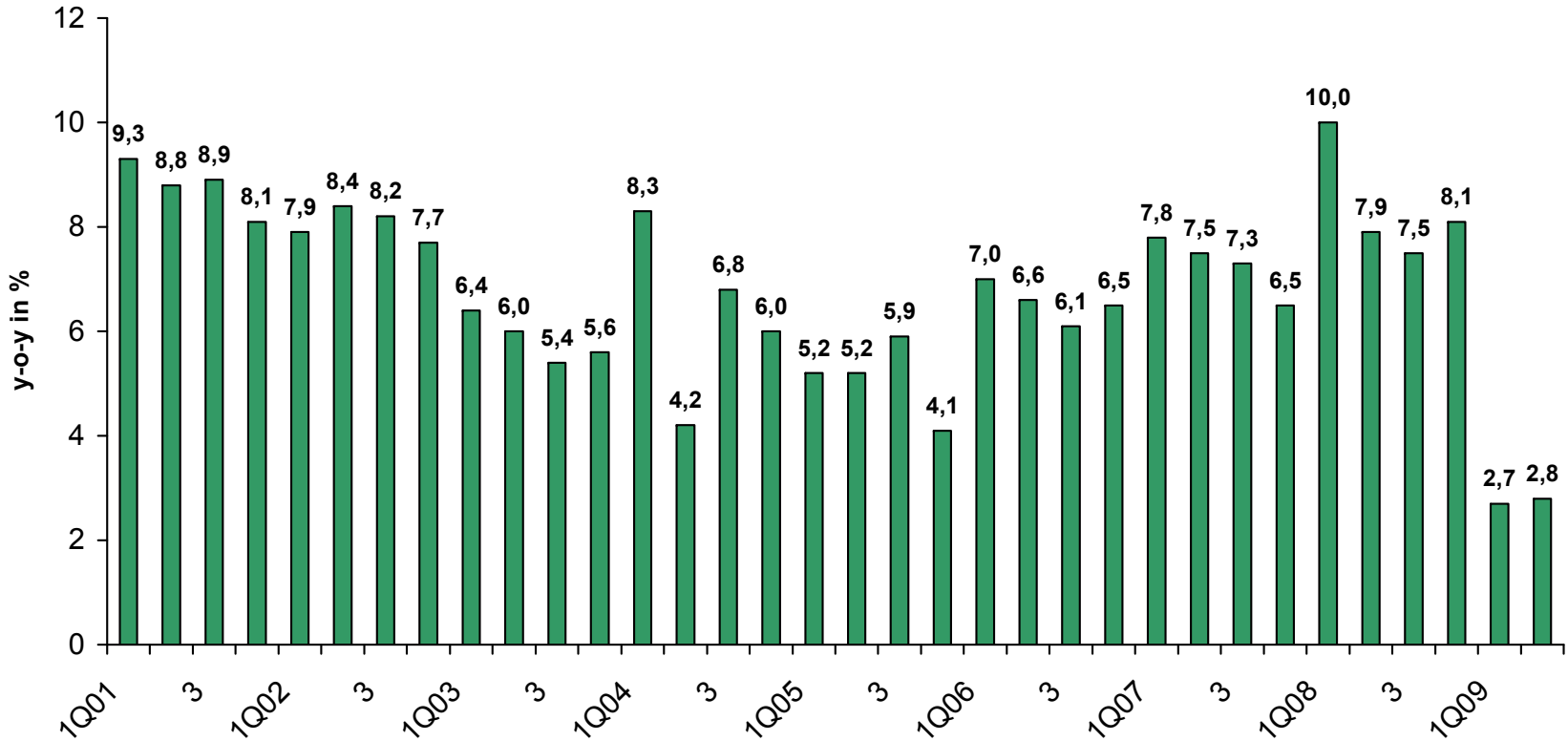
Seasonally adjusted confidence indicators



Source: CZSO

The aggregate confidence indicator is no longer deteriorating

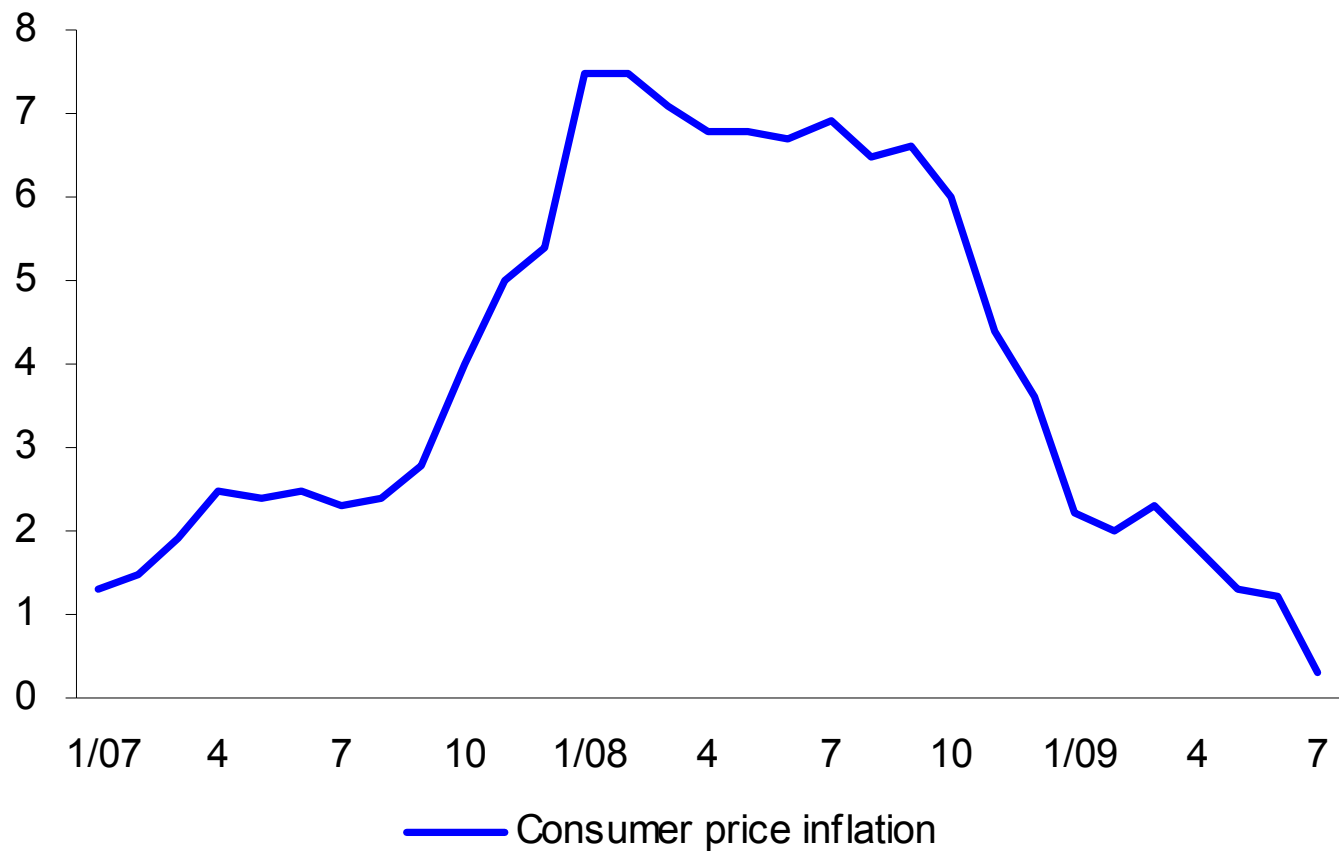
Nominal wage growth



Source: CZSO

In 2009 Q1 and Q2, nominal wages showed the lowest growth since 1990

Consumer price inflation

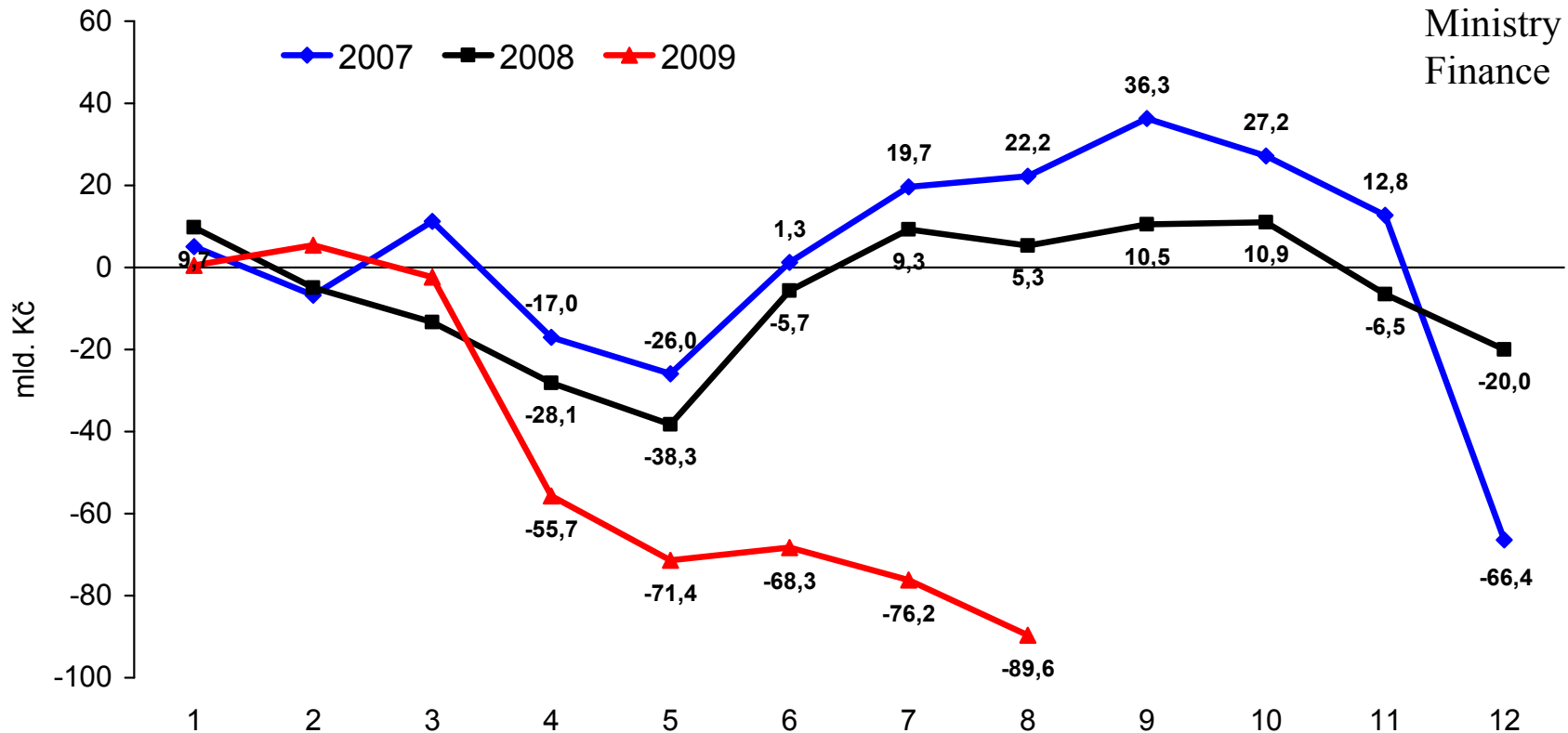


Source: CNB

Inflation continued falling sharply in recent months

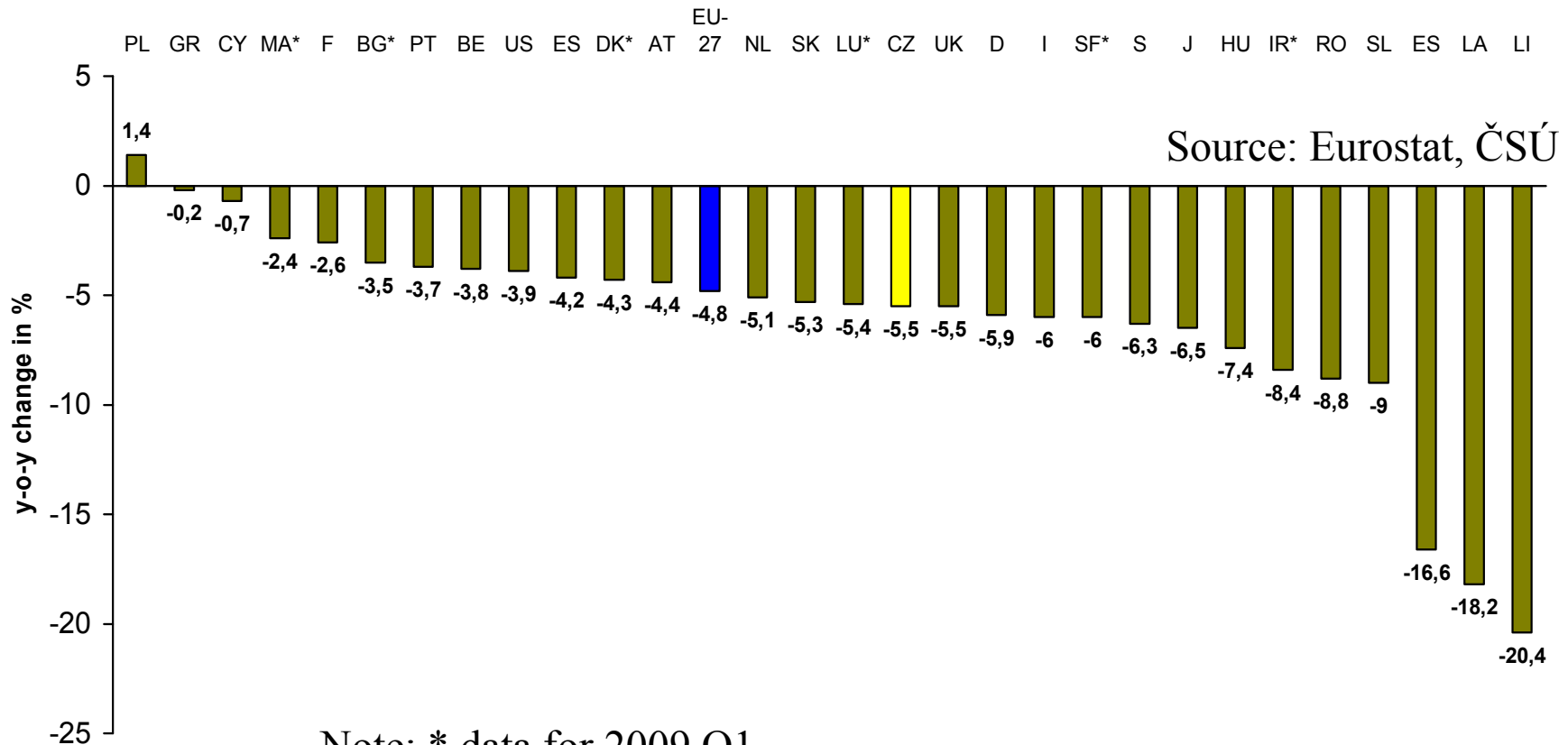
State budget balance

Source:
Ministry of
Finance



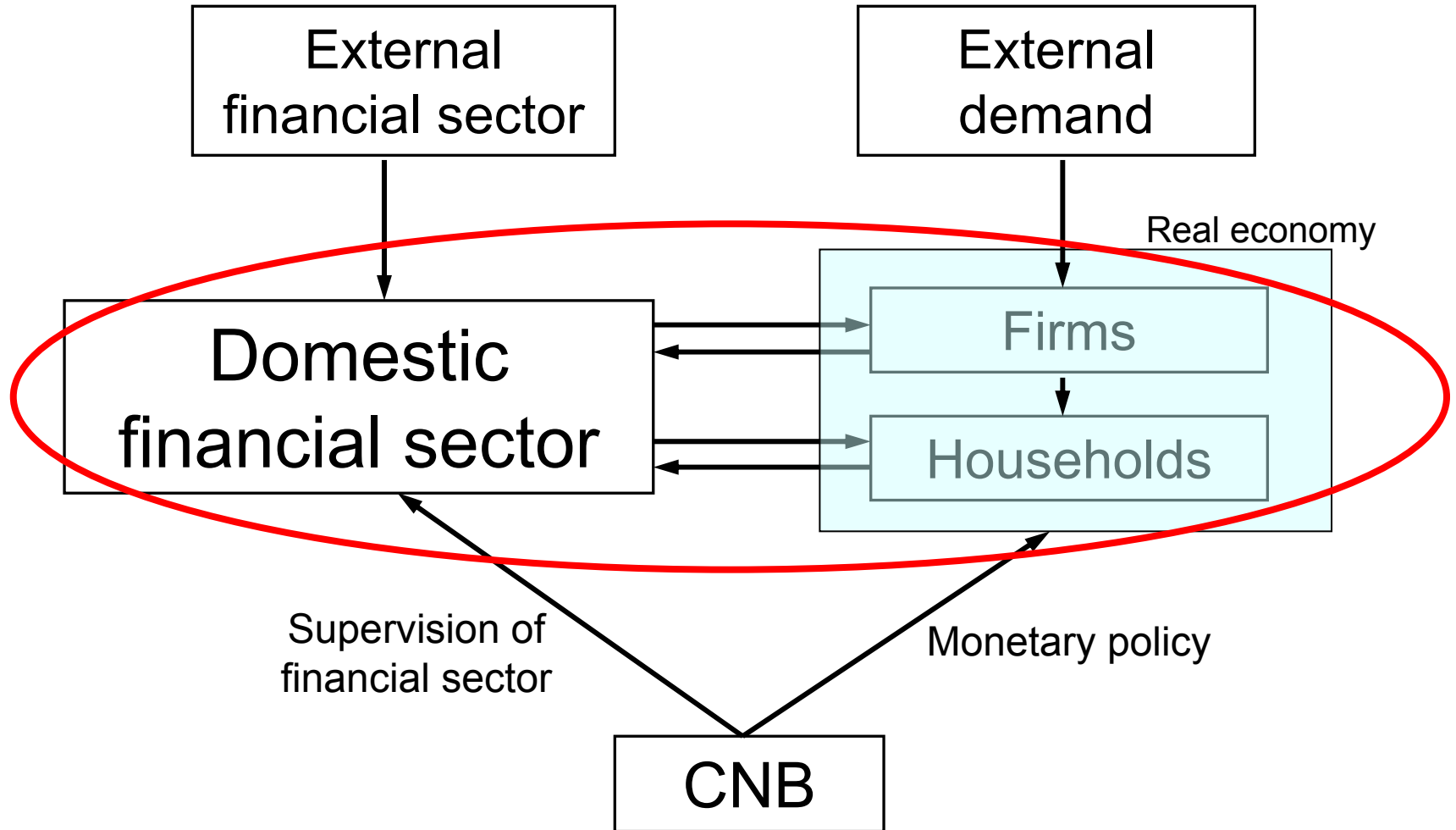
The economic crisis is clearly reflected in the deteriorating state budget balance (vs. surpluses in 2007 and 2008)

GDP in selected countries (2009 Q2)



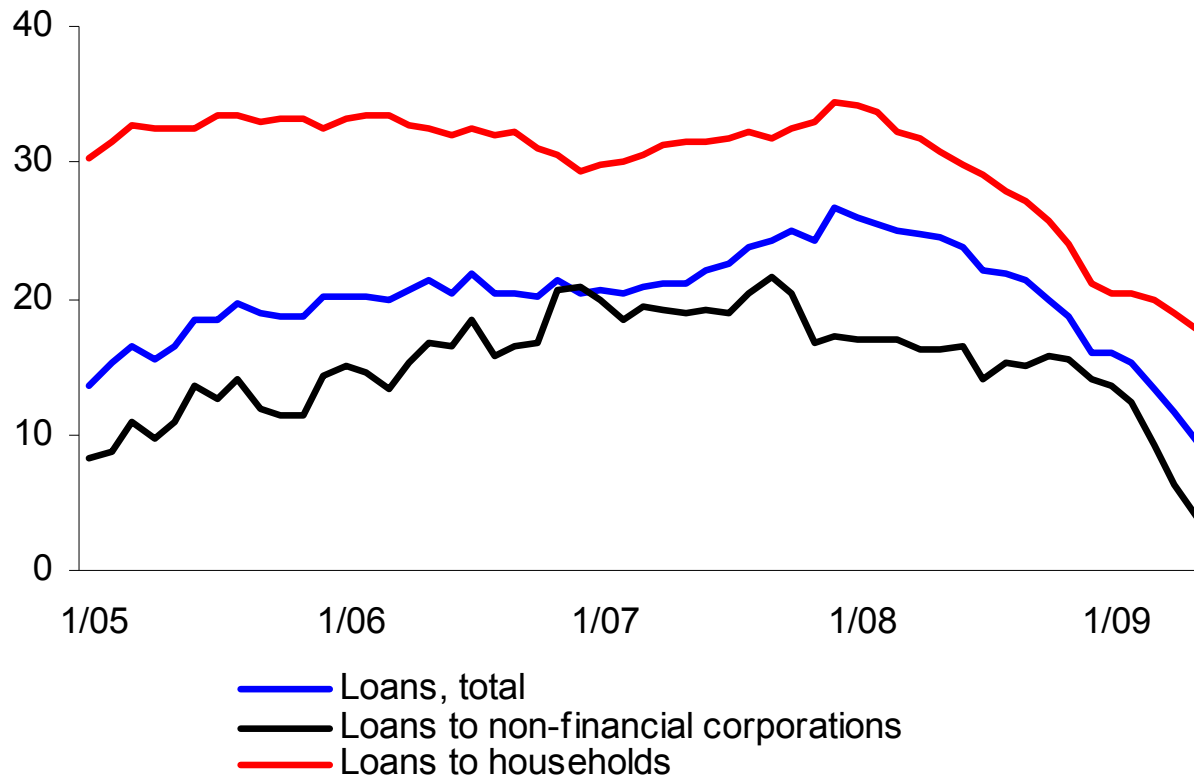
The decline in GDP in the Czech Republic in 2009 Q2 was somewhat deeper than the EU-27 average (in Europe, an annual increase was only recorded by Poland)

Structure of impacts



Loans

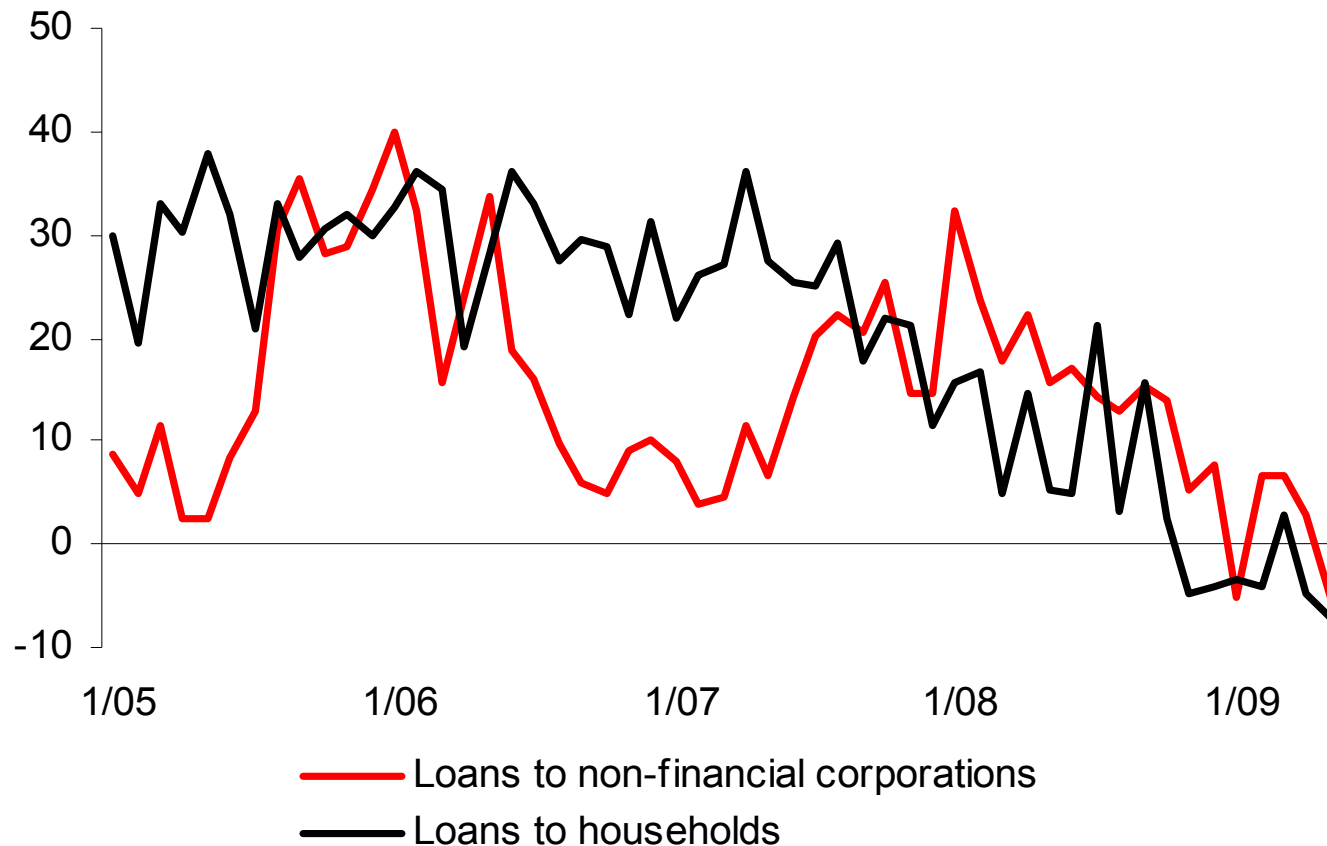
(y-o-y change in %)



Source: CNB

The rate of lending growth is slowing, but remains relatively high (especially for households)

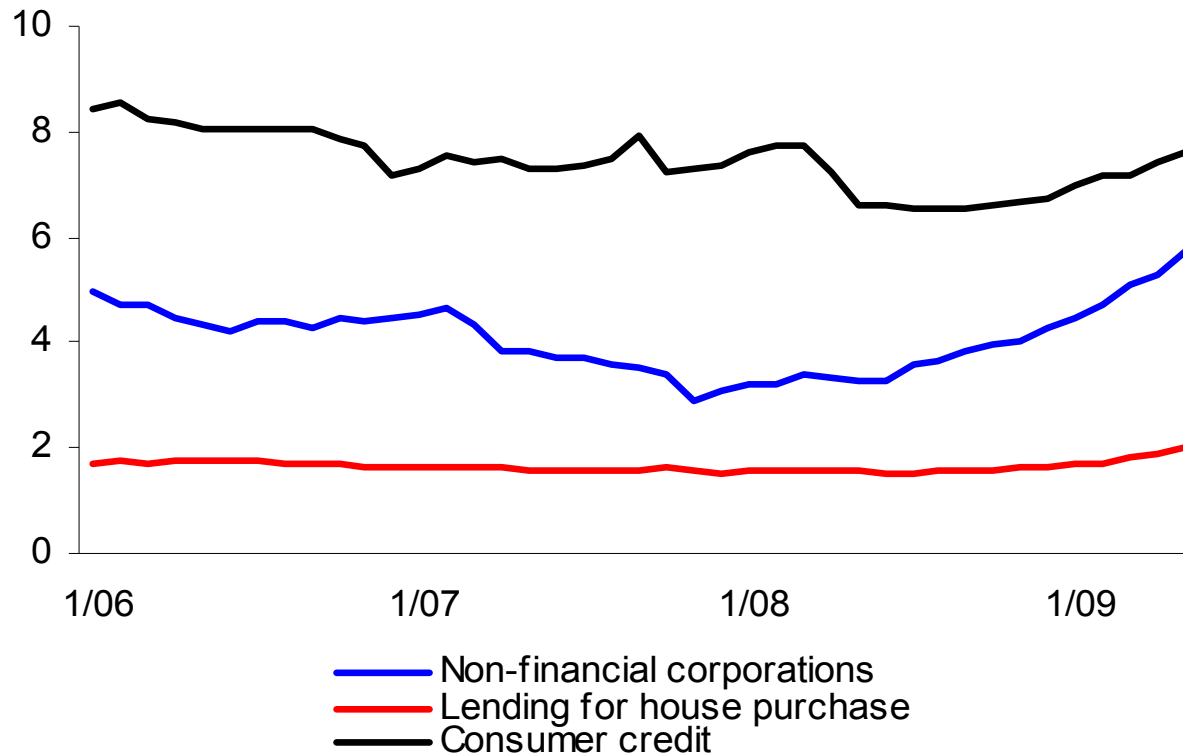
New loans (y-o-y change in %)



Source:
CNB

New loans to non-financial corporations and households decreased

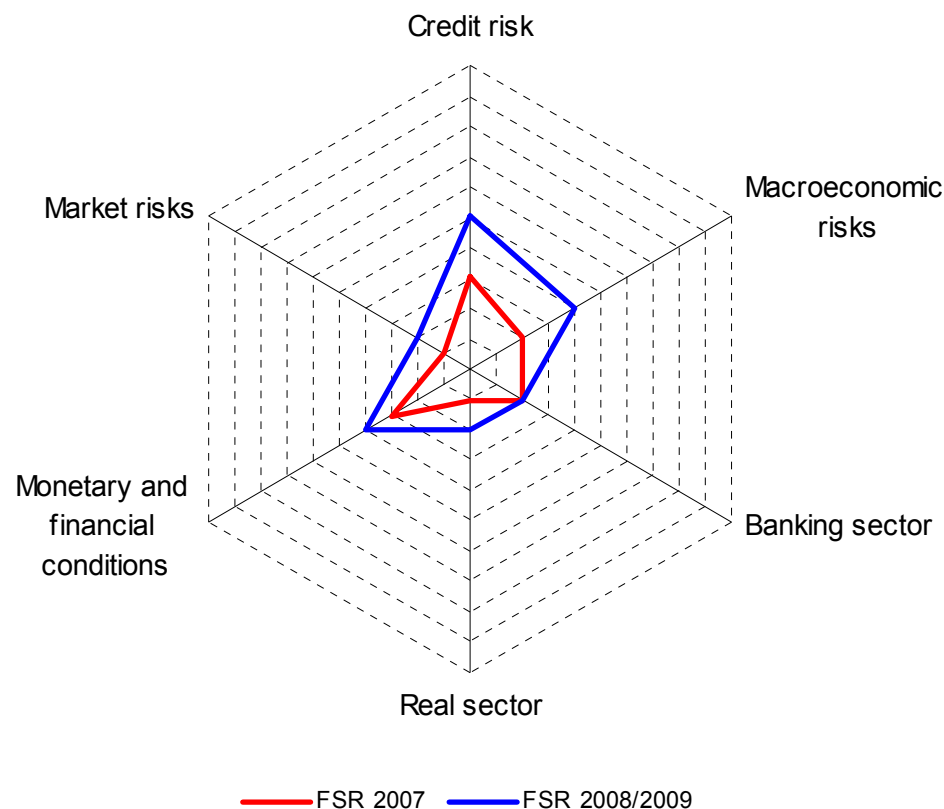
Non-performing loans (% of total loans in segment)



Source: CNB

Non-performing loans were rising mainly because of deteriorating corporate loan quality

Financial stability map



Source: CNB calculation

Note: Points further from the centre of the chart signify more risk, tighter conditions or more vulnerable sector.

Compared to 2007, macroeconomic risks and credit risk are rising, but the banking sector remains resilient

Financial sector: current developments

- In response to rising risks, the banking sector is continuing to reduce the rate of financing of the economy and to tighten the non-interest conditions in many segments of the credit market
- Banks are not the cause of the slowing economic growth; the main cause is the worsening situation abroad and falling demand for loans
- Loan interest rates are mostly flat – the CNB's rate cuts are being offset by growing bank risk margins
- A gradual rise in the default rate on bank loans and other debt can be expected; this will be reflected in worsening results of banks and other financial institutions and in worsening quality of their balance sheets
- The domestic financial sector should be capable of withstanding incoming shocks to a large extent (stress tests)

The Czech financial system remains stable and public confidence in banking institutions persists

Stress tests

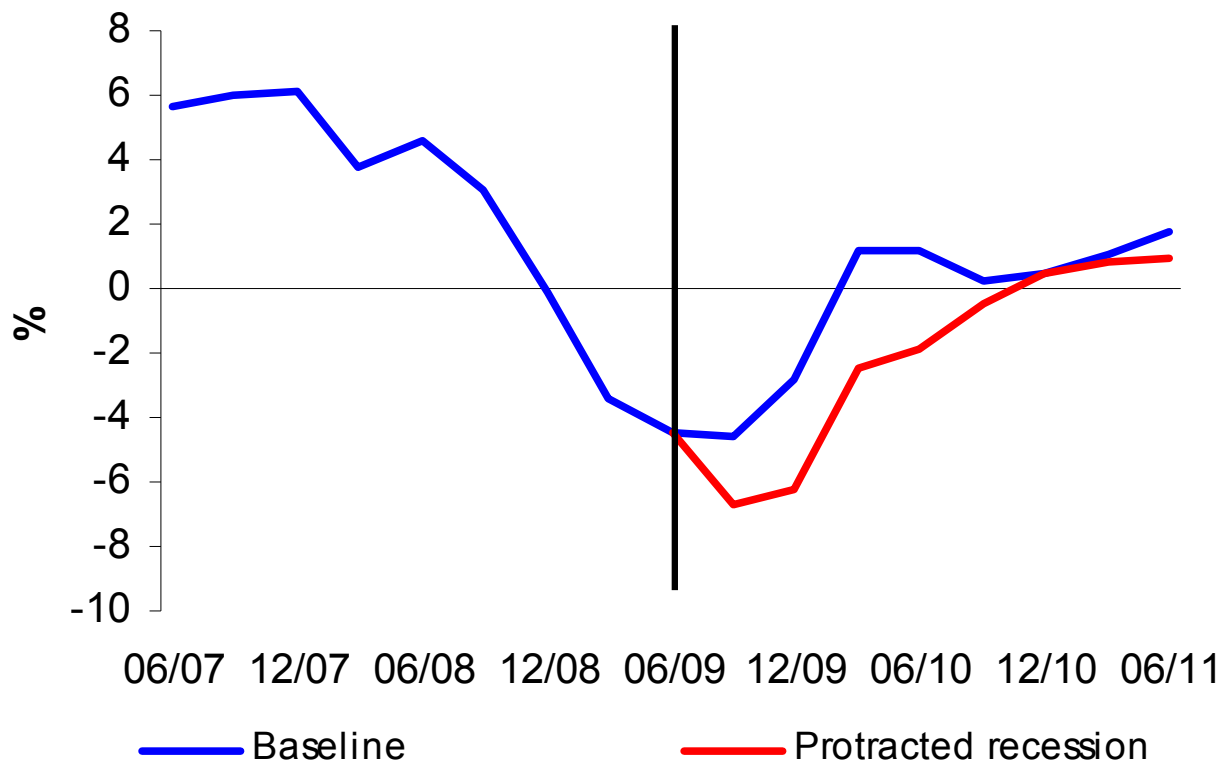
Stress tests: two scenarios

- The July bank stress test works with two scenarios:
 - ◆ Scenario A: “baseline” reflects the CNB’s July forecast
 - ◆ Scenario B: “protracted recession” expects a greater and longer decline in GDP compared to the baseline scenario
- The time horizon of tests: following 8 quarters, i.e. 2009 Q2–2011 Q2 (banking data as of 30 May 2009)

Scenario	Baseline		Protracted recession	
	2009	2010	2009	2010
Real GDP growth (% , y-o-y)	-3,8	0,8	-5,2	-1,1
Inflation (% , y-o-y)	1,2	1,1	1,2	1,2
Interest rate 3M PRIBOR (%)	2,1	1,8	2,3	2,0
Exchange rate CZK/EUR	26,6	25,7	27,0	27,0

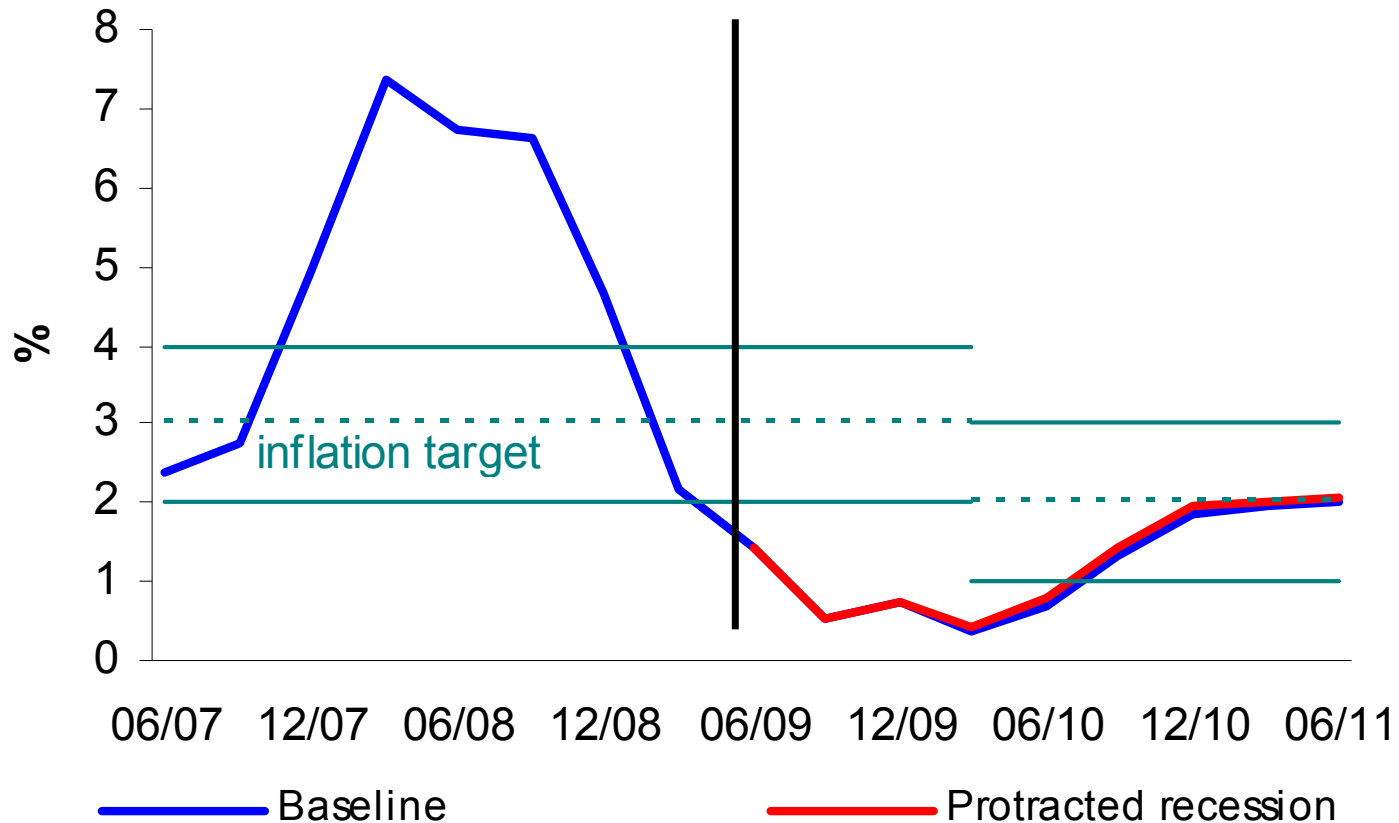
These scenarios are updates to the scenarios published in the Financial Stability Report in June 2009

Alternative scenarios: GDP



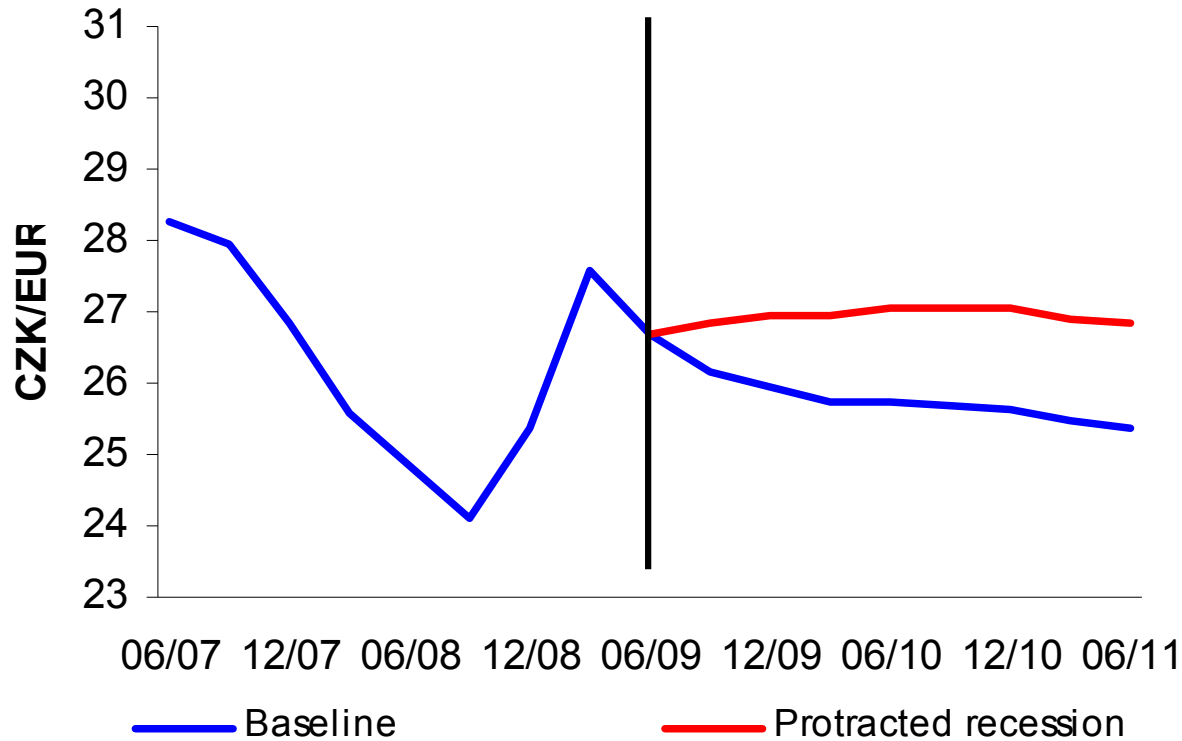
The extreme "protracted recession" scenario is still far from that witnessed in the Baltic states

Alternative scenarios: inflation



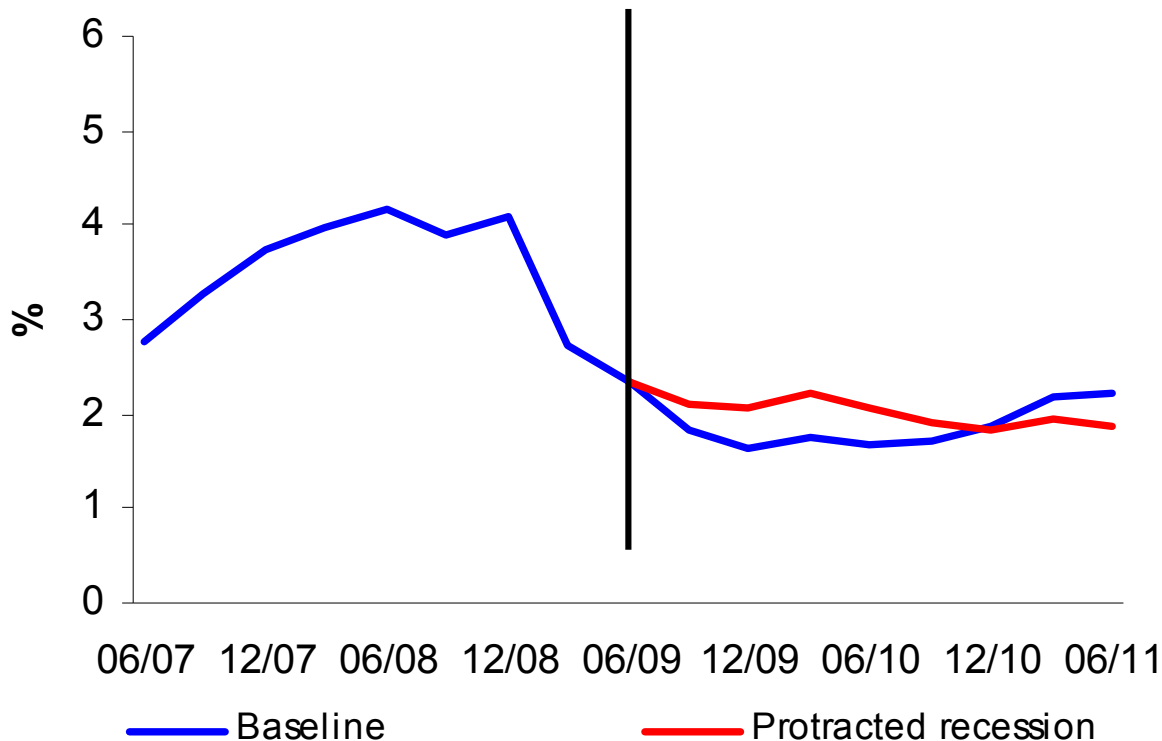
Inflation will not drop below zero in the scenarios

Alternative scenarios: exchange rate



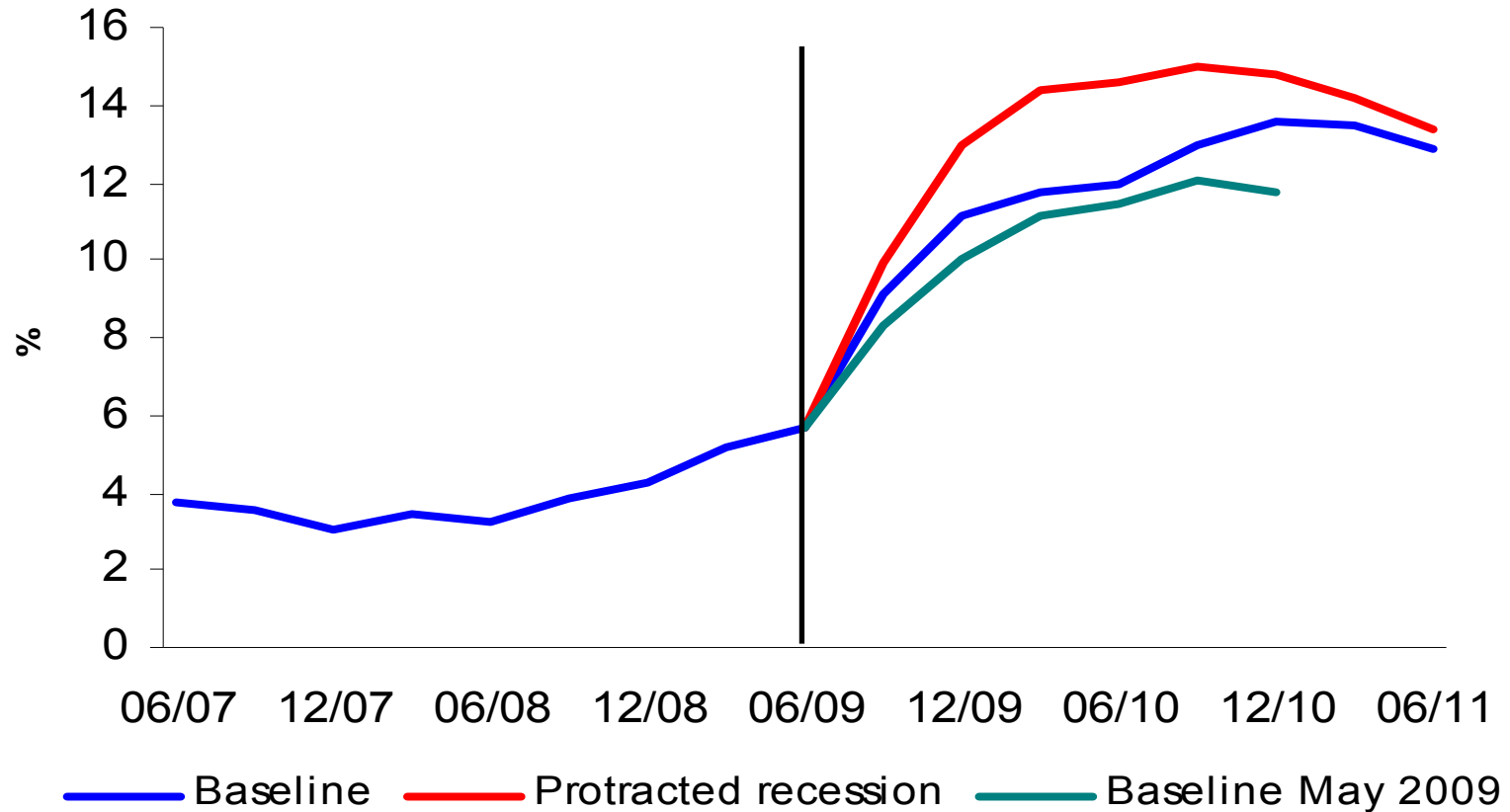
The "protracted recession" scenario expects exchange rate stability, while the baseline scenario expects a slight appreciation

Alternative scenarios: 3M PRIBOR



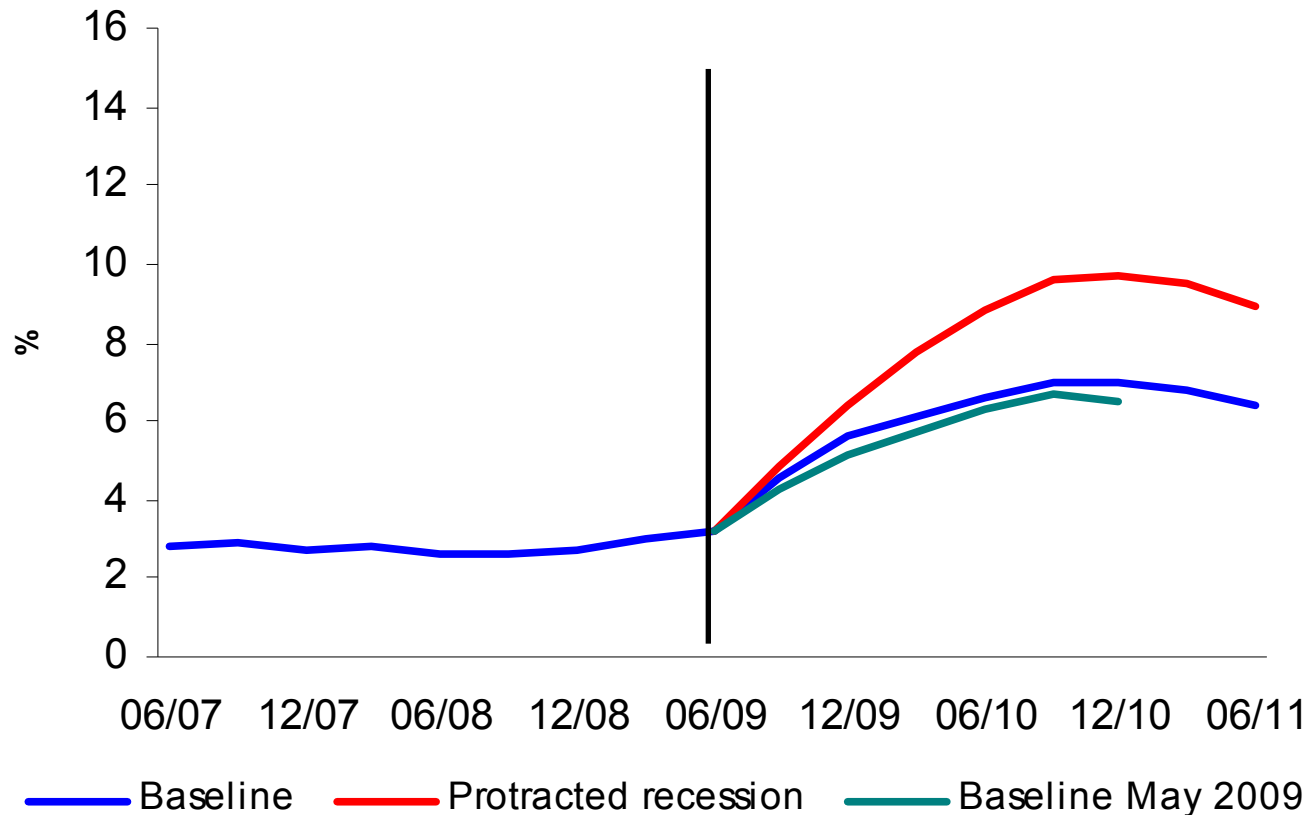
The baseline scenario expects a slight rise in interest rates, while the “protracted recession” scenario expects their stability

Test results: corporations (default rate)



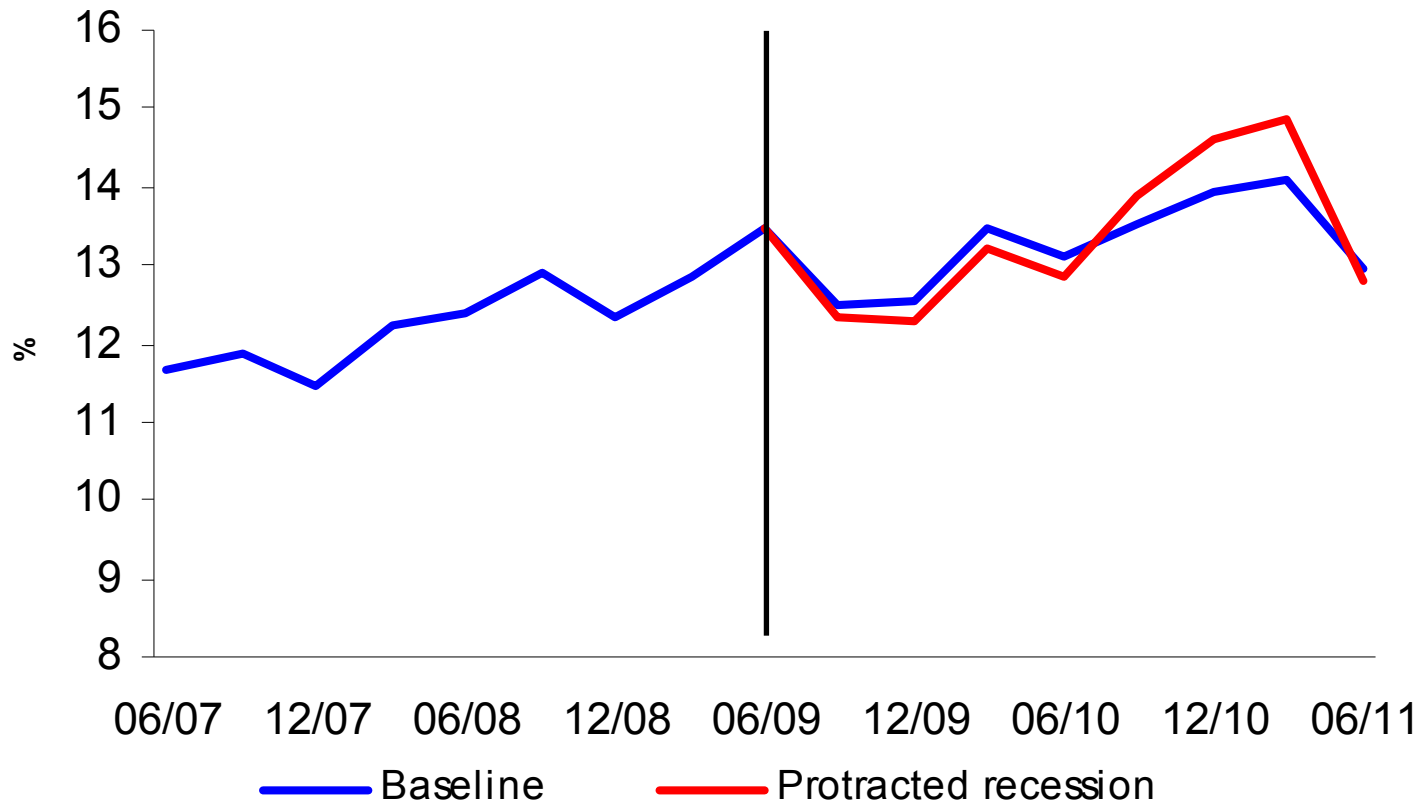
The default rate in the baseline scenario: 12% and 11% in 2009 and 2010 respectively

Test results: households (default rate)



The default rate in the baseline scenario: 5.5% and 6% in 2009 and 2010 respectively

Test results: banks (capital adequacy ratio)



Banks remain stable in both scenarios (generate sufficient income and accumulate profit)

Test results: conclusions

Detailed results of stress tests

Scenario	Baseline		Protracted recession	
	2Q2009	2Q2010	2Q2009	2Q2010
	-	-	-	-
	2Q2010	2Q2011	2Q2010	2Q2011
Capital adequacy (CAR)	13,5	13,1	13,5	12,9
Overall impact of shocks (p.p. CAR)	-2,8	-2,1	-4,3	-2,6
Interest rate shock	-0,1	-0,1	-0,2	0,0
Exchange rate shock	0,0	0,0	0,0	0,0
Credit shock	-2,5	-1,9	-4,1	-2,5
... non-financial corporations	-1,9	-1,5	-2,7	-1,5
... households - housing loans	-0,2	-0,1	-0,5	-0,4
... households - consumer loans	-0,3	-0,2	-0,7	-0,5
Interbank contagion	-0,1	-0,1	-0,1	0,0
Income allocation	2,4	1,9	3,7	2,5
Post-test CAR	13,1	12,9	12,9	12,8
Capital injection (CZK billions)	0,0	0,0	0,0	0,0
Capital injection (% of GDP)	0,0	0,0	0,0	0,0
No. of banks with CAR between 0% and 8%	0	0	0	0
Share of banks with CAR between 0% and 8% in total assets	0,0	0,0	0,0	0,0
No. of banks with negative capital	0	0	0	0
Share of banks with negative capital in total assets	0,0	0,0	0,0	0,0

(capital adequacy in %, and p.p.)

Reactions of CNB's banking supervision and monetary policy

Measures to support liquidity

- Introduction of liquidity-providing facility (banks can obtain liquidity from CNB for 2 wks or 3 mths) in order to boost money market – modest improvements seen
- Option of using govt bonds as collateral in such operations in order to increase liquidity
- HTM for insurers and pension funds

The measures taken have improved the functioning of the financial market; the present instruments seem adequate and there are no signs of liquidity problems in the financial sector

CNB measures: intensive monitoring

- Daily information gathering (introduced 1 day after decision):
 - ◆ Cash requirements (1 and 2 days ahead)
 - ◆ Money market and govt bond market (in real time)
 - ◆ Financial institutions (banks and other key players) with 1-day lag: 1) liquidity, 2) intra-group exposures, 3) deposits, 4) limits, 5) withdrawals from money market funds
- Ad hoc gathering of information on toxic asset holdings (after CDOs, Iceland, Lehman Brothers collapse etc.); information from all parts of financial groups (i.e. banks, insurers, investment funds, pension funds) at the same time on same day
- Consultations between Governor and Vice-Governor and Banking Association (weekly or fortnightly)

The CNB has had instant information at its disposal since the crisis began

Monetary policy during crisis

- Like other central banks, CNB has cut monetary policy rates several times: by 0.75 p.p. on 7 Nov 2008, by 0.50 p.p. on 18 Dec 2008, by 0.50 p.p. on 6 Feb 2009, by 0.25 p.p. on 11 May 2009 and by 0.25 p.p. on 7 Aug 2009
- But rapid koruna depreciation in Jan and Feb temporarily narrowed room for lowering rates
- Inflationary and anti-inflationary risks are now broadly balanced (a slight downward asymmetry)

Should the external environment deteriorate sharply, further rate cuts may be considered

CNB communication

- In recent months, monetary policy-makers have been communicating more than in the past:
 - ◆ Verbal interventions:
 - ▶ Governor in July 2008 (during appreciation bubble)
 - ▶ Vice-Governor in February 2009 (when koruna was weak)
 - ◆ When confronting campaign in which foreign media classed Czech Rep. alongside countries with far worse economic fundamentals

In the past 3 months, CNB communication has been an effective addition to its standard monetary policy instruments

Crisis in the Czech Rep.: summary

- Exports (a sharp fall in external demand) and later (export-oriented) industry were the gate of entry of the crisis to the economy
- The economic decline has probably not been picking up pace in recent months; we seem to be close to the bottom of the decline
- The situation in the Czech Republic's major business partners (Germany, Slovakia) is slightly worse than in the Czech Republic \Rightarrow it may in turn adversely affect the developments in the Czech Republic
- Stimulus measures taken abroad help dampen the impacts on some domestic sectors; however, the impact of the car scrapping incentive programme will be time-limited – after it ends, a downturn usually sets in (see French experience in the period of 2/94-6/95 [E. Balladur] and 9/95-9/96 [A. Juppe])
- Slower (real) wage growth dampens inflationary risks
- The labour market has yet to deteriorate (a usual lag)

Recovery in the Czech Republic depends on recovery abroad

What are the Czech economy's strong and weak points?

Immunity factors:

- Microeconomic flexibility
- Highly competitive structure
- Macroeconomic balances
- Sound financial sector
- Low external debt
- Sustained low inflation and low inflation expectations
- Flexible exchange rate

Risks:

- High share of net exports in GDP
- High share of cyclically sensitive sectors in economy
- Insufficiently flexible labour market
- Political situation:
 - ◆ Caretaker government
 - ◆ Election: provis. budget
- Selective “support” policies

The Czech economy has so far weathered the crisis better than many other countries in the CEE region

Thank you



Miroslav Singer
Česká národní banka
Na příkopě 28
115 03 Praha 1

Miroslav.Singer@cnb.cz
Tel: 224 412 008