



NÁRODNÁ BANKA SLOVENSKA  
EUROSYSTEM



## **Slovakia's early experience with the euro during global recession**

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# Introductory caveat



- Ahead of its euro changeover, Slovakia lacked nominal exchange rate flexibility from H2 2008
- **This coincided, however, with** the outbreak of the Great Recession
- The Great Recession was a unique event whose impact on Slovakia far outweighed that of the euro adoption
- Given the unusual scale of this external shock, Slovakia's experiences over the past seven years may yet be far different from long-run trends

# Summary: Slovakia's early experience with the euro



- Materialisation of immediate benefits was mostly in line with assumptions: transaction and other costs declined (by 0.3% of GDP)
- Assumed longer-term benefits of 7-20% of GDP still to materialise
- Euro area debt crisis induced additional costs related to contagion and contributions to the EFSF and ESM
- Real exchange rate not stable - quite the opposite
- Larger adjustment through employment
- Currently weak real exchange rate provides additional cyclical stimulus
- Still no clear sign of significantly larger longer-term benefits (higher FDI, trade growth, potential GDP growth)



- Great Recession impact adjustment is aided by making a comparison with a similar crisis-hit economy (Czech Republic)
- Global shock induced by the economic crisis highlighted the lack of (nominal) exchange rate flexibility
- Real exchange rate stability not achieved, as important trading partners saw their local currencies fluctuate to buffer the external shock
- In fact, the lack of a national currency *increased* real exchange rate volatility

# Outline



- Output and employment
- Inflation
- Foreign trade and investment
- Economic flexibility and structural reforms
- Euro debt crisis



# Output and employment

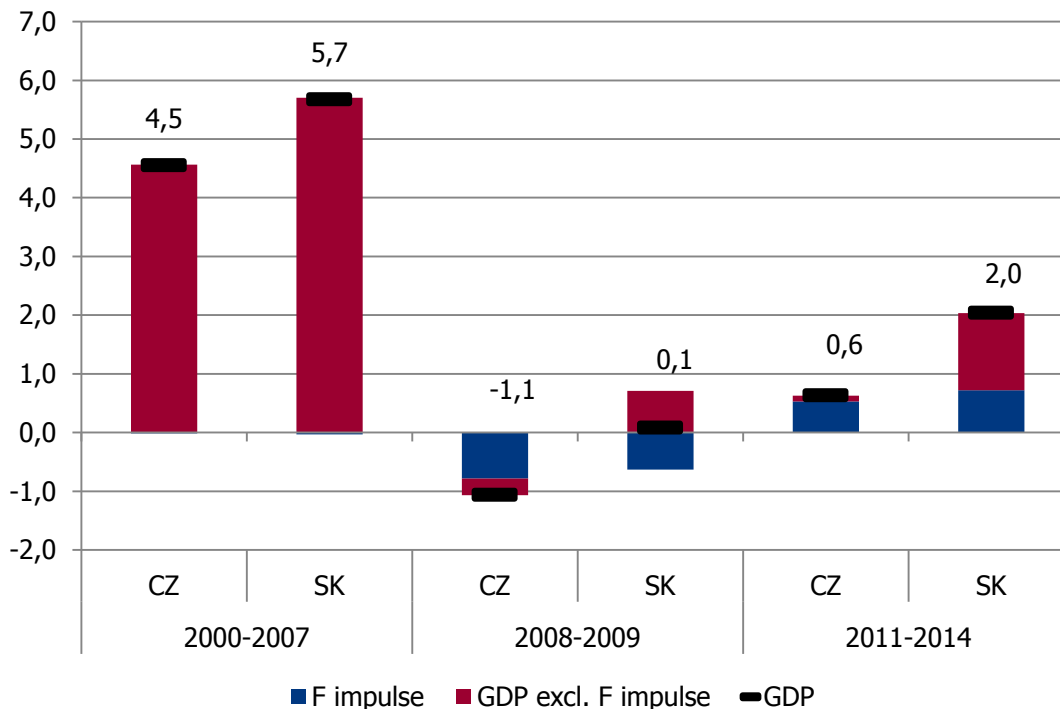
# Is it possible to explain SK growth outperformance by differences in fiscal policies?



Average GDP growth (% , p.p.) - decomposition

	2000-2007		2008-2009		2011-2014	
	CZ	SK	CZ	SK	CZ	SK
GDP	4.5	5.7	-1.1	0.1	0.6	2.0
F impulse	0.0	0.0	-0.8	-0.6	0.5	0.7
GDP excl. F impulse	4.6	5.7	-0.3	0.7	0.1	1.3

Average GDP growth (% , p.p.) - decomposition



## Fiscal policy differences in 2011-2014 do not suffice to explain growth differential between SK and CZ

Fiscal stance defined as change in primary structural balance multiplied by multiplier (0.6).

Sources: IMF WEO 10/2015. ESA2010 data

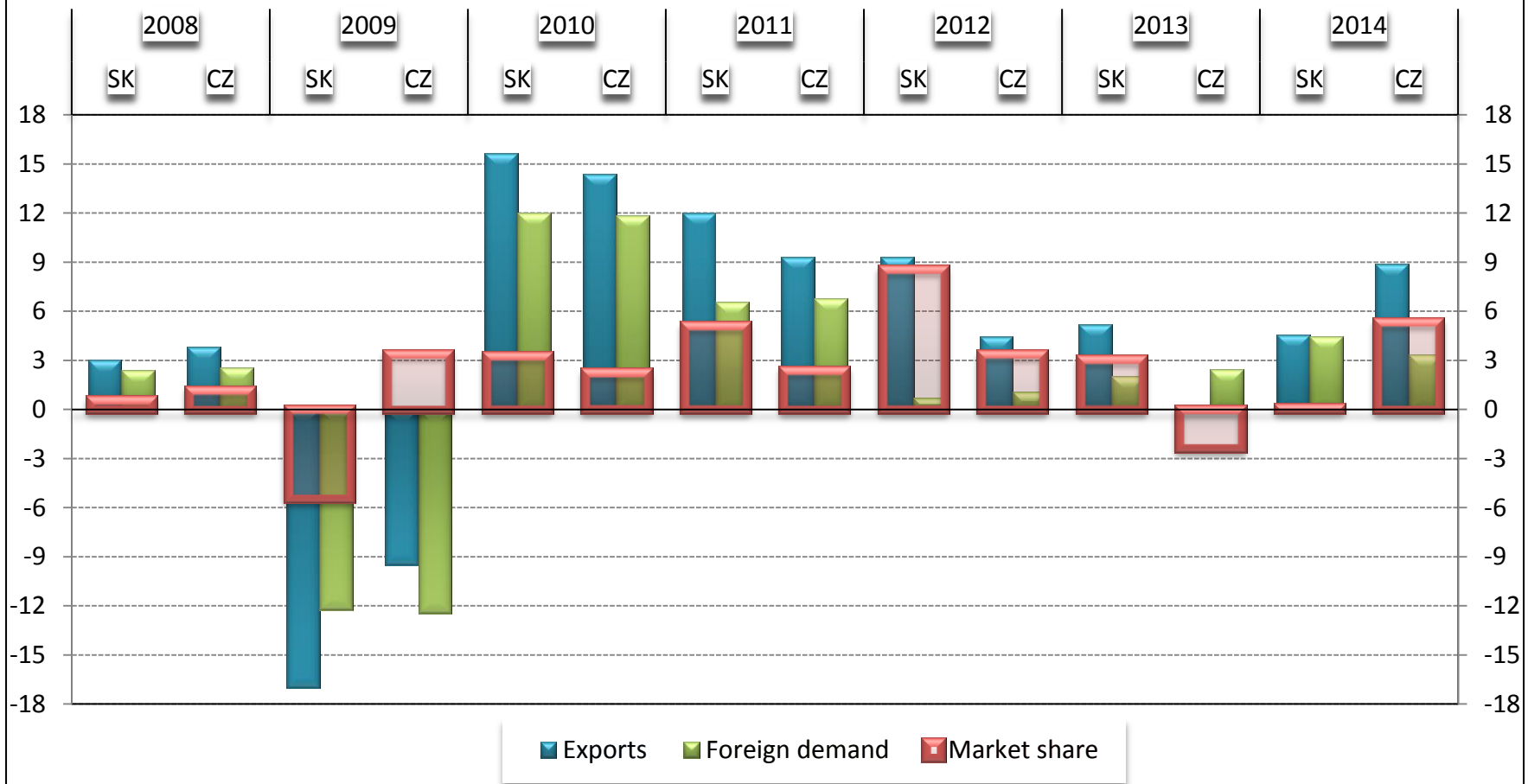
**It may, however, be better to focus specifically on exports/manufacturing sectors and relative changes in GDP forecasts (as opposed to absolute levels).**





# Due to exports, both the recession and recovery were more marked in Slovakia than in the Czech Republic

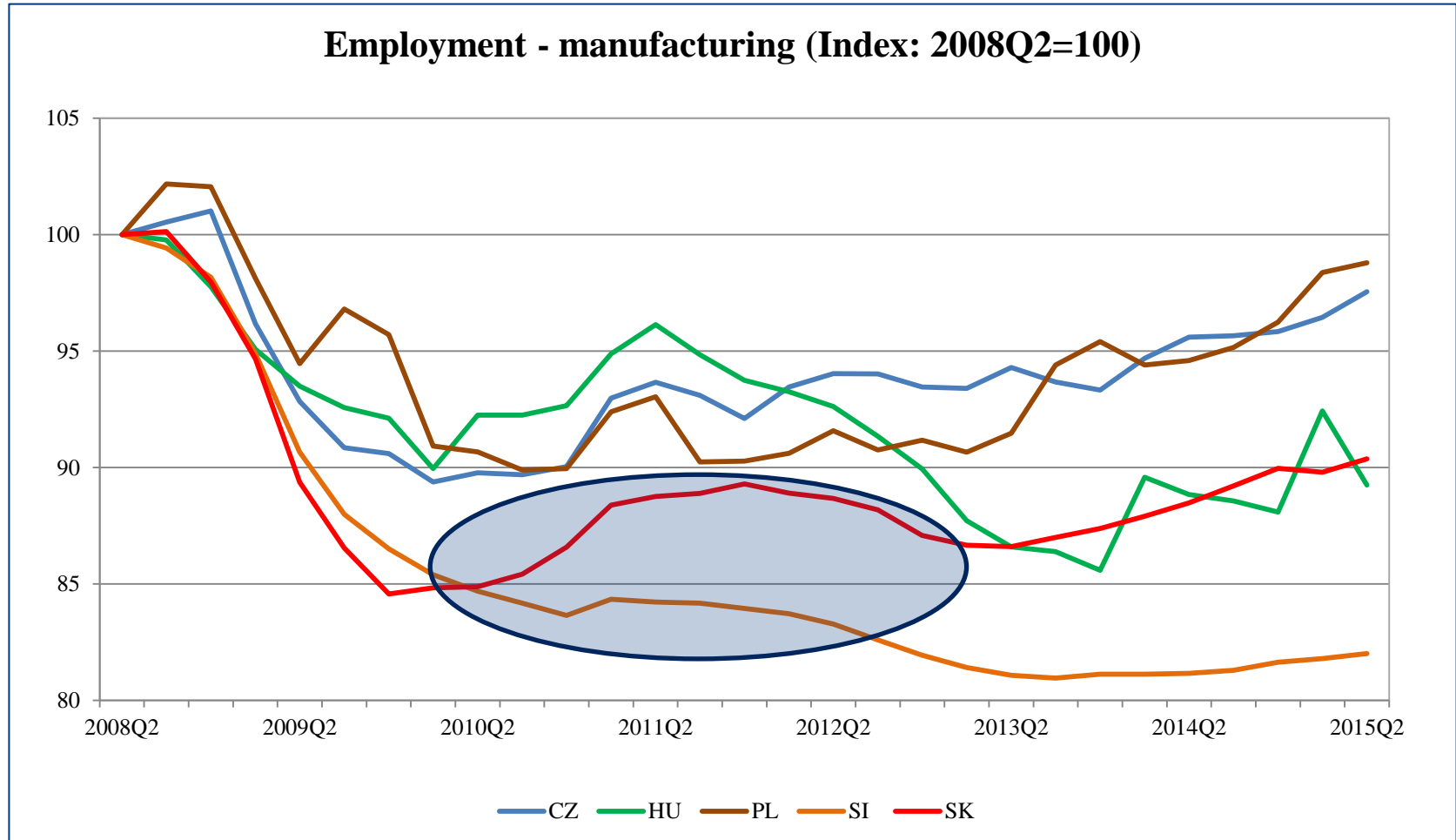
Comparison of exports and foreign demand dynamics  
[in %]



Source: ECB, Eurostat, NBS calculation.



# Employment adjustment in manufacturing stronger in EA Countries



Note: CZ, PL, SK – seasonally adjusted data; HU, SI – seasonally and working day-adjusted data. SI and SK are members of the euro area.

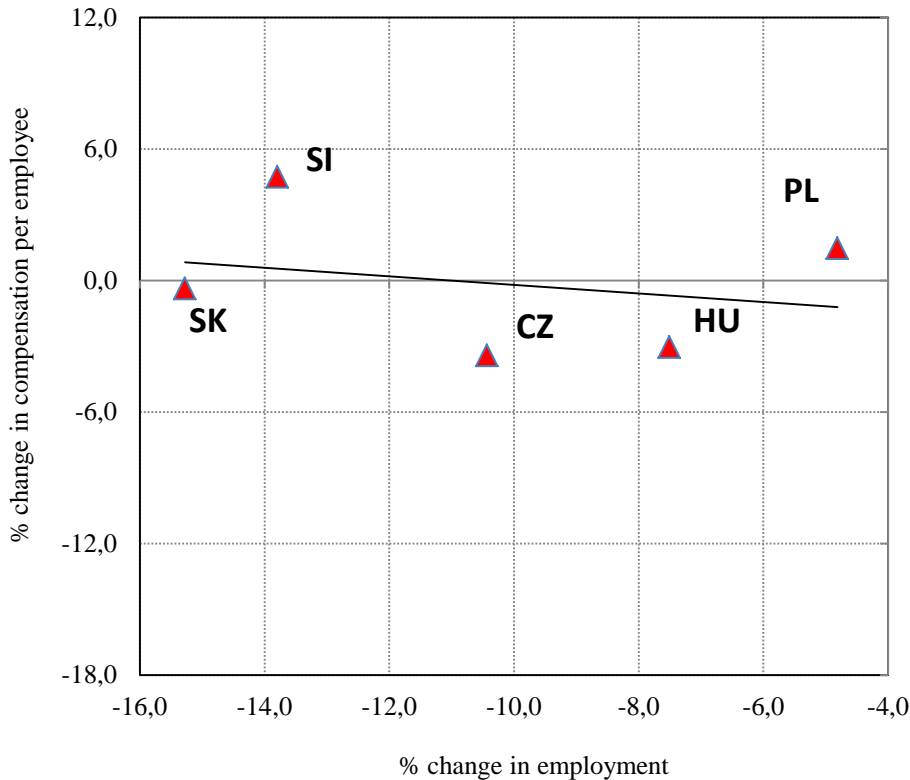
Sources: Eurostat, NBS calculations.

# In SK and SI, where wage flexibility was lower due to euro adoption, firms responded to crises by cutting jobs



## Wage flexibility similar in local currency

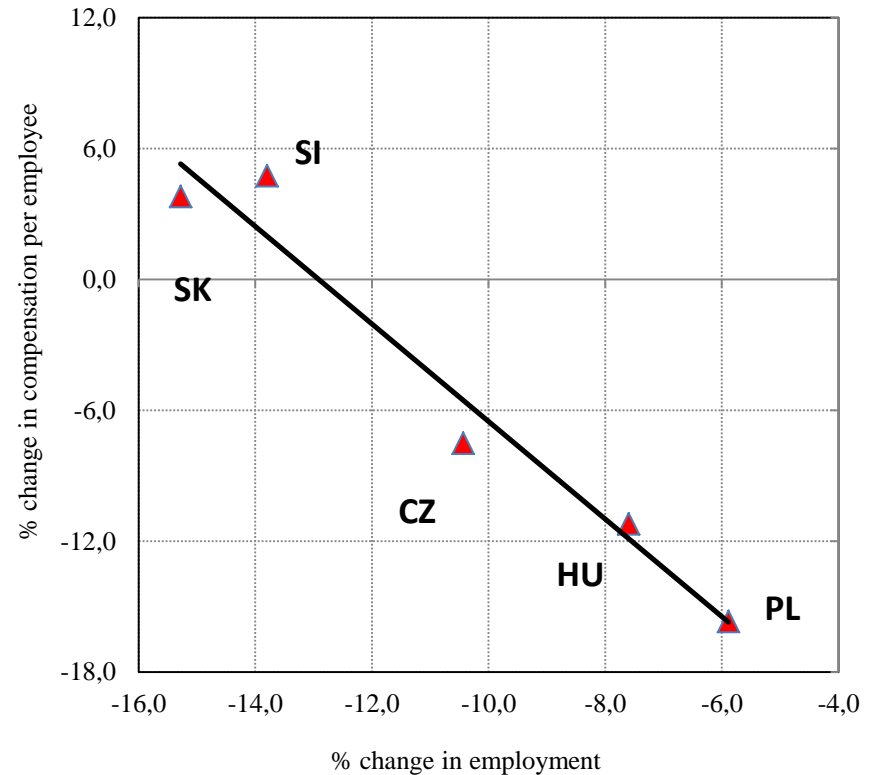
Change in employment and compensation per employee **in local currency** in manufacturing (2008Q2-2009Q4)



Sources: Eurostat, NBS calculations.

## Wage flexibility in EUR lower in SK and SI

Change in employment and compensation per employee **in EUR** in manufacturing (2008Q2-2009Q4)



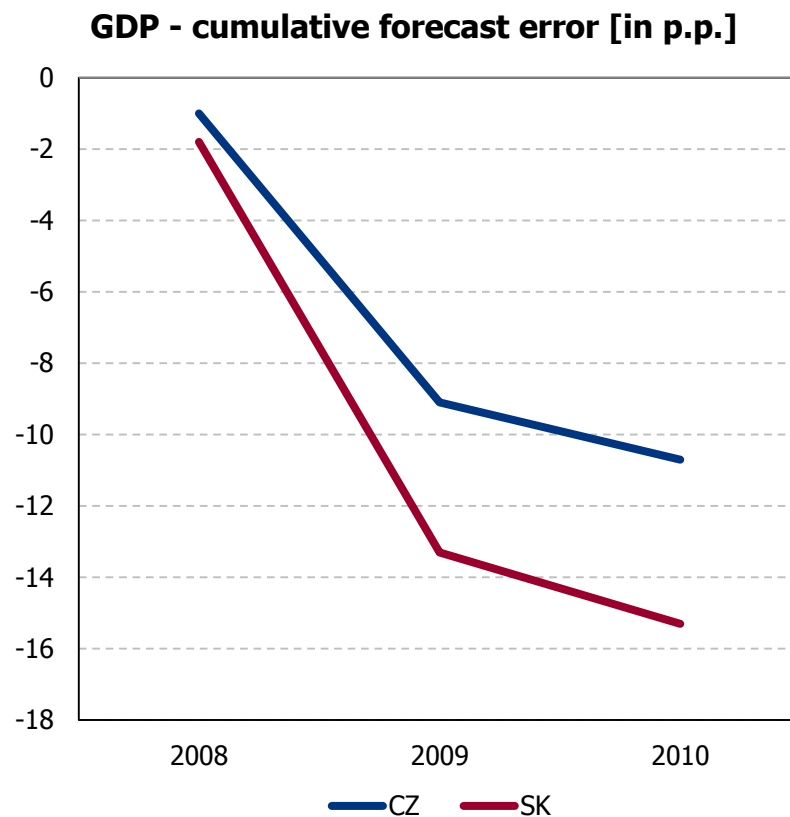
Sources: Eurostat, NBS calculations.

# Surprises in the early stage of the crisis



**Real output undershot forecasts by a cumulative 10.7% in the Czech Republic and an even higher 15.3% in Slovakia during 2008-2010**

	2008	2009	2010
CZ growth forecast	4.1	3.6	4.1
Actual GDP growth	3.1	-4.5	2.5
<b>Difference</b>	<b>-1.0</b>	<b>-8.1</b>	<b>-1.6</b>
Source: CNB forecast (7/8/2008)			
SK growth forecast	7.6	6.6	6.4
Actual GDP growth	5.8	-4.9	4.4
<b>Difference</b>	<b>-1.8</b>	<b>-11.5</b>	<b>-2.0</b>
Source: NBS forecast (P3Q-2008)			



Sources: NBS, CNB, NBS calculation

# Surprises in the later stages of the crisis



## But the later negative surprises in Slovakia were smaller

Recent recovery in Slovakia has been stronger than projected  
(-4.1% in CZ and -2.3% in SK)

	2011	2012
CZ growth forecast	1,8	2,9
Actual GDP growth	1,8	-1,2
<b>Difference</b>	0	-4,1

Source: CNB forecast (5/8/2010)

	2011	2012
SK growth forecast	3,0	4,1
Actual GDP growth	3,2	2,0
<b>Difference</b>	+0,2	-2,1

Source: NBS forecast (P3Q-2010)

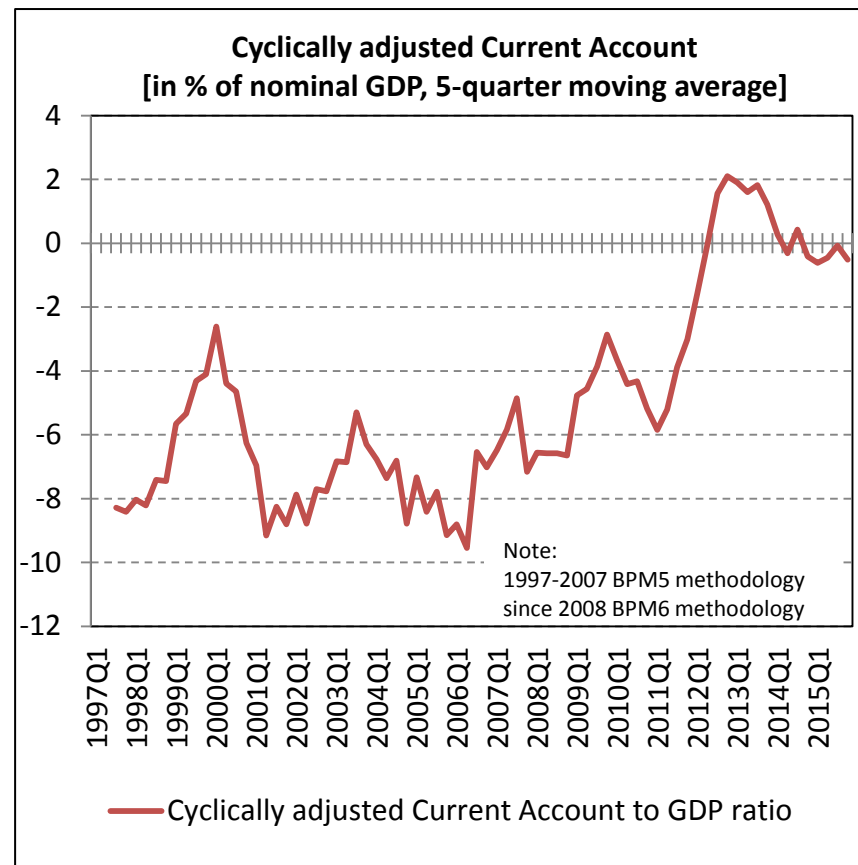
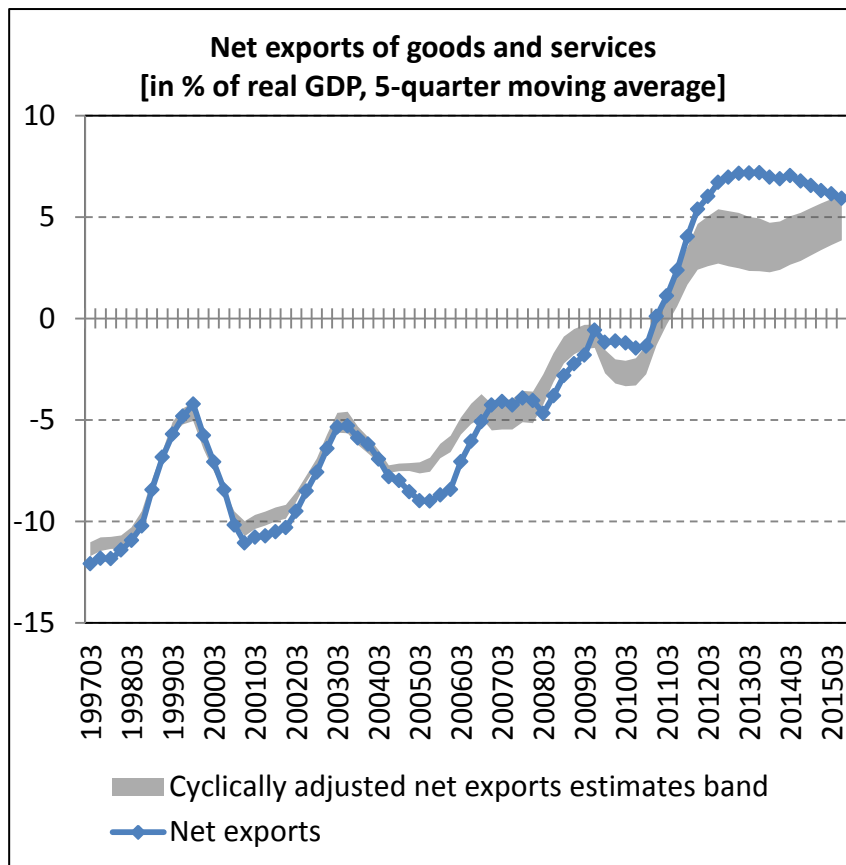
GDP – cumulative forecast error [in pp]



Sources: NBS, CNB, NBS calculations.

# Exchange rate today is probably undervalued

## Historically high cyclically-adjusted current account/trade surpluses

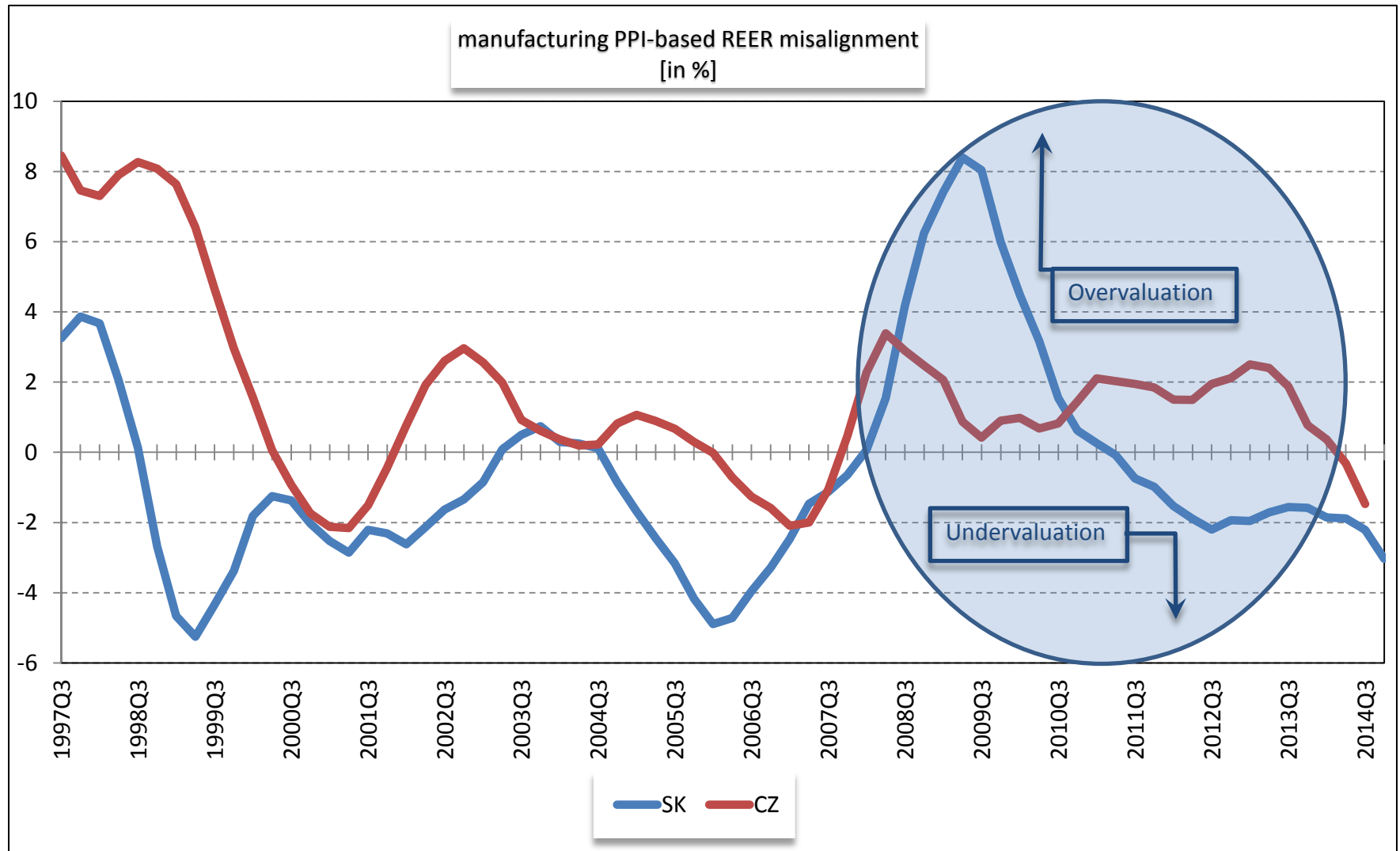


Note: Cyclically-adjusted net exports were constructed from a comparison of FEER model simulations using actual and cyclically-adjusted paths of labour productivity differentials, foreign demand and domestic demand. The estimates band is a result of three alternative cyclically-adjusted domestic demand estimates: an equilibrium path from the FEER approach, a trend component approximated through the output gap, and domestic demand smoothed with a Hodrick-Prescott filter.

The cyclical component of the current account to GDP ratio was calculated using its elasticity on the foreign and domestic output gap differential estimate of 0.28 in *Haltmaier J. (2014) Cyclically Adjusted Current Account Balances, Board of Governors of the Federal System, International Finance Discussion Papers Number 1126.*

Source: ECB, OECD, NBS calculation.

# Slovak real exchange rate has been more volatile (higher overvaluation and greater undervaluation)



Notes: The chart shows five-quarter centered moving averages; CZK intervention floor from 2013Q4; CZ – bilateral RER CZK/EUR

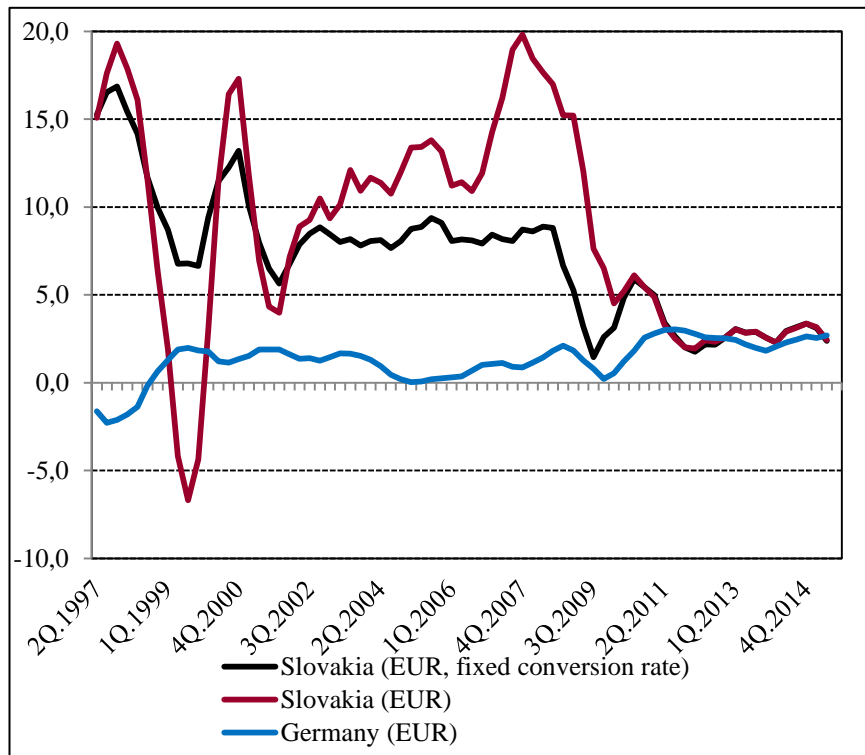
Sources: NBS, CNB.

# Real exchange rate undervaluation



Historically, in the local currency, wage growth in SK was twice as strong as in DE, while in euro it was three times as strong. After the euro adoption and the start of the Great Recession, labour costs (nominal compensation per employee) have been rising at a similar pace. The impossibility of nominal appreciation (together with low inflation) leads to an undervalued real exchange rate that helps Slovakia to gain world trade market share.

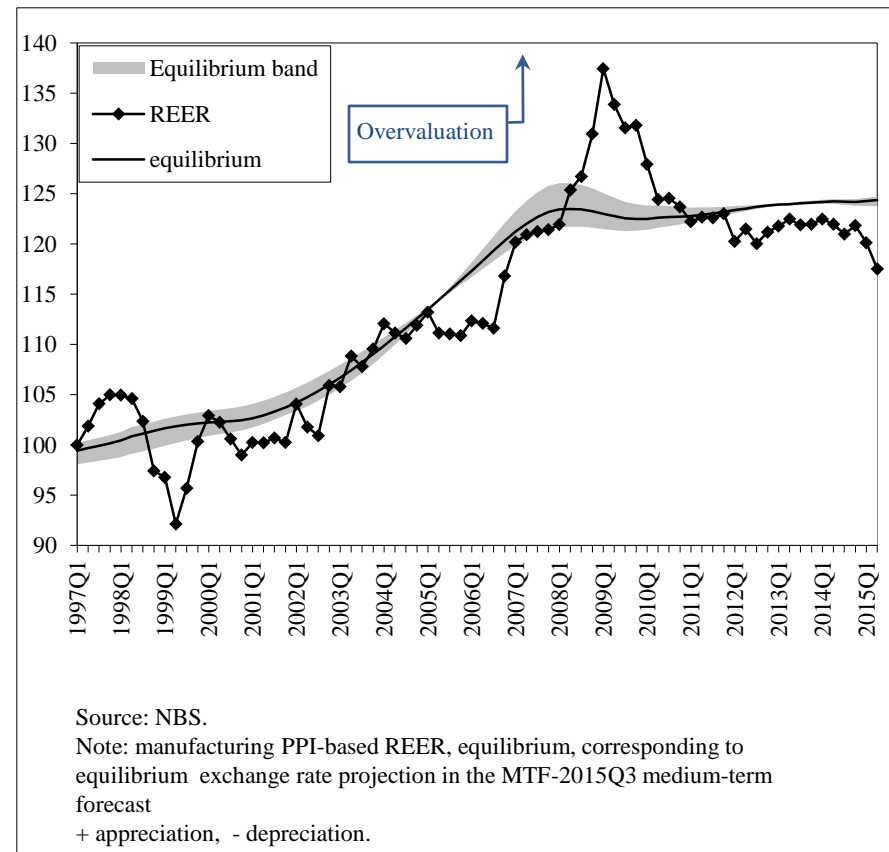
Compensation of employees



Sources: Eurostat, NBS calculations.

Note: annual percentage changes; Q4 – monthly average; seasonally-adjusted data in current prices.

Real exchange rate overvaluation/undervaluation



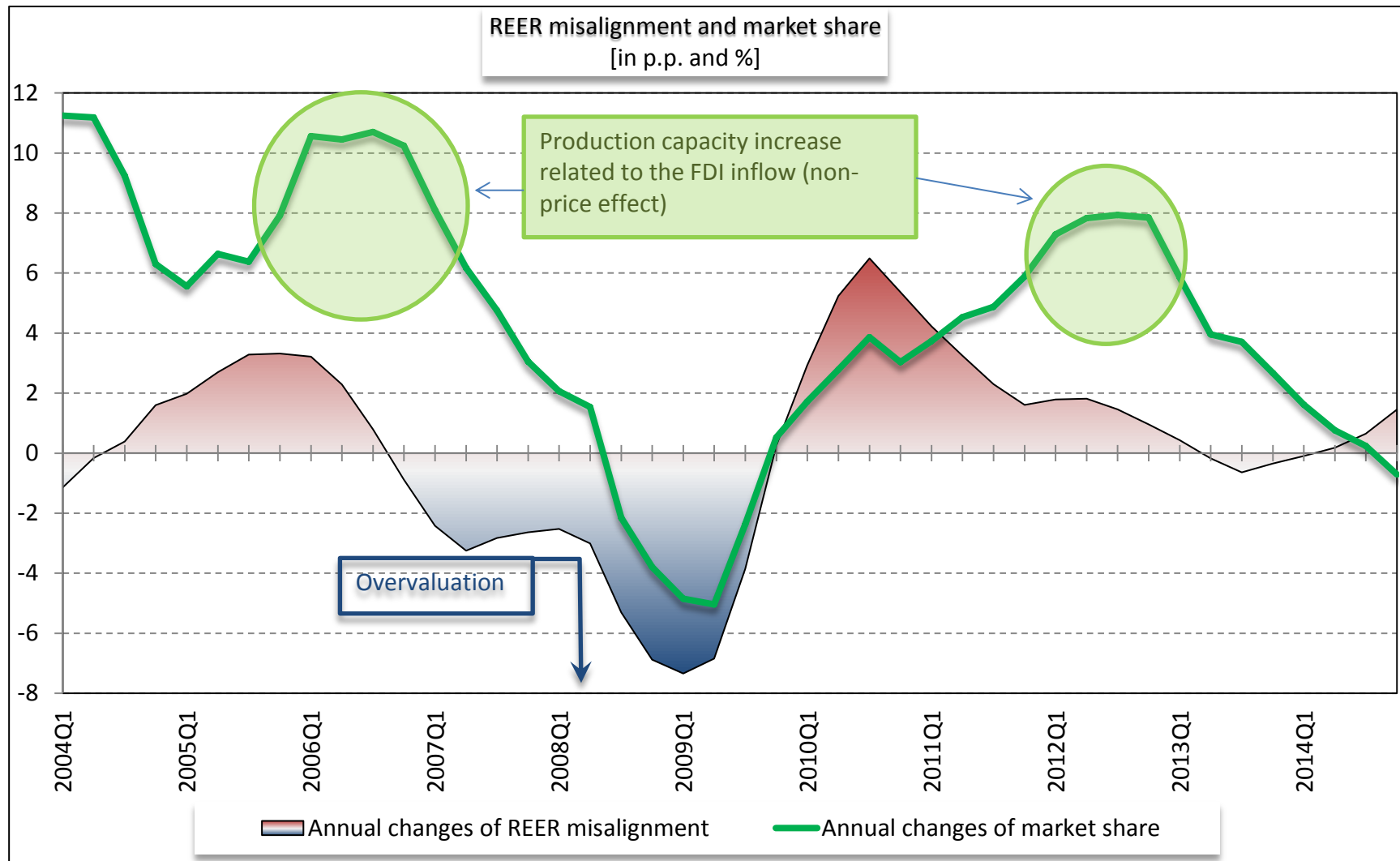
Source: NBS.

Note: manufacturing PPI-based REER, equilibrium, corresponding to equilibrium exchange rate projection in the MTF-2015Q3 medium-term forecast

+ appreciation, - depreciation.



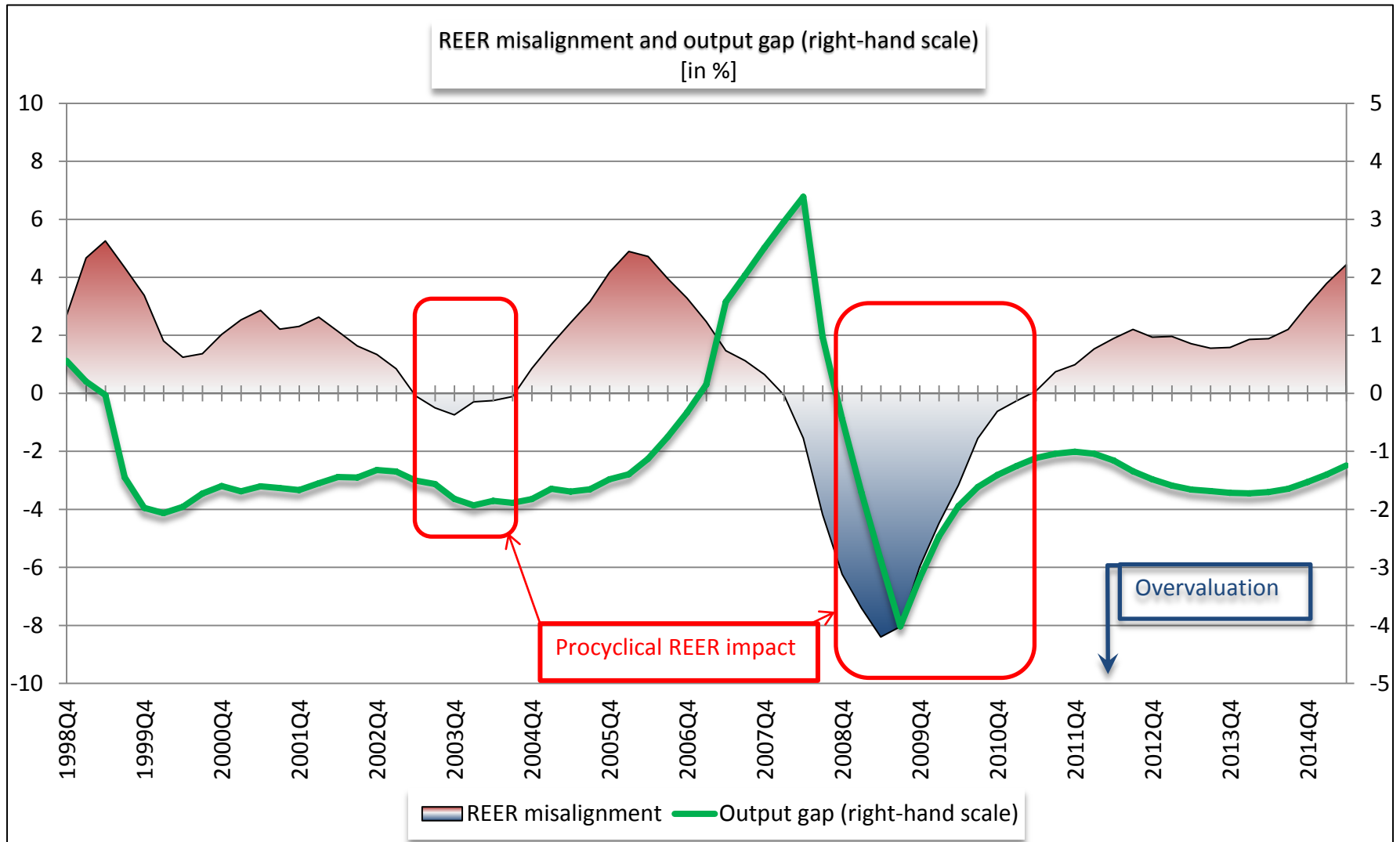
# Early in the crisis, the exchange rate procyclically weighed on economic growth; later it countercyclically boosted it



Note: manufacturing PPI-based REER; five-quarter centered moving averages.

Sources: ECB, Eurostat, NBS calculations.

# Historically huge procyclicality



Note: PPI-manufacturing based REER; five-quarter centered moving averages.

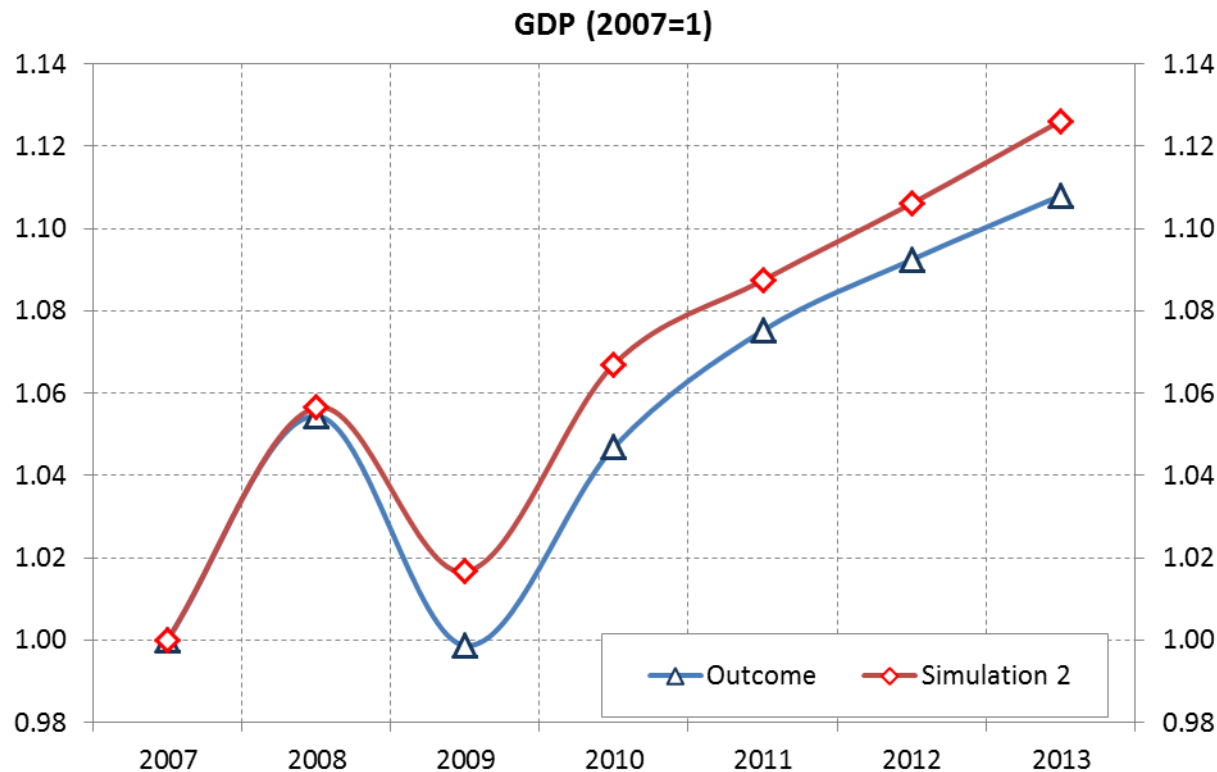
Source: NBS calculations.



## Counterfactuals:

- Short-run approach:
  - currency copies nominal movements of CZK
  
- Medium-run approach:
  - currency copies real movements of CZK
  
- Long-run approach:
  - currency is always in equilibrium

# SKK nominal changes equal to CZK changes (short-run approach)

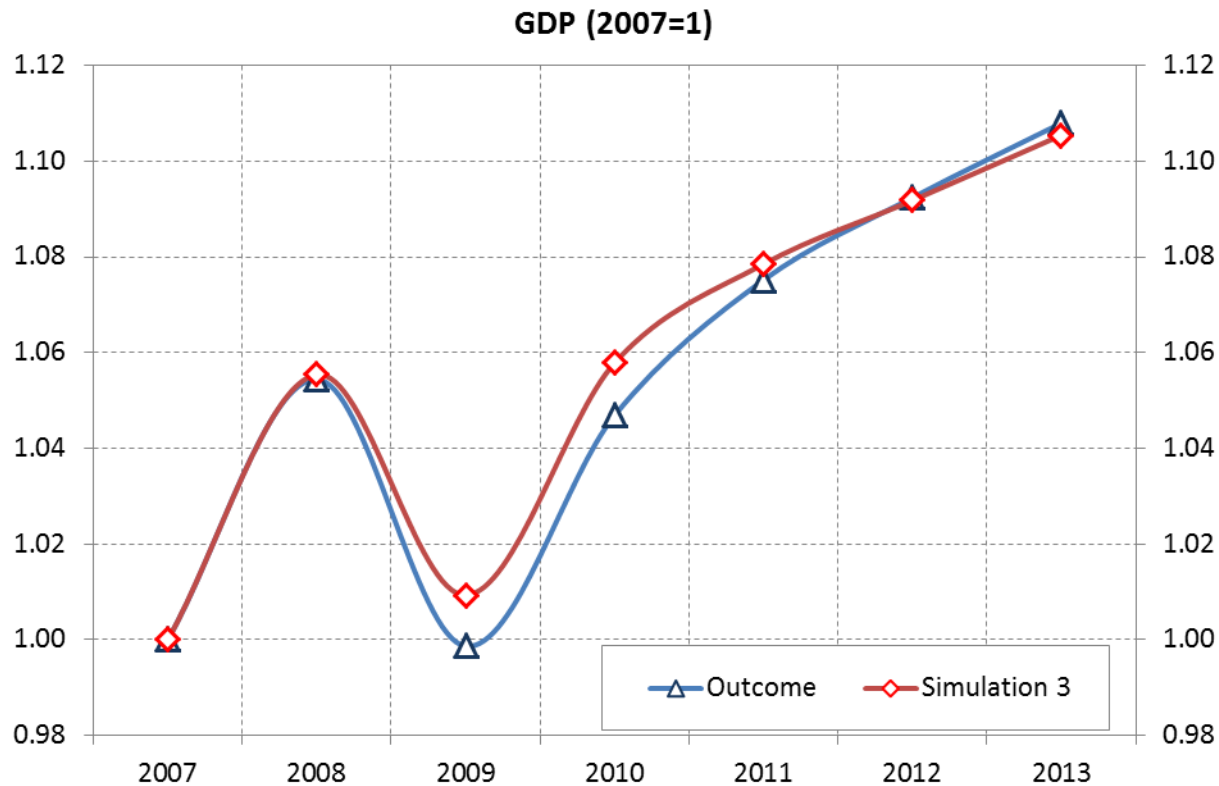


Difference from the outcome level [in %]

2007	2008	2009	2010	2011	2012	2013
0.00	0.20	1.79	2.01	1.22	1.37	1.82

Sources: Eurostat, NBS calculations.

# SKK and CZK trends equal in real terms (medium-run approach)

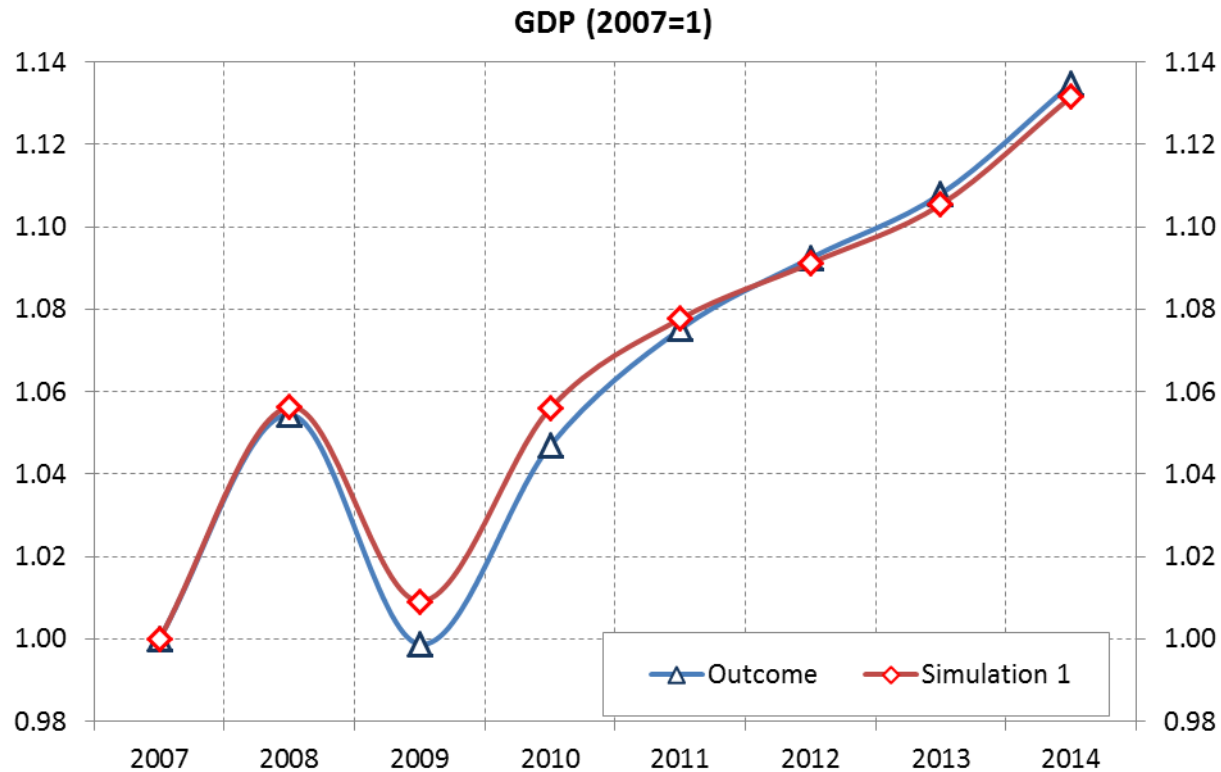


Difference from the outcome level [in %]

2007	2008	2009	2010	2011	2012	2013
0.00	0.10	1.06	1.10	0.33	-0.06	-0.25

Sources: Eurostat, NBS calculations.

# SKK always in (real) equilibrium (long-run approach)



Difference from the outcome level [in %]

2007	2008	2009	2010	2011	2012	2013	2014
0.00	0.18	1.04	0.90	0.25	-0.12	-0.26	-0.31

Sources: Eurostat, NBS calculations.



- Short-run view – recession milder by 2 p.p., positive difference remains
- Medium-run view – recession milder by 1 p.p., positive difference disappears
- Longer-run view – recession milder by 1 p.p., positive difference disappears





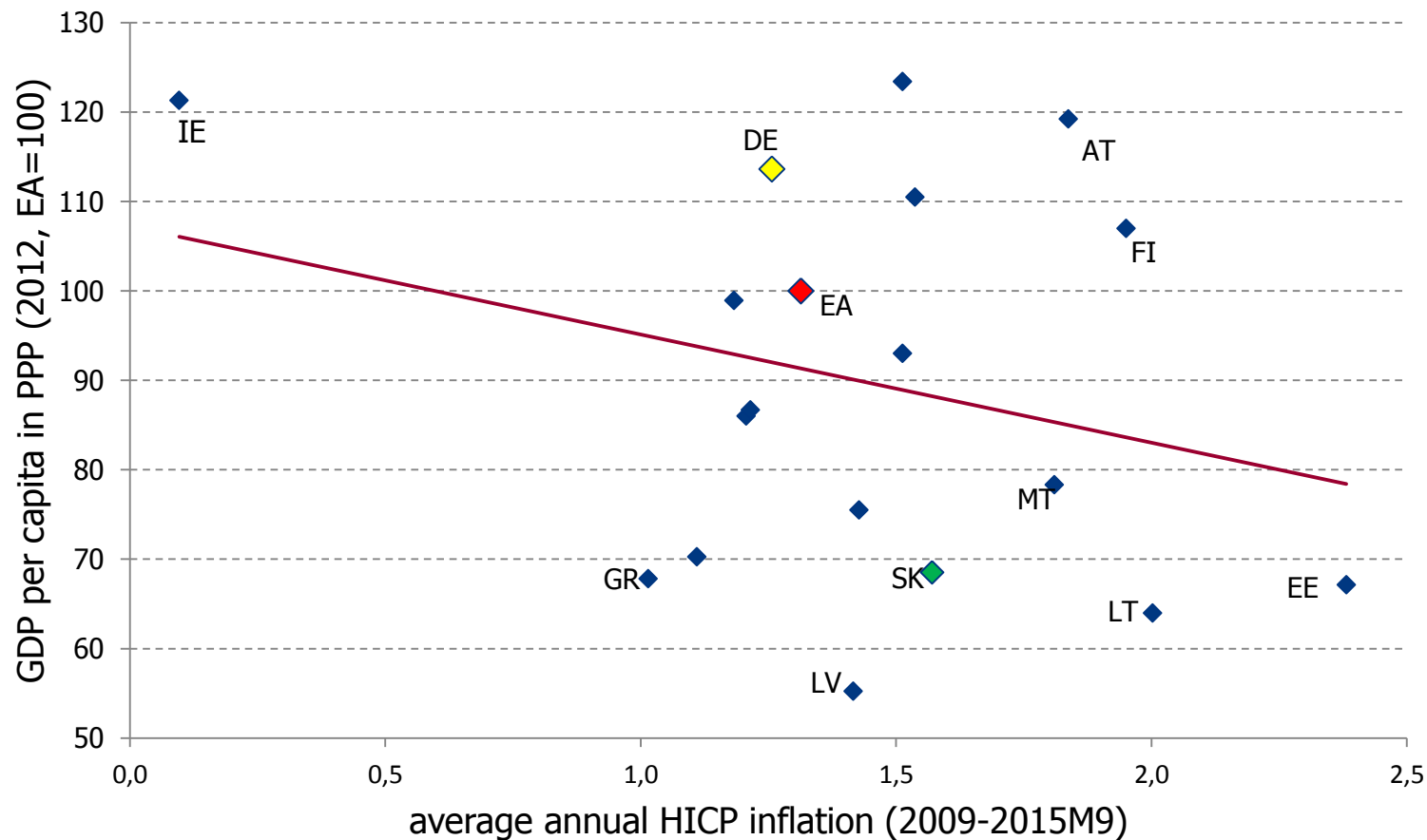
# Inflation

# No grounds yet to support concerns about inflation



Despite expected price convergence SK inflation close to EA average

## Inflation vs GDP per capita

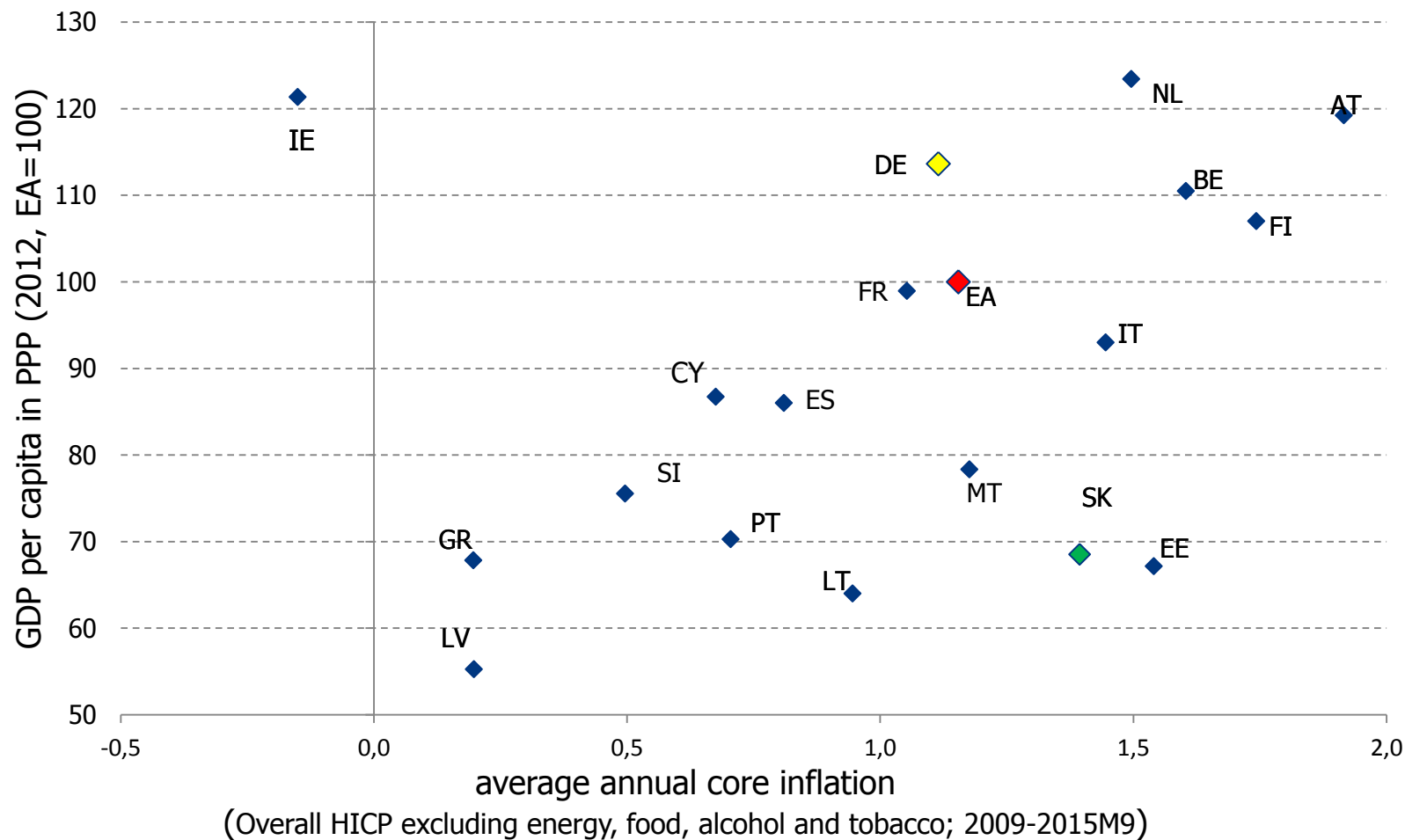


Source: Eurostat

# The same goes for core inflation (so don't blame energy and food)



## Core inflation vs GDP per capita



Source: Eurostat

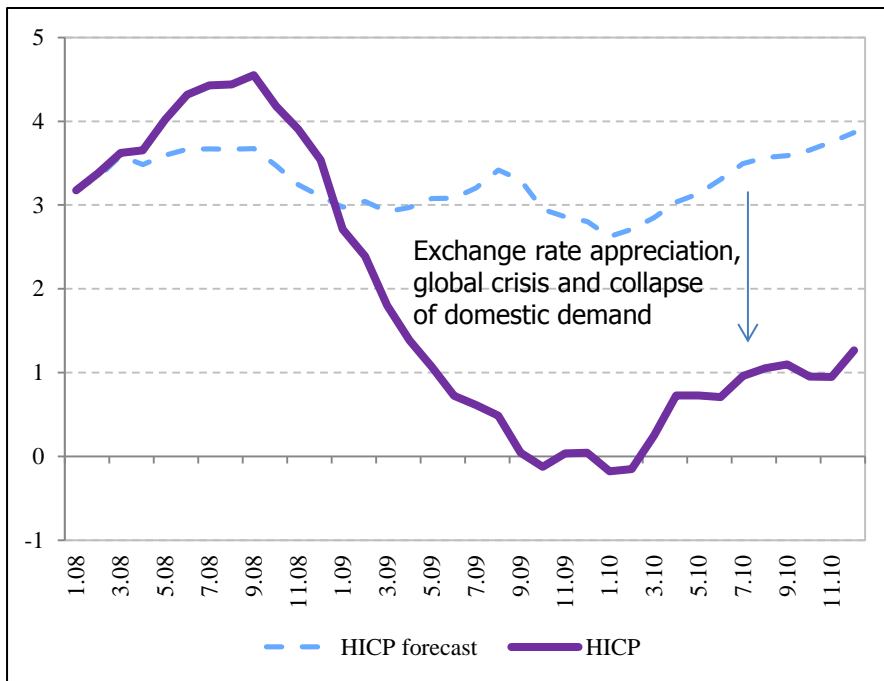


# (Core) inflation during euro period: so far very low

Initially, the lagged impact of exchange rate appreciation prior to euro adoption pushed inflation down in 2009-2010. In addition, service prices were kept low by weak domestic demand (global recession).

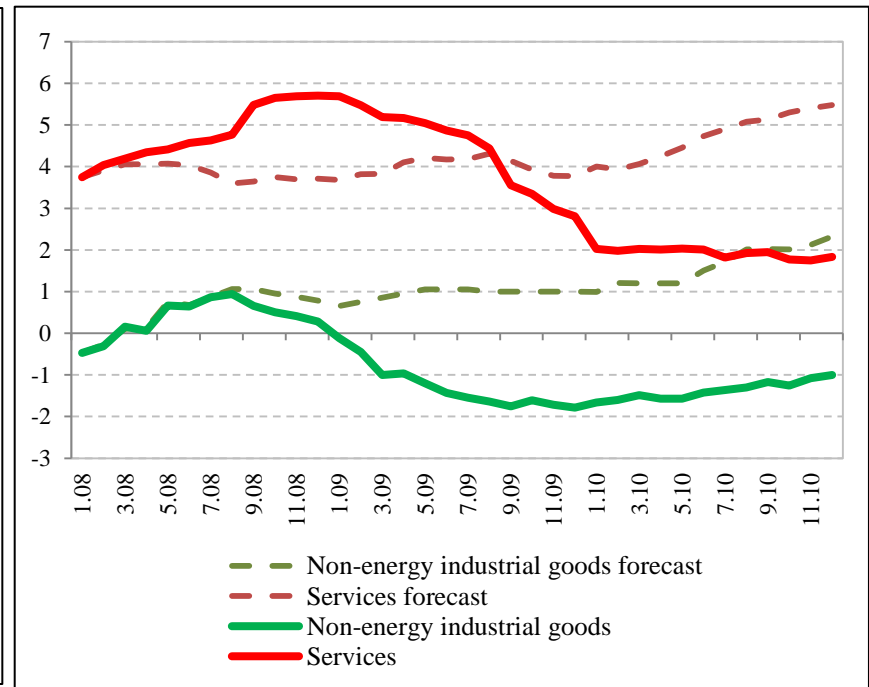
Changeover impact estimated to no more than 0.2% - a non-issue.

### HICP inflation – pre-crisis forecast and actual development



Sources: NBS, Eurostat.

### Services inflation and tradable goods inflation – forecast and actual development



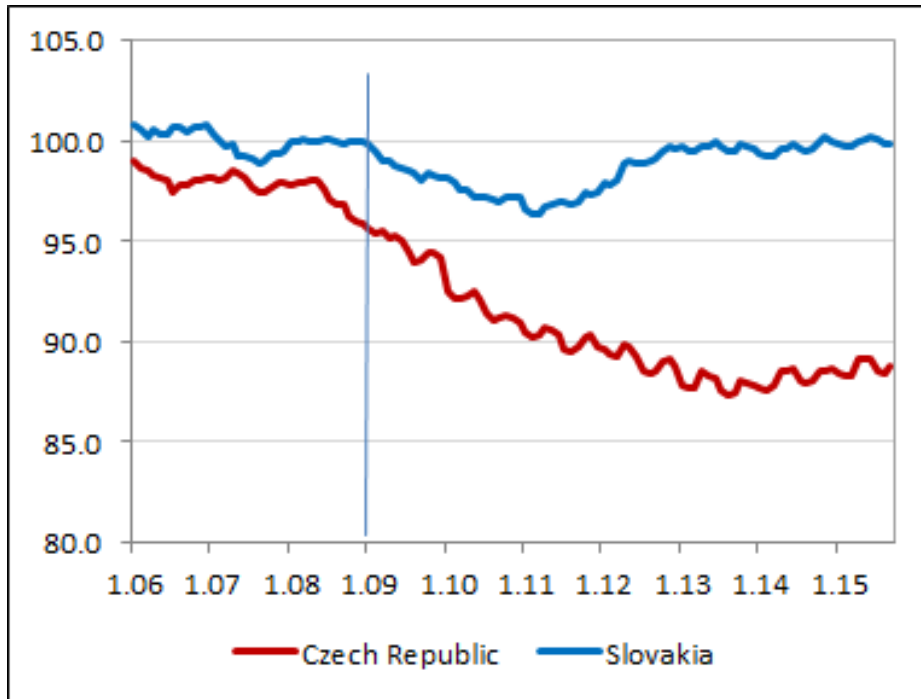
Sources: NBS, Eurostat.

# Low CZ inflation became even lower after 2009



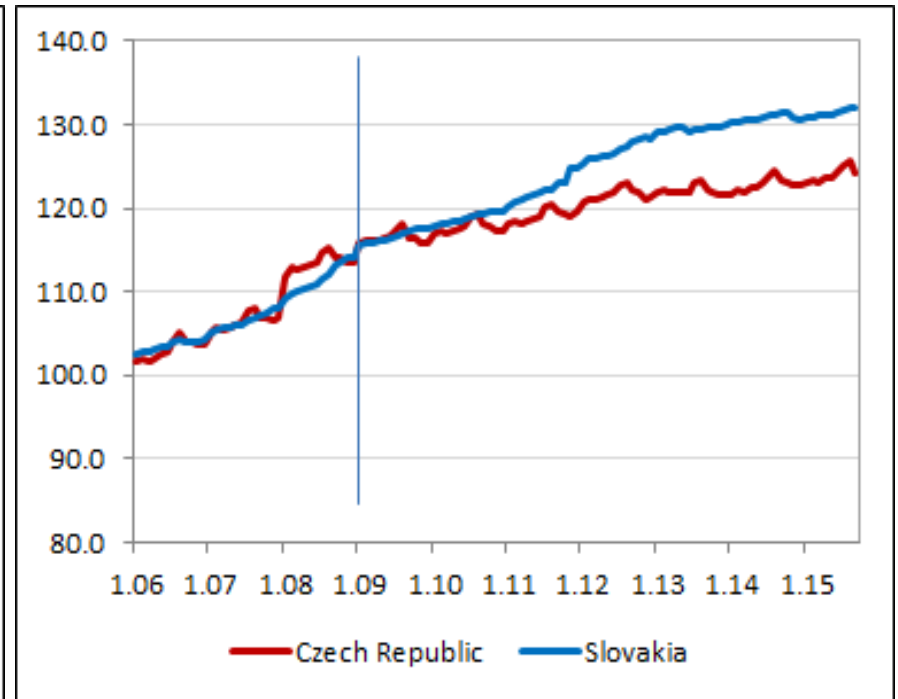
Tradables inflation and services inflation very similar in SK and CZ during 2006-2008.  
**CZ inflation has since been lower.**

Non-energy industrial goods at constant tax rates (index:  
2005 = 100), SK vs CZ



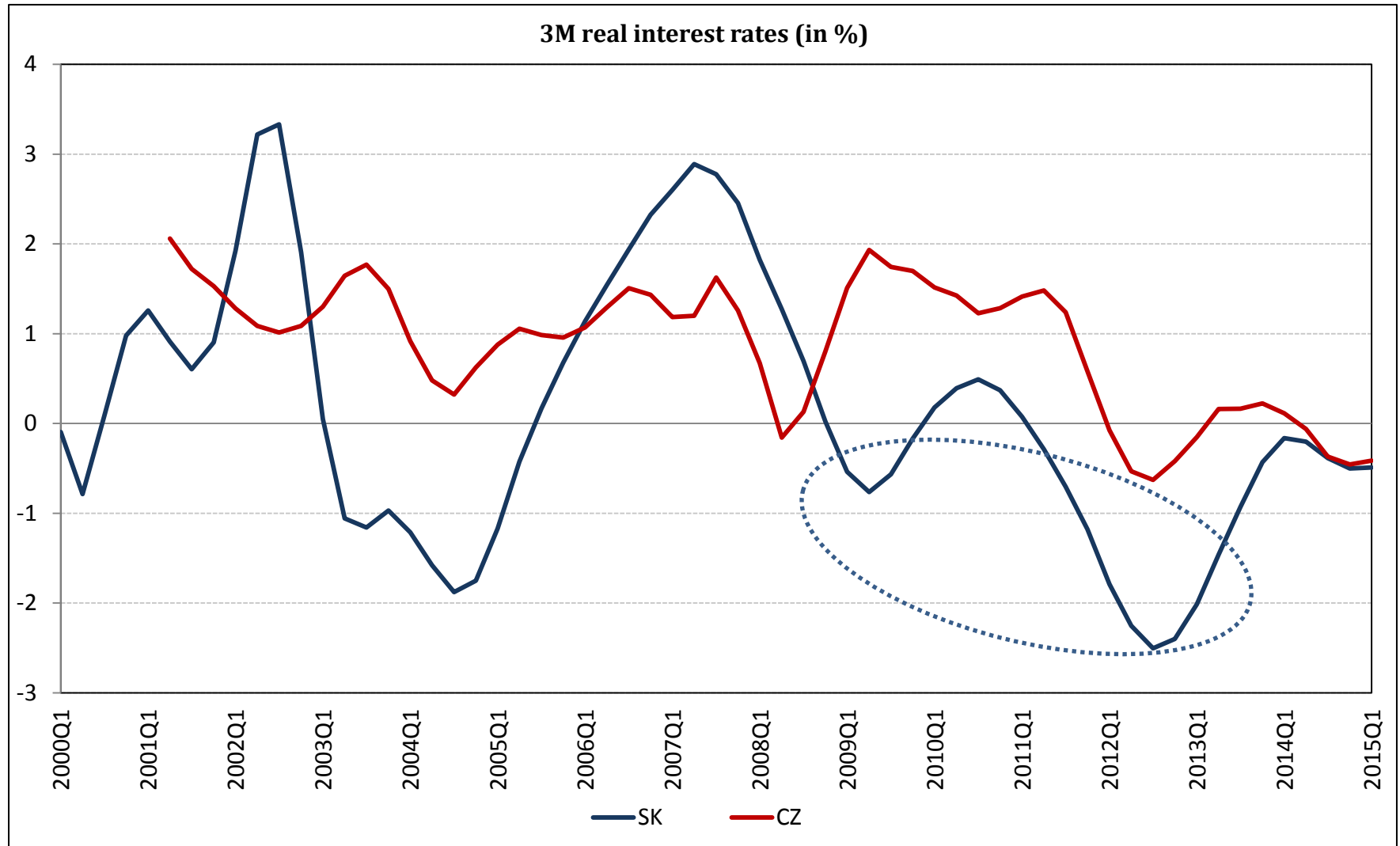
Source: Eurostat.

Services at constant tax rates (index: 2005 =100, SK vs CZ



Source: Eurostat.

# Higher inflation in SK created larger buffer for real interest rates to adjust in ZLB environment.



Note: 3M MM deflated by HICP excluding food and energy prices; three-quarter centered moving averages.

Source: ECB, OECD, NBS calculations.



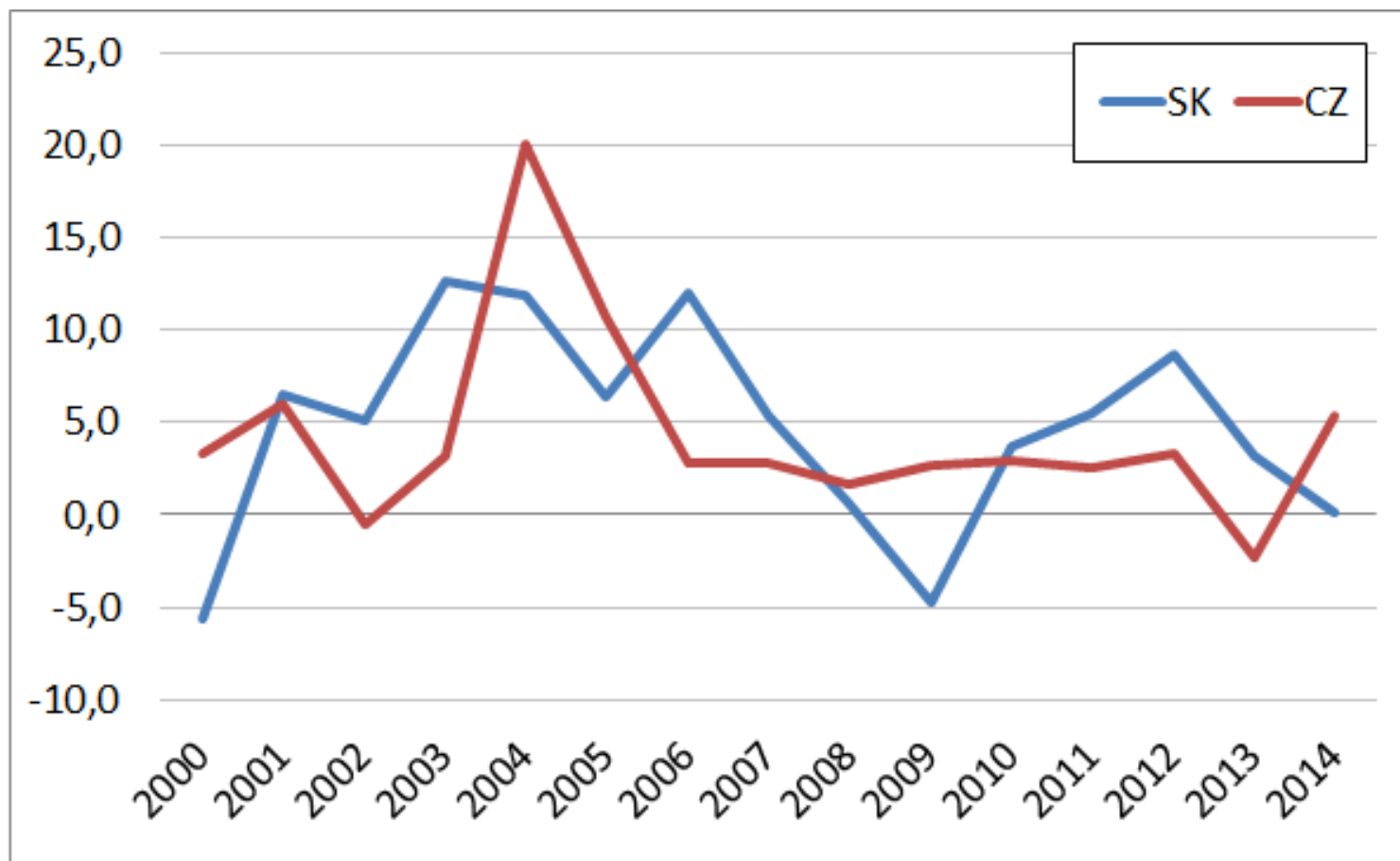
# Foreign trade and investment



# Market shares (annual percentage changes)



- Situation in SK was worse at the start of the crisis, but better later on



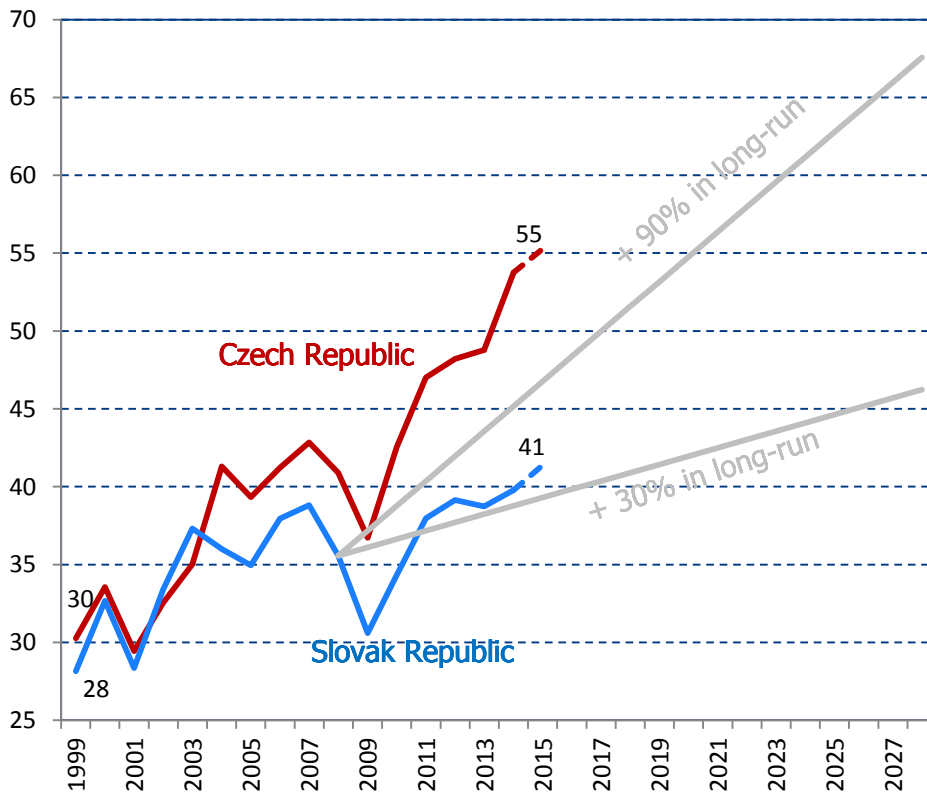
Sources: Eurostat, ECB, NBS calculations.

# Trade trends still in line with assumptions for long-run gains from euro (but CZ also performs well)

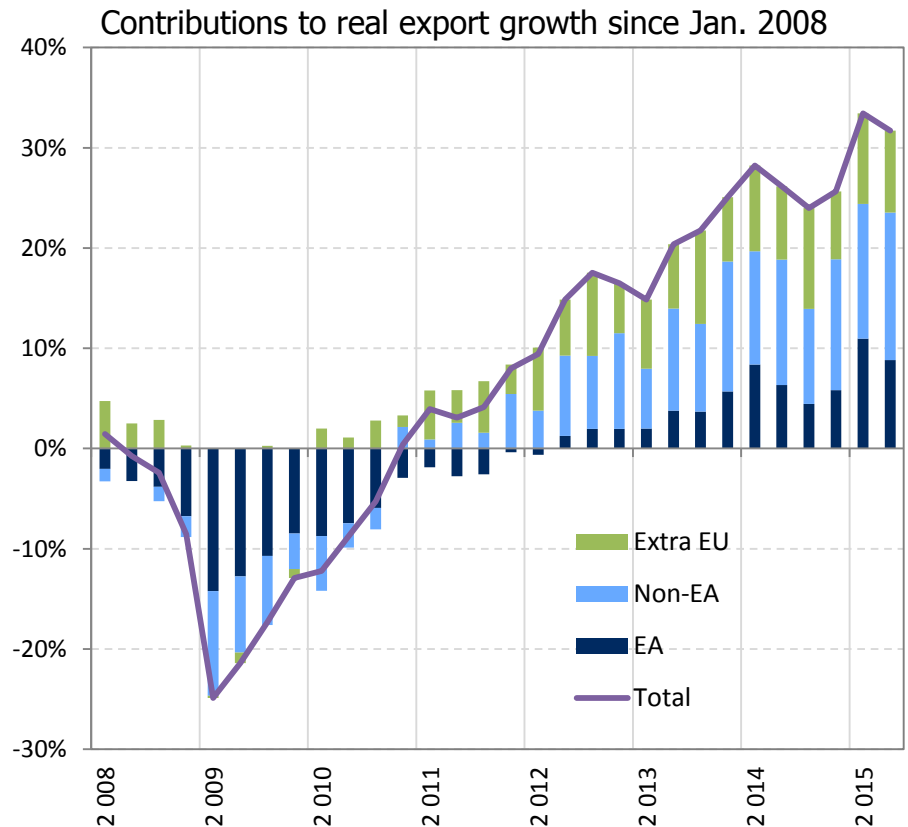


Export growth observed also in Czech Republic, so not necessarily euro-specific.  
Bigger improvement recorded in non-EA exports.

**Actual vs expected intra-EA exports (SK / CZ) with interval bands assumed in the NBS calculation of longer-term benefits of euro adoption (extra export growth due to common currency)**



Sources: Eurostat, NBS calculations.



Sources: Eurostat, NBS calculations.

# Impact of global trade developments on exports



SK export performance improved. Despite euro adoption, exports to extra-EA countries picked up (in terms of both volume and market shares)

## SK

Real exports		
Average YoY growth [%]	2000-2007	2009-2014
<b>Total exports</b>	<b>15.2</b>	<b>9.3</b>
Intra EA	14.8	7.9
Extra EA	15.6	10.5

Market shares		
Average YoY growth [%]	2000-2007	2009-2014
<b>Total</b>	<b>7.9</b>	<b>4.0</b>
Intra	9.5	3.7
Extra	5.8	4.1

## CZ

Real exports		
Average YoY growth [%]	2000-2007	2009-2014
<b>Total export</b>	<b>12.9</b>	<b>7.4</b>

Market shares		
Average YoY growth [%]	2000-2007	2009-2014
<b>Total</b>	<b>5.8</b>	<b>2.2</b>

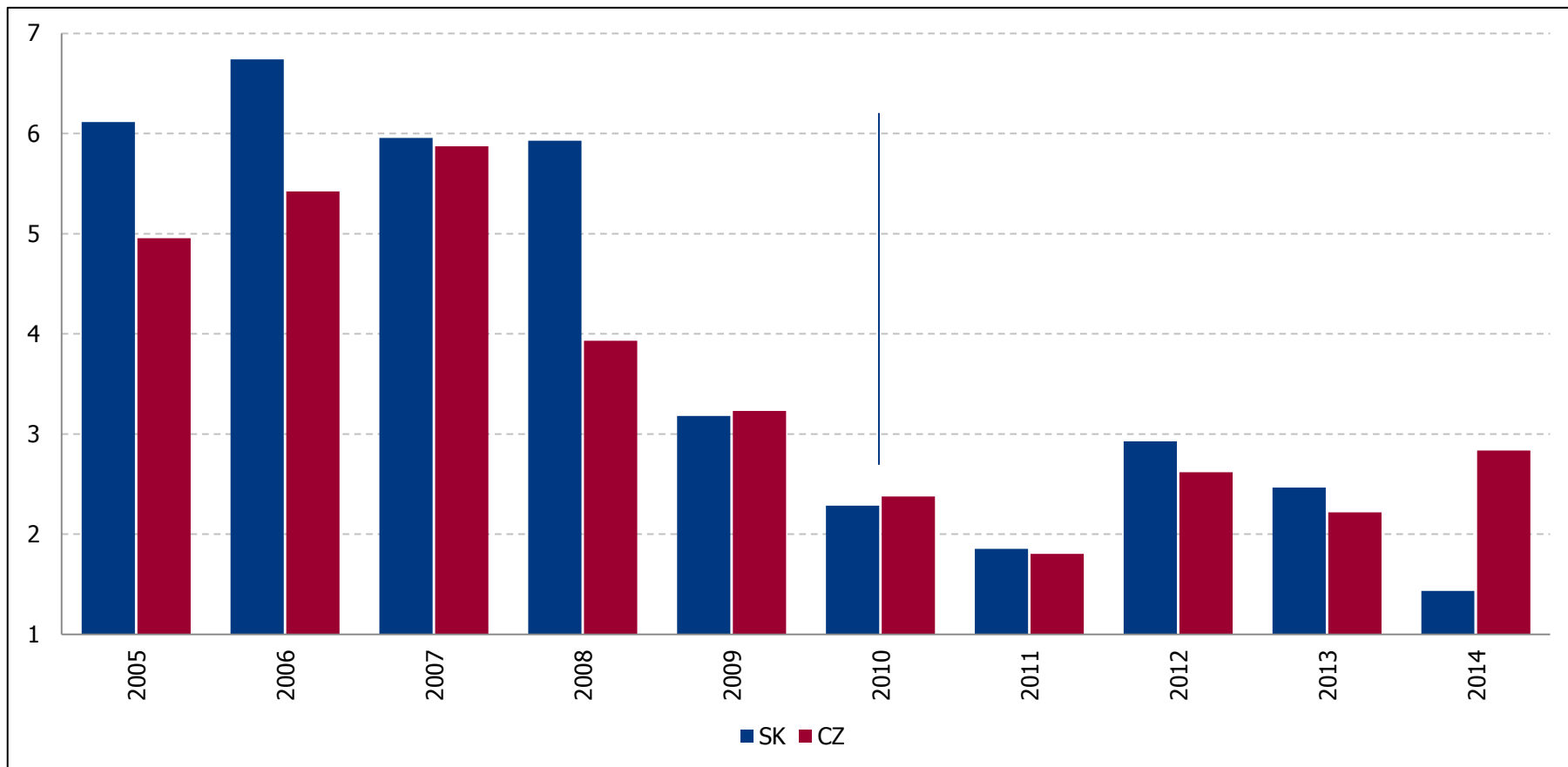
Sources: Eurostat, NBS calculations.

# Foreign direct investment (% of GDP)



For FDI inflows, Slovakia's results were slightly better before euro adoption and more balanced/mixed afterwards.

FDI inflows / GDP (3Y MA)





# **Economic flexibility and structural reforms**

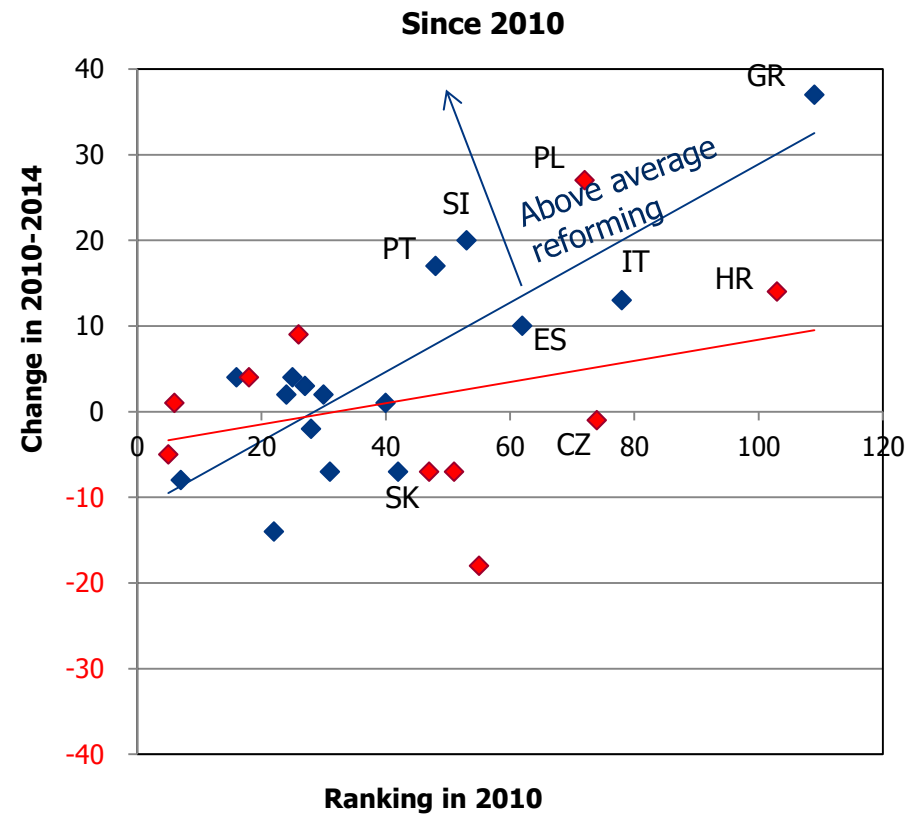
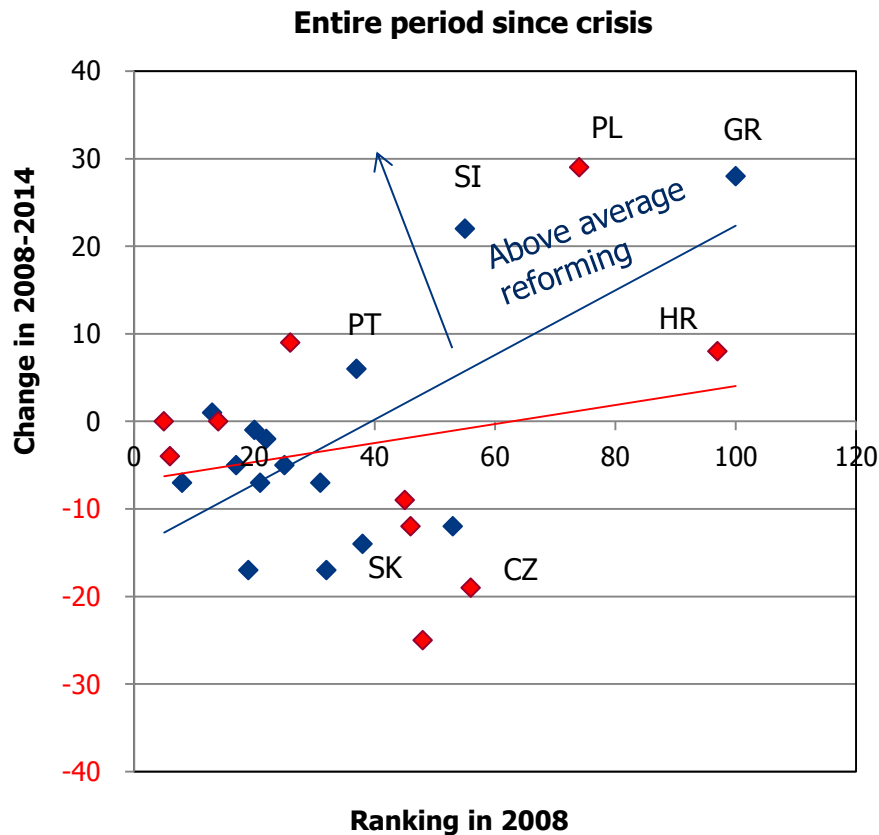


- Non-EMU countries' growth stronger than EA average in recent years
- To mitigate nominal exchange rate inflexibility, the economy should be reformed so that other parts are as flexible as possible
- Has EA carried out further structural reforms to offset the lack of nominal currency flexibility?

# Is reform process pace slightly stronger in EA ?



The EA's ease of doing business ranking is slightly higher due in part to reforms "forced upon" programme countries. In this respect, both SK and CZ are lagging.





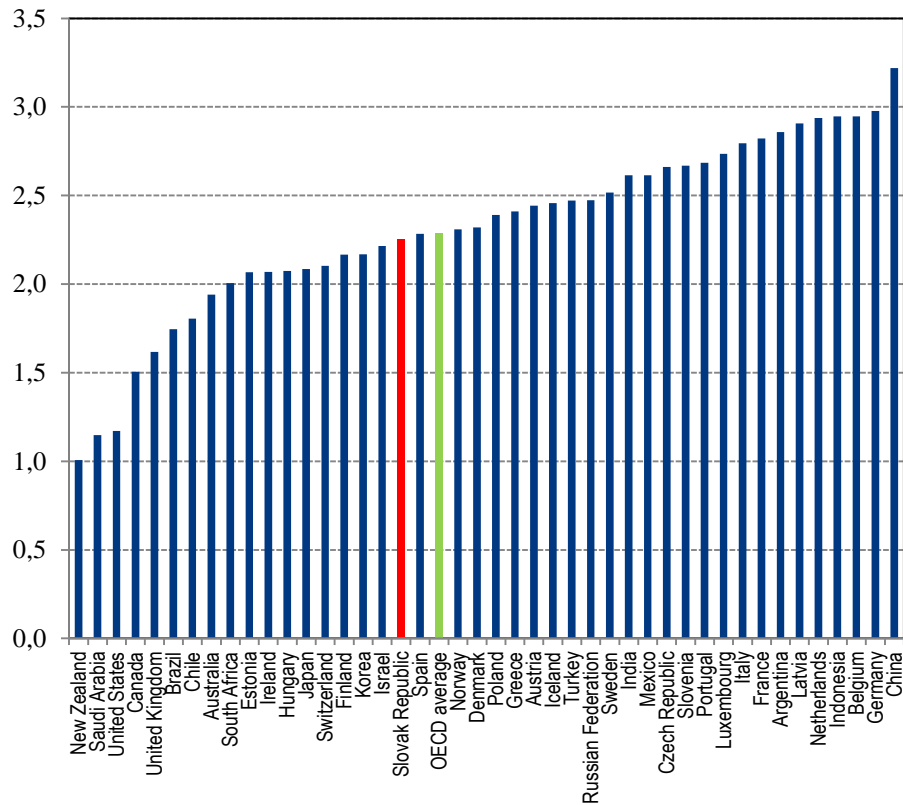
# Labour market flexibility in Slovakia



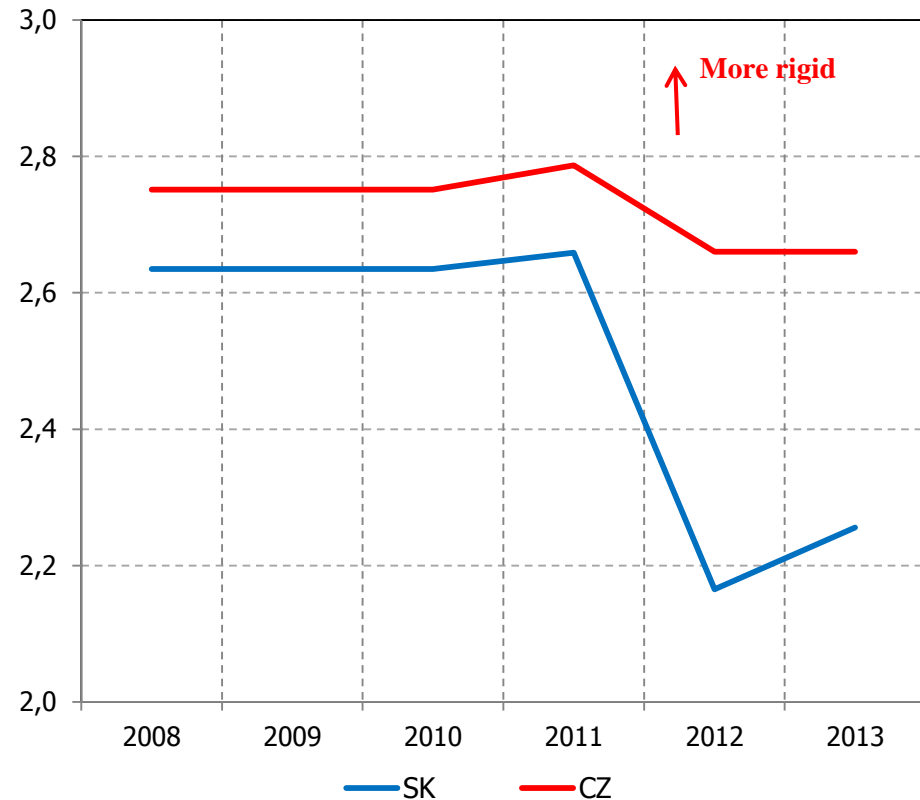
Countries without their own currency should have above-average labour market flexibility (LBF).

LBF in Slovakia improved markedly, but remains only close to OECD average.

EPL Index (eprc\_v3) – OECD countries



EPL Index - Slovakia



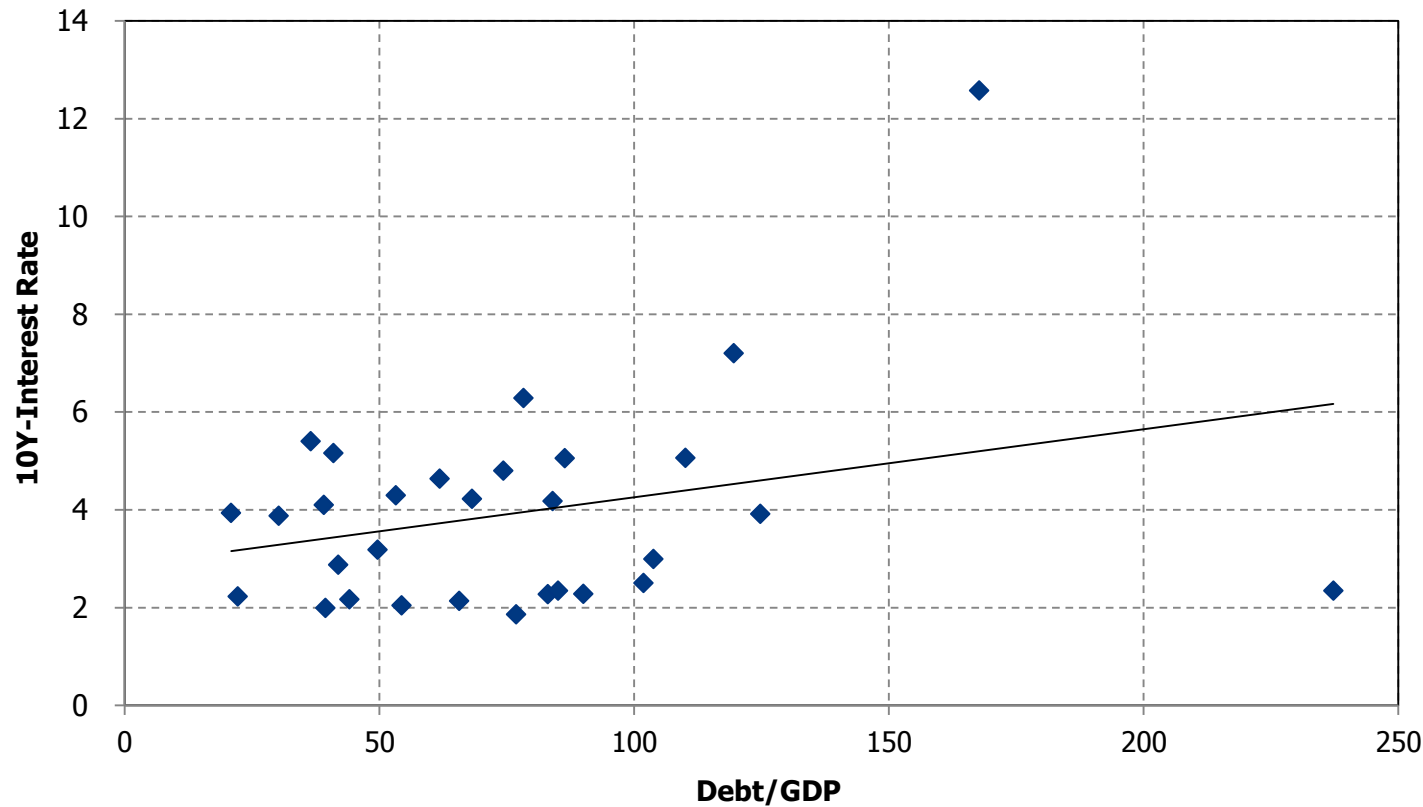


# **Euro debt crisis**

# Sovereign debt vs debt costs



OECD+EU countries - weak relationship between debt costs and indebtedness.



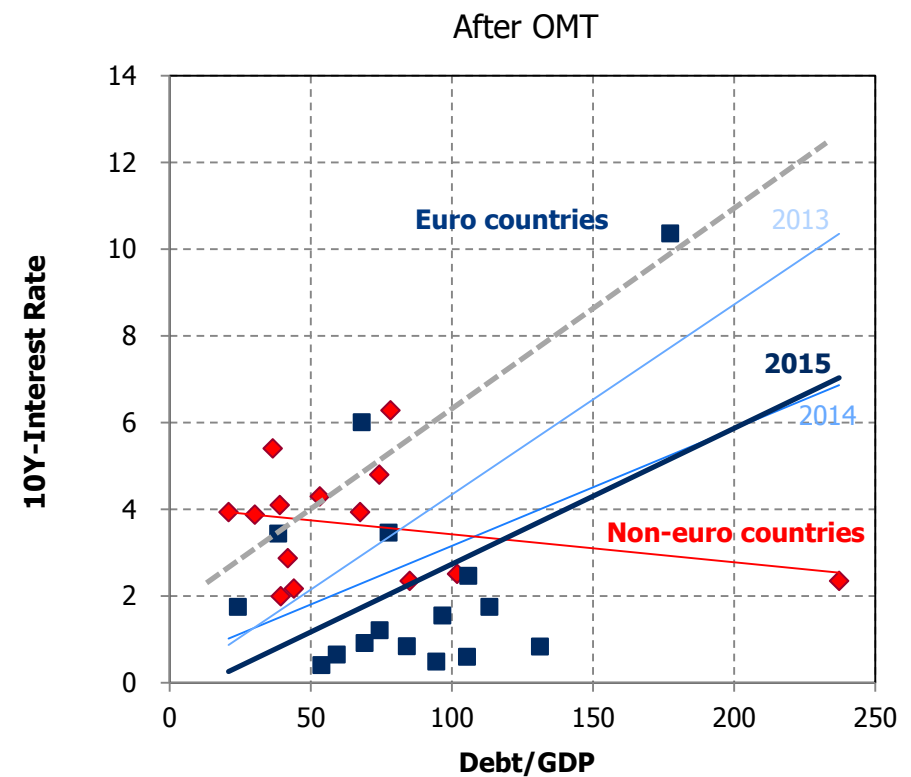
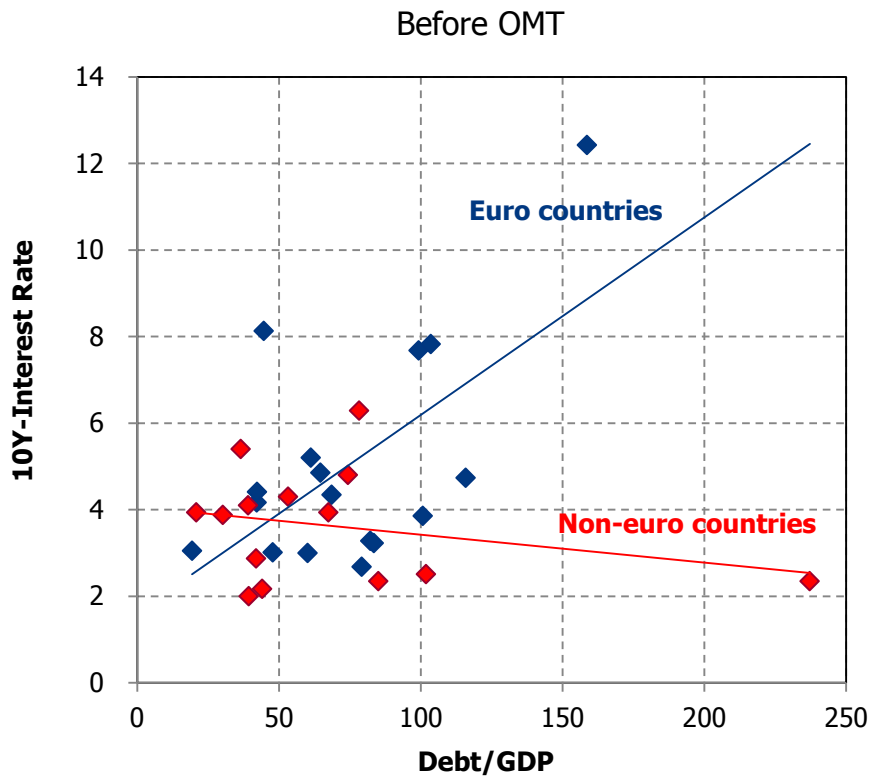
Sources: OECD, Eurostat

Note: Averages for 2010-2015. Estimates for 2015 by OECD.

# Sovereign debt vs debt costs



The relationship seems to be more pronounced for the euro area (no local central bank as a lender of last resort). OMT helped, but differences remain.



Sources: OECD, EC, Eurostat.

Note: The 2010-2015 average for non-euro area countries shown in both charts. In the case of euro area countries, the pre-OMT period represents the average for 2010-2011 and the post-OMT period corresponds to 2013-2015.

# Rating downgrades for Slovakia and other EA countries



EMU membership specifically mentioned in explanation of downgrade in 2012  
(EA countries downgraded en bloc)

Rating S&P	Grade	1994	1998	2004	2009	2012	2015
	AA-					<b>CZ</b>	<b>CZ</b>
	A+				<b>SK</b>		<b>SK</b>
	A				<b>CZ</b>	<b>SK</b>	
	A-		<b>CZ</b>	<b>SK = CZ</b>			
	BBB+	<b>CZ</b>					
	BBB						
	BBB-						
	BB+		<b>SK</b>				
	BB						
	BB-	<b>SK</b>					

-5 grades

-4 grades

+1

-2

-1

Investment grade

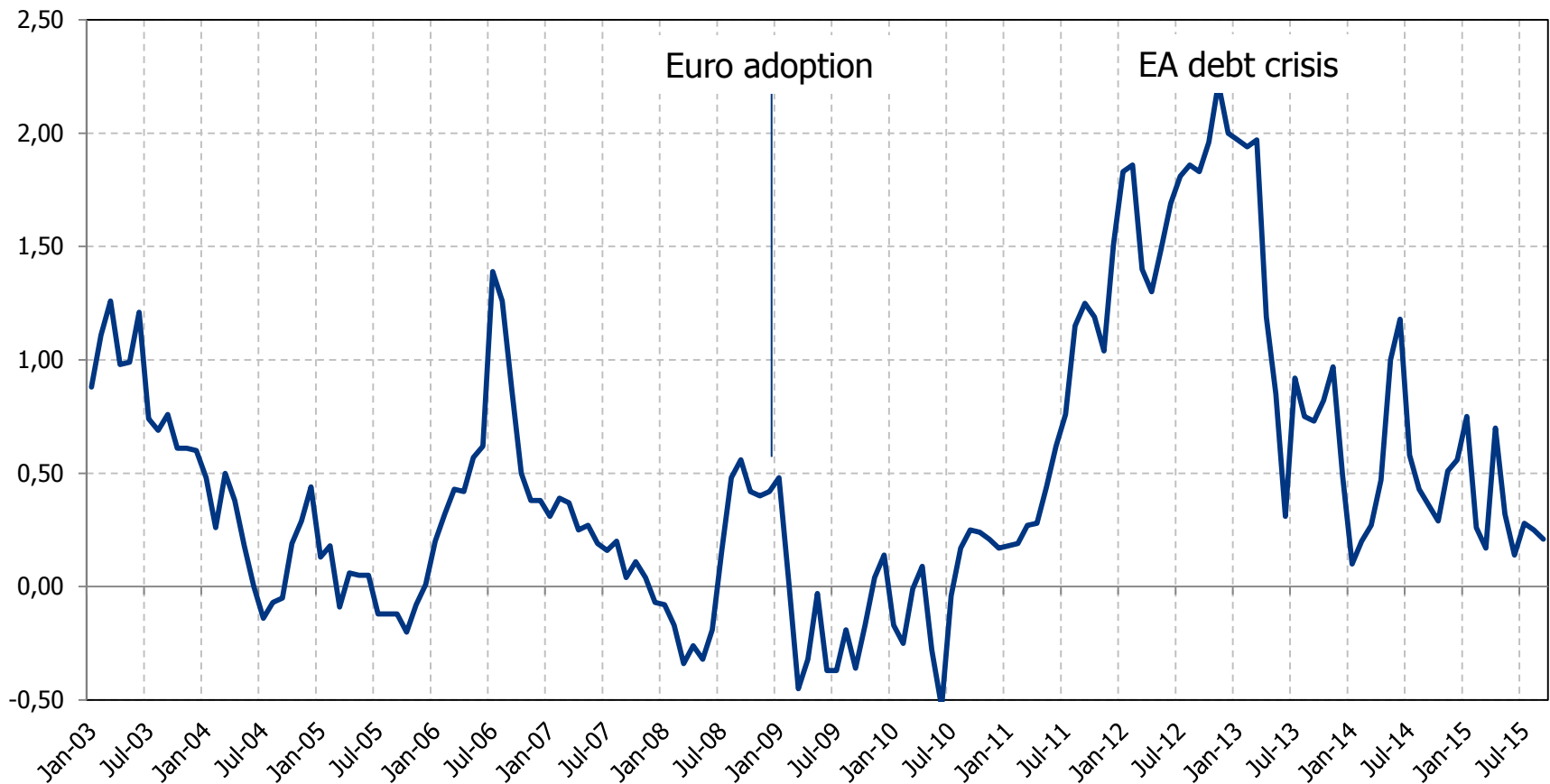
Non-investment grade

# SK – CZ bond yield spread



During most of the crisis, spreads widened sharply, but recently they have moved back towards pre-euro levels.

10Y bond yields in SK – bond yields in CZ (in p. p.)



Source: ECB.

# Some lessons learned



- Materialisation of immediate benefits of euro was mostly in line with assumptions: transaction costs declined, changeover effect low
- EA debt crisis induced additional costs related to contagion and fiscal contributions to the EFSF and ESM
- Huge external shock highlighted lack of exchange rate flexibility vis-a-vis neighbours
- Lack of a currency buffer caused currency to become strongly overvalued during recession
- Later, a weaker real exchange rate seems to have provided necessary additional stimulus (SK not in recession in 2013)
- Still no clear sign of the most important longer-term benefits (higher FDI and trade growth).
- **It is vital that the rest of the economy be as flexible as possible in order to offset exchange rate rigidity**



# Appendix



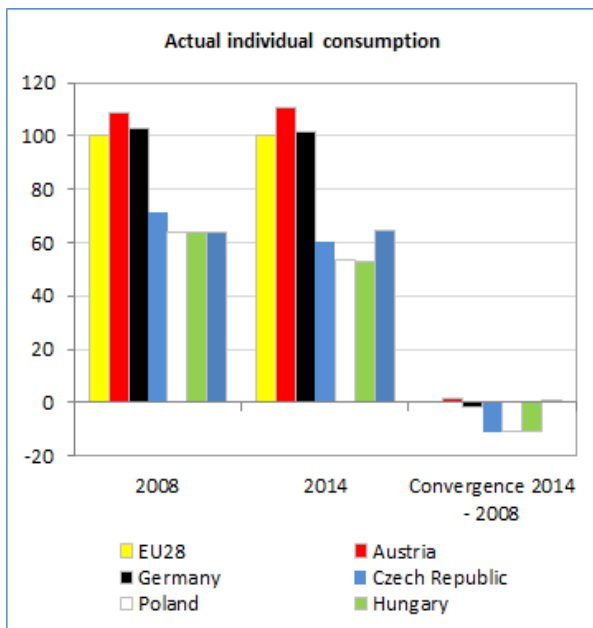
# Slovak price level converged, unlike Czech price level



All CE-4 countries apart from Slovakia saw price-level divergence during the crisis. Convergence in Slovakia explained mainly by prices of hotels/restaurants and food.

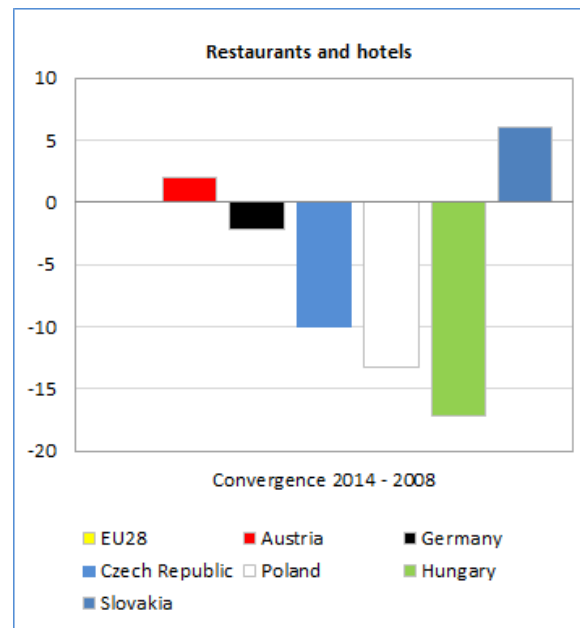
Price level comparison with EA and price-level change relative to EA countries in 2008 and 2014

## Actual individual consumption



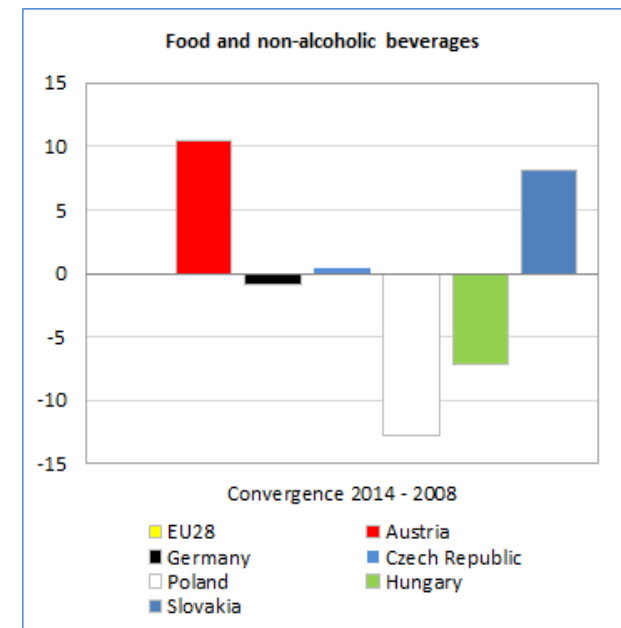
Price-level change relative to EA countries in 2008 and 2014

## Hotels and restaurants



Price-level change relative to EA countries in 2008 and 2014

## Food and non-alcoholic beverages



# What do prices of frequent out-of-pocket purchases imply? Not much.



The inflation rate for frequent out-of-pocket purchases (FROOPP) did not change significantly after the euro adoption, despite popular perception to the contrary. Even the infamous “price of coffee” has not rocketed (though it did increase somewhat just before the euro adoption).

Comparison of annual rate of change in FROOPP inflation, excluding administered prices and “cup of coffee” price.

**FROOPP inflation in SK and EA (annual percentage change) Cup of coffee (price level and annual percentage change)**

