

# **Regional monetary heterogeneities within currency unions Challenges for the EMU and selected EU countries in the financial crisis**

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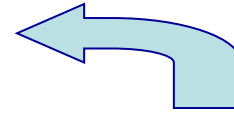
# Outline

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- 2) Regional inflation heterogeneities
  - Empirical evidences
  - Possible causes
- 3) Inflation dynamics during the financial crisis in Europe
- 4) Inflation and other selected economic indicators
- 5) Regional inflation differentials at the sub-national level

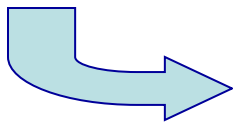
# The OCA background

One country,  
one money

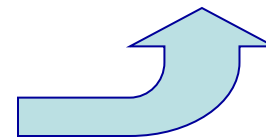
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One money,  
one market



One market,  
one money

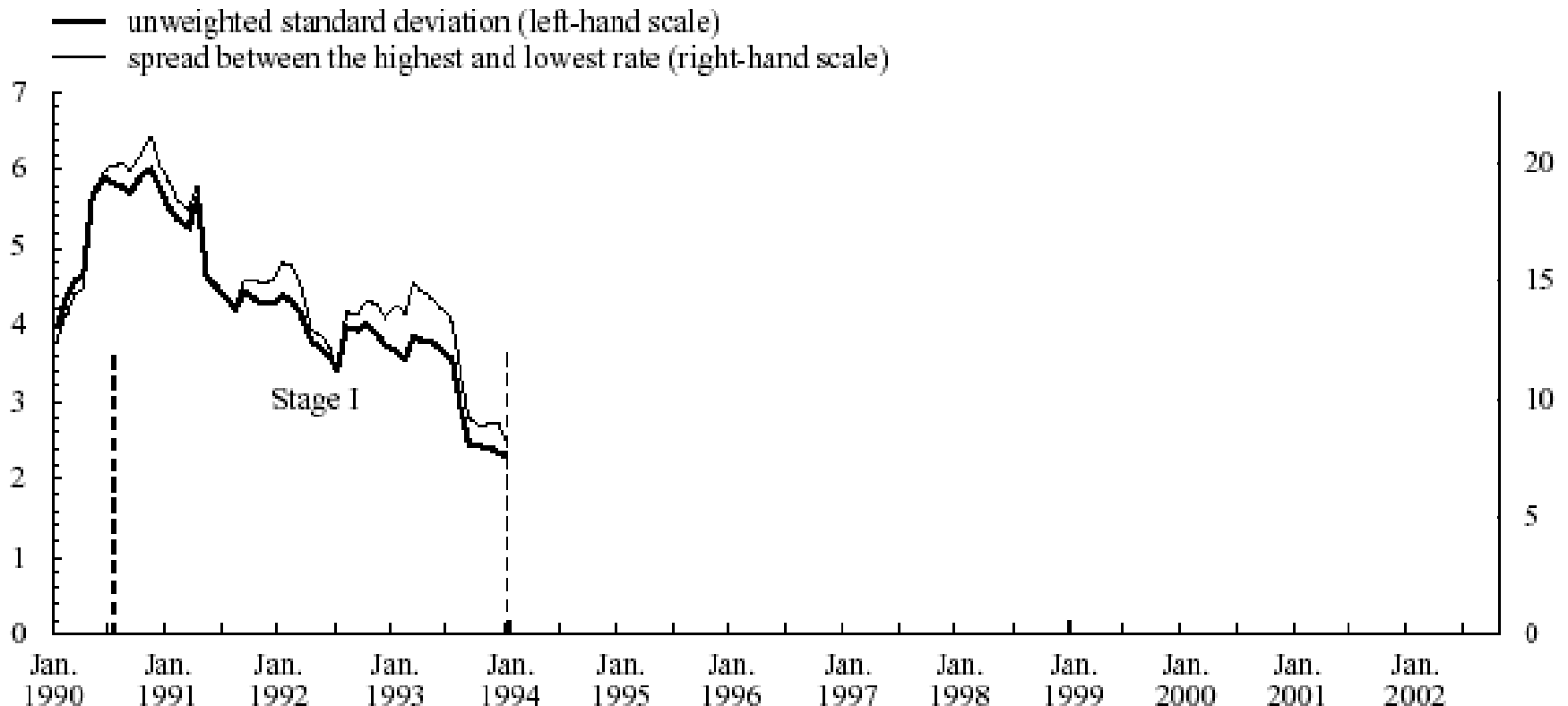


# The OCA background

- Optimum Currency Area theory is again much debated in the financial crisis
- Original question: under what conditions a region constitutes an optimum currency area?
  - High factor mobility
  - High price flexibility
- Problem: asymmetric shocks
- Inflation differentials play an important role as a macroeconomic adjustment mechanism

# Regional inflation heterogeneities: empirics

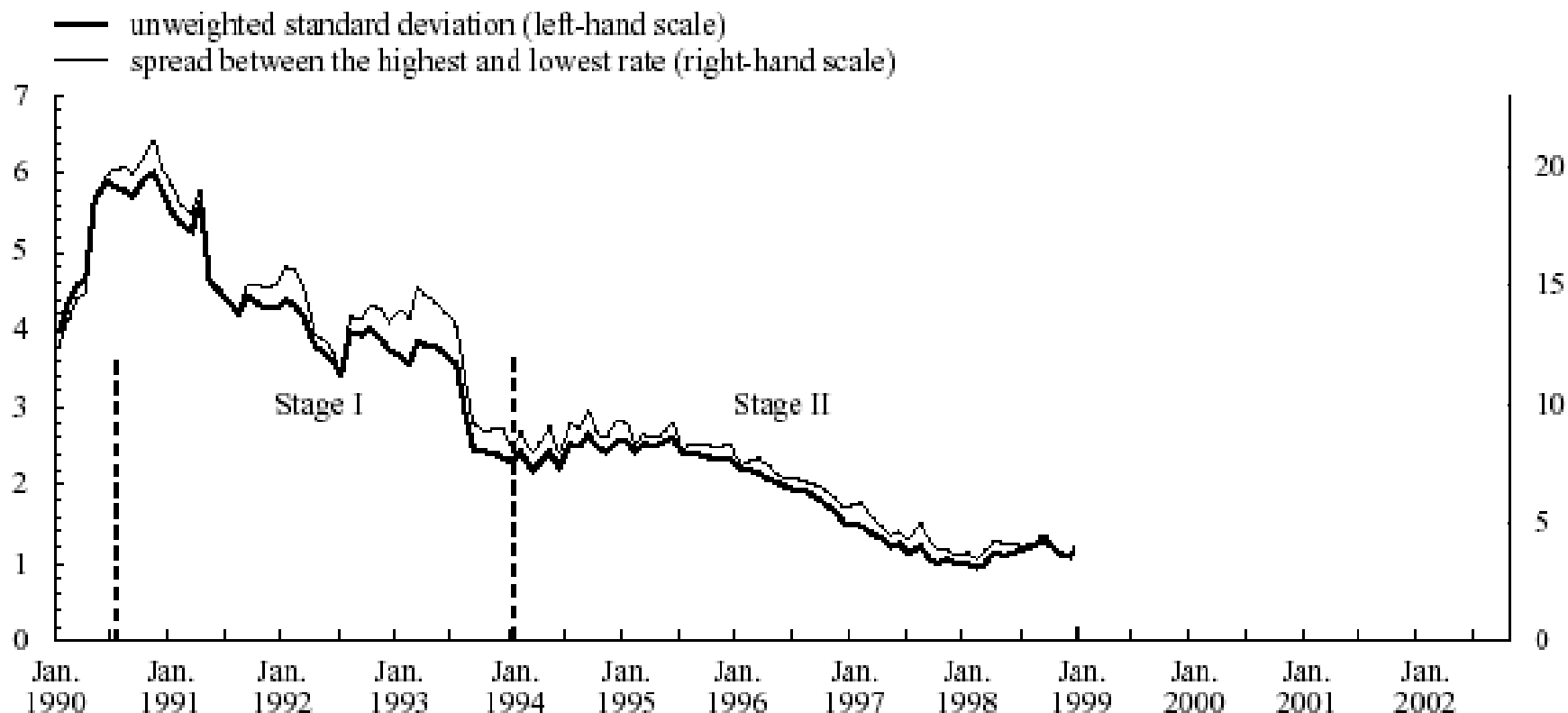
## Inflation dispersion measures across the euro area countries



Source: ECB (2003)

# Regional inflation heterogeneities: empirics

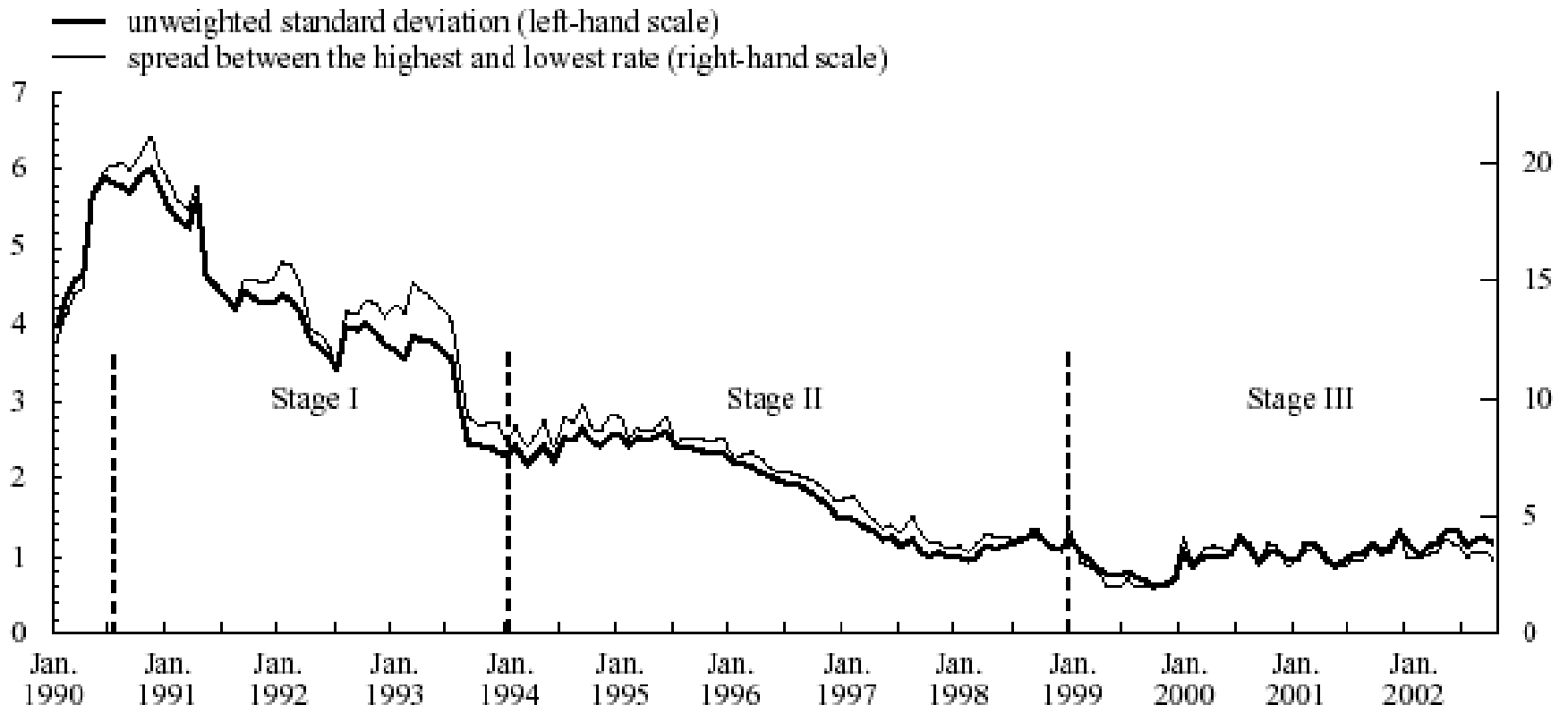
## Inflation dispersion measures across the euro area countries



Source: ECB (2003)

# Regional inflation heterogeneities: empirics

## Inflation dispersion measures across the euro area countries



Source: ECB (2003)

# Regional inflation heterogeneities

## Potential causes:

1. Differences in consumption patterns and institutional reasons
2. Structural differences
3. Cyclical differences

# Differences in consumption patterns and institutional reasons

- Different national weights for inflation sub-indices **Not significant**
- Changes in advertising, subsidies and indirect taxes **Not significant**

# Structural differences

- External effects

- oil price shocks (different degrees of oil dependency and oil intensity) **Not significant**
- exchange rate (different pass-through patterns) **Mixed results**

- Price convergence

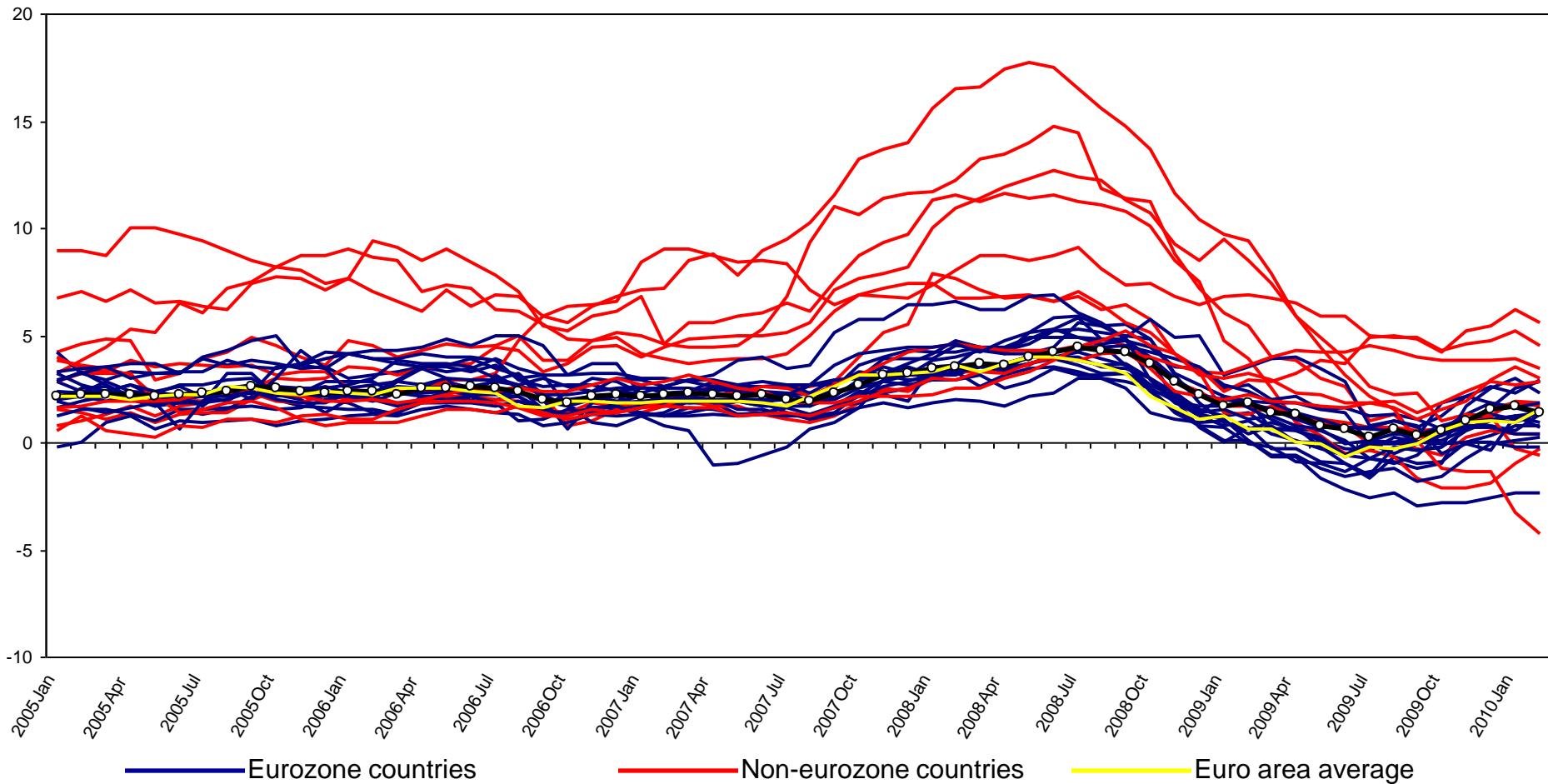
- in the tradable goods sector (PPP) **Mixed results**
- in the non-tradable goods sector (BS model) **Not significant**

- Market integration and structural reforms **Mixed results**

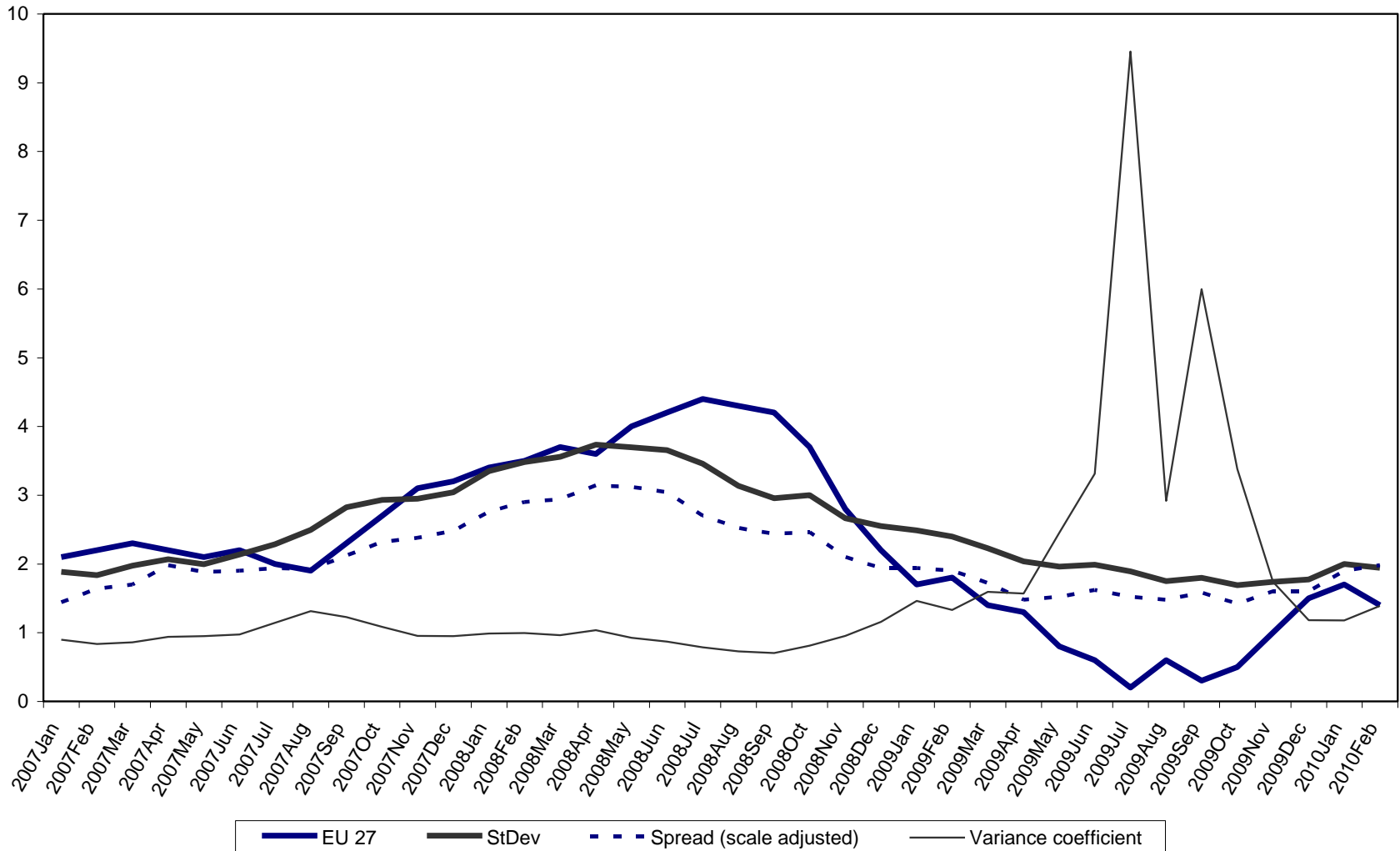
# Cyclical differences

- Differences in
  - the size of **Significant** output gap
    - wage and unemployment developments,
    - real credit growth
  - fiscal **Significant** stance
- Real interest rate **Mixed results**
- Real exchange rate **Mixed results** effects
- Different house price trends **Significant**

# Inflation dynamics during the financial crisis in the EU



# Inflation dispersion in the EU



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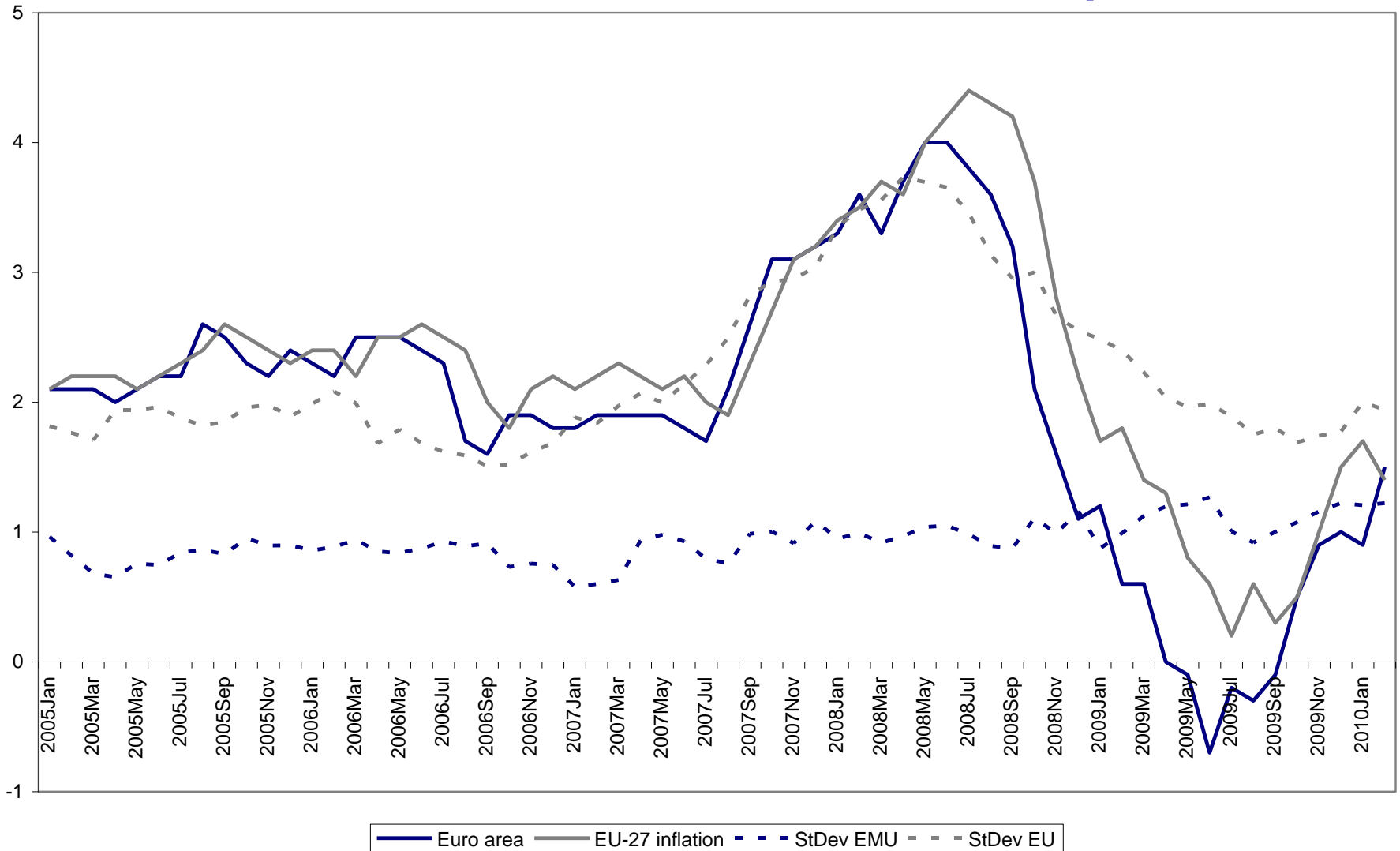
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# Inflation level and inflation dispersion

- ECB (2003): „there is no obvious and clear-cut relationship”
- Possible explanations of the positive correlation:
  - oil price pass-through is the strongest in countries that already show overheating tendencies (Égert et al. 2004)
  - EMU participation requires price stability and convergence of inflation rates (Hofmann-Remsperger 2005)
- The correlation is weak in the euro zone countries and strong outside the euro zone

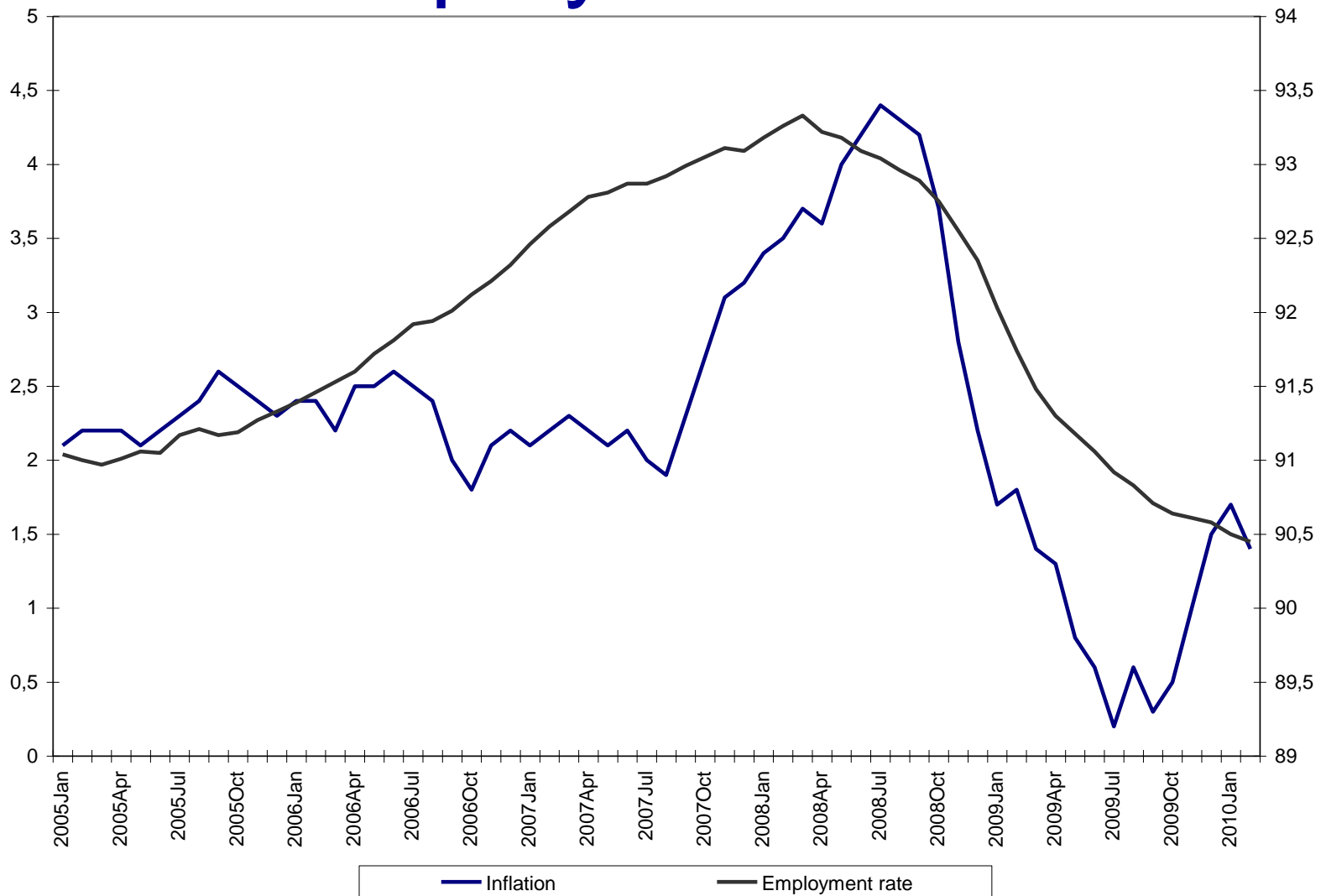
# Inflation level and inflation dispersion



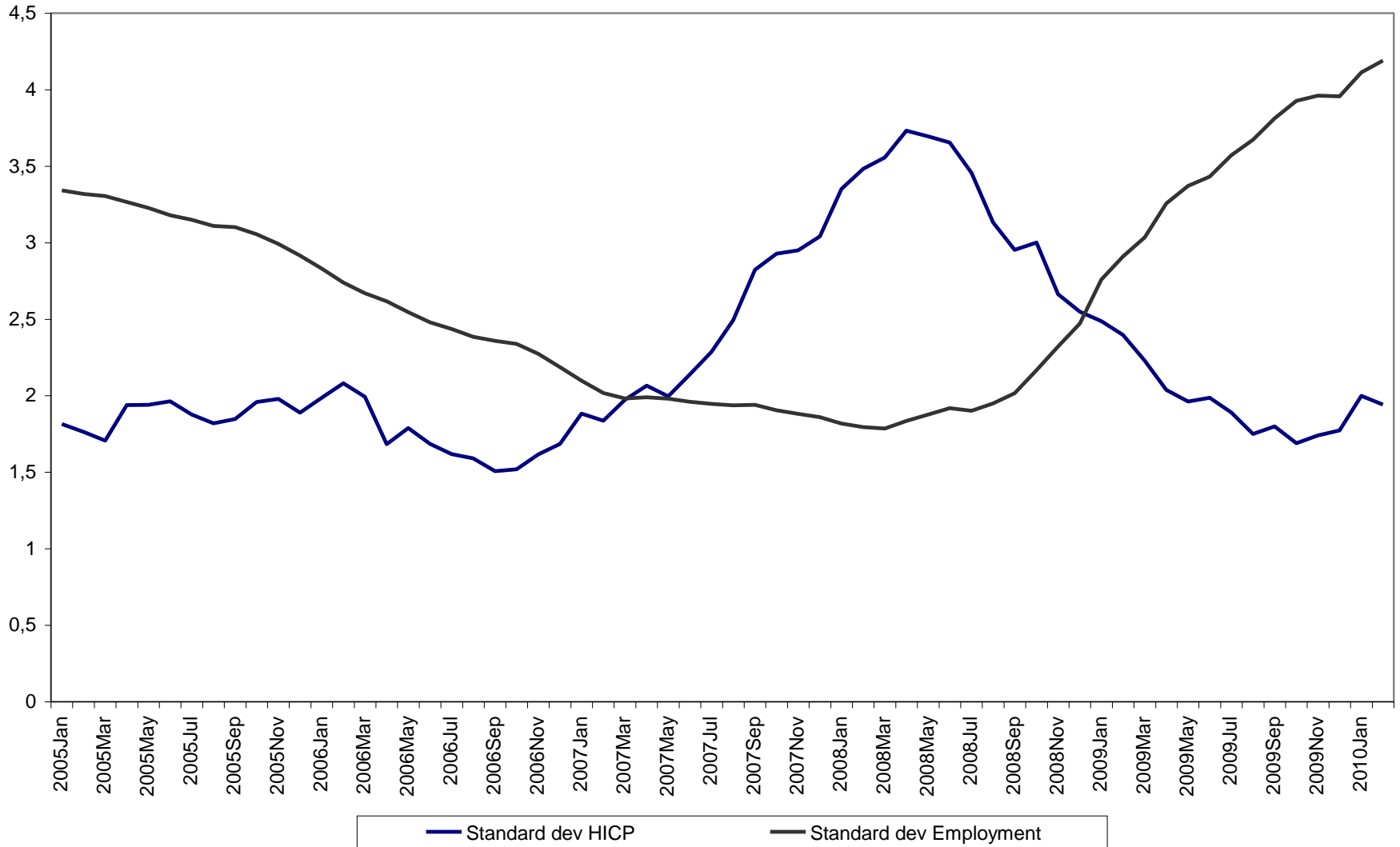
# Inflation and other selected economic indicators during the crisis

- Cyclical factors – employment rate
- Unit labour costs
- Banks' lending activities
- Balance of payments statistics
- Government finances – gross external debt

# Employment rate



# Employment rate dispersion

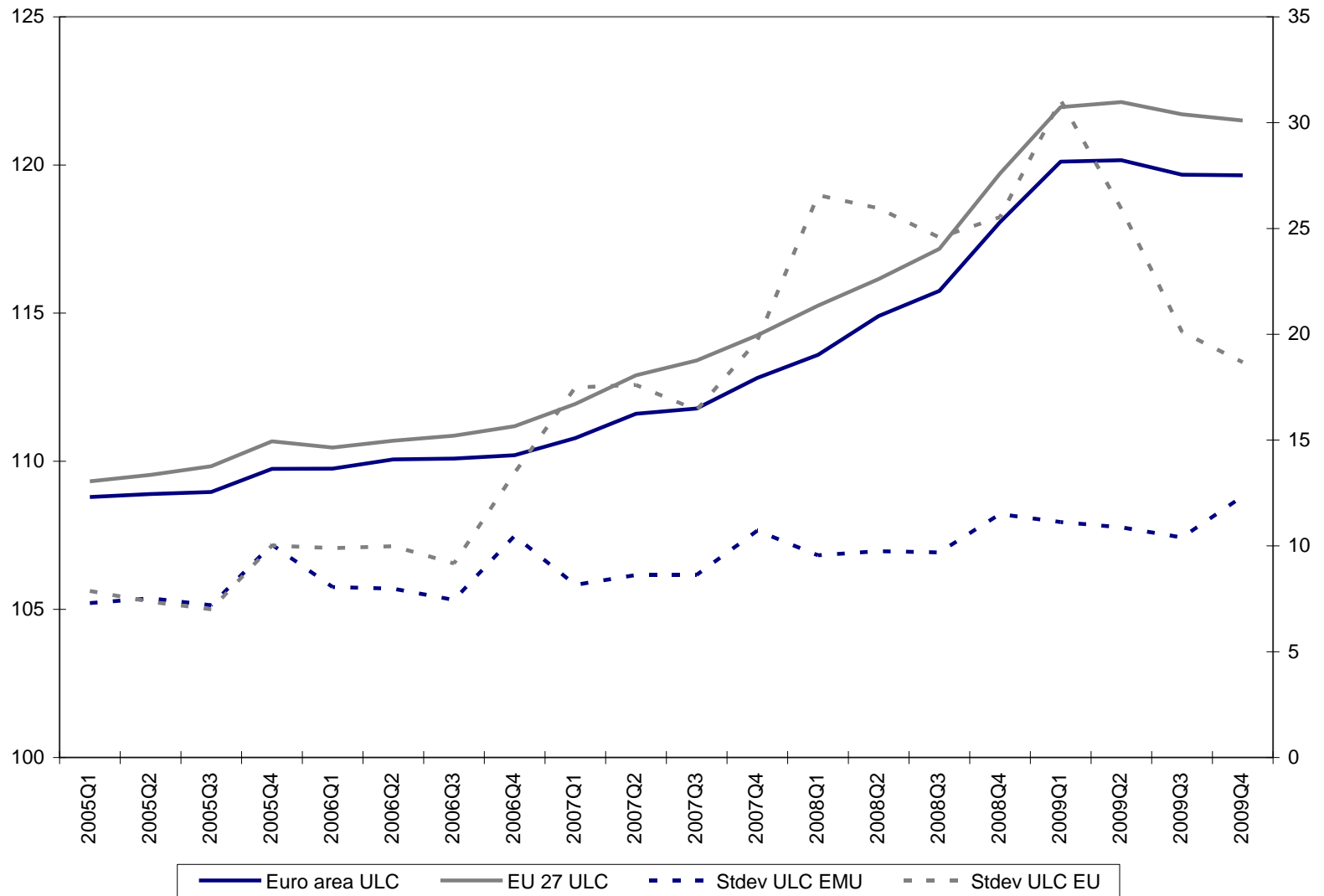


# Employment rate correlation

Correlation coefficients between the inflation rates and the unemployment rates in the EU-27 countries

<b>Austria</b>	<b>Belgium</b>	<b>Bulgaria</b>	<b>Cyprus</b>	<b>Czech Republic</b>	<b>Denmark</b>	<b>Estonia</b>
0,6369	0,3521	0,3569	0,6114	0,7659	0,6171	0,7960
<b>Finland</b>	<b>France</b>	<b>Germany</b>	<b>Greece</b>	<b>Hungary</b>	<b>Ireland</b>	<b>Italy</b>
0,735348	0,655506	-0,151453	0,449284	0,13463	0,916528	0,434612
<b>Latvia</b>	<b>Lithuania</b>	<b>Luxembourg</b>	<b>Malta</b>	<b>Netherlands</b>	<b>Poland</b>	<b>Portugal</b>
0,733349	0,385842	0,465396	0,349368	0,390823	0,687314	0,851906
<b>Romania</b>	<b>Slovakia</b>	<b>Slovenia</b>	<b>Spain</b>	<b>Sweden</b>	<b>United Kingdom</b>	<b>EU-27</b>
0,099034	0,130377	0,590222	0,798667	0,307255	-0,015619	0,708146

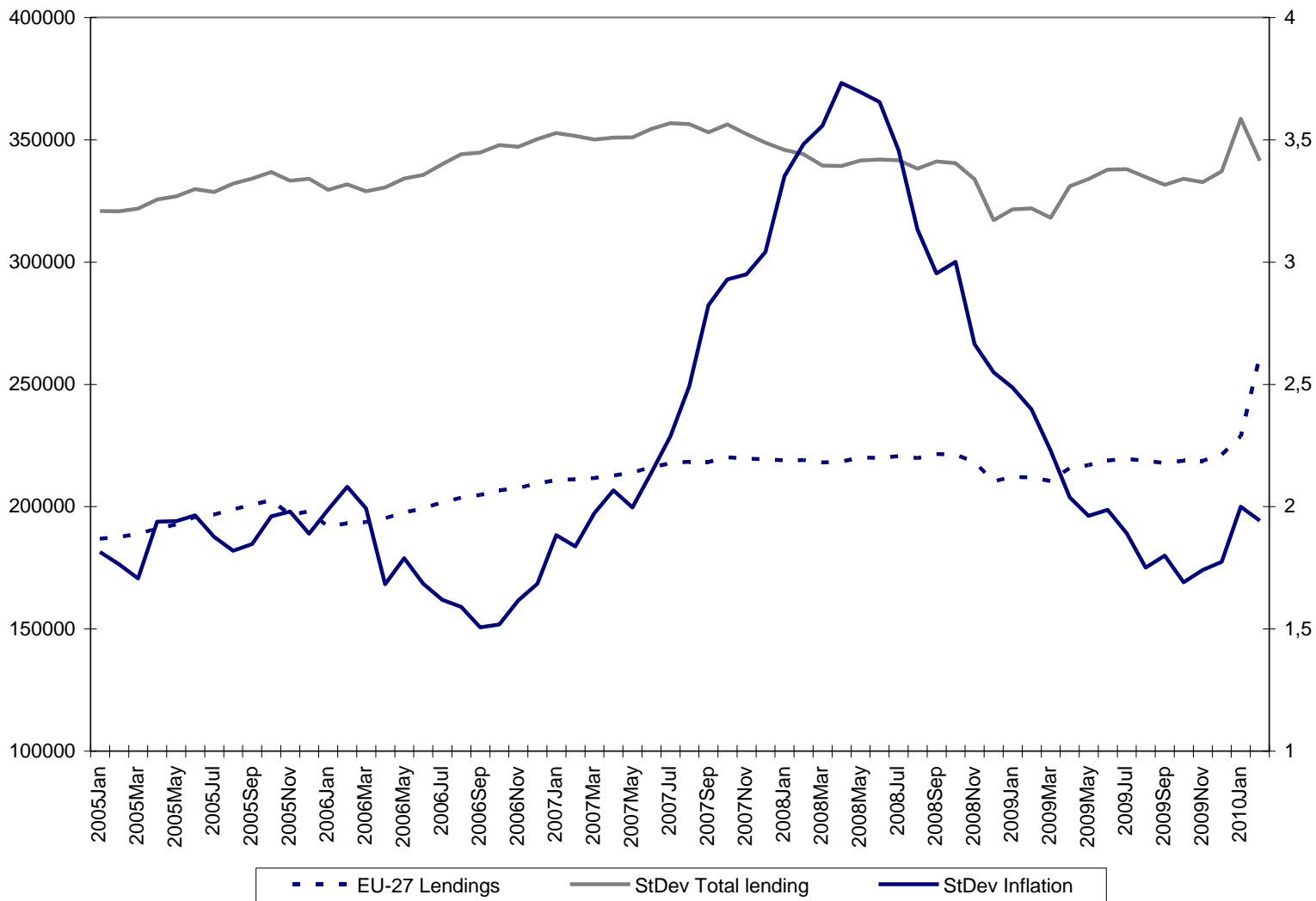
# Unit labour costs



# Unit labour costs

- The size and the direction of the changes are quite similar between the EMU countries and the whole EU
- Much of the spatial inequality is attributable to the non-euro zone countries (especially to Latvia, Estonia and Bulgaria)
- Correlation coefficients between the evolution of the unit labour cost indices and the inflation rates are negative for most of the countries

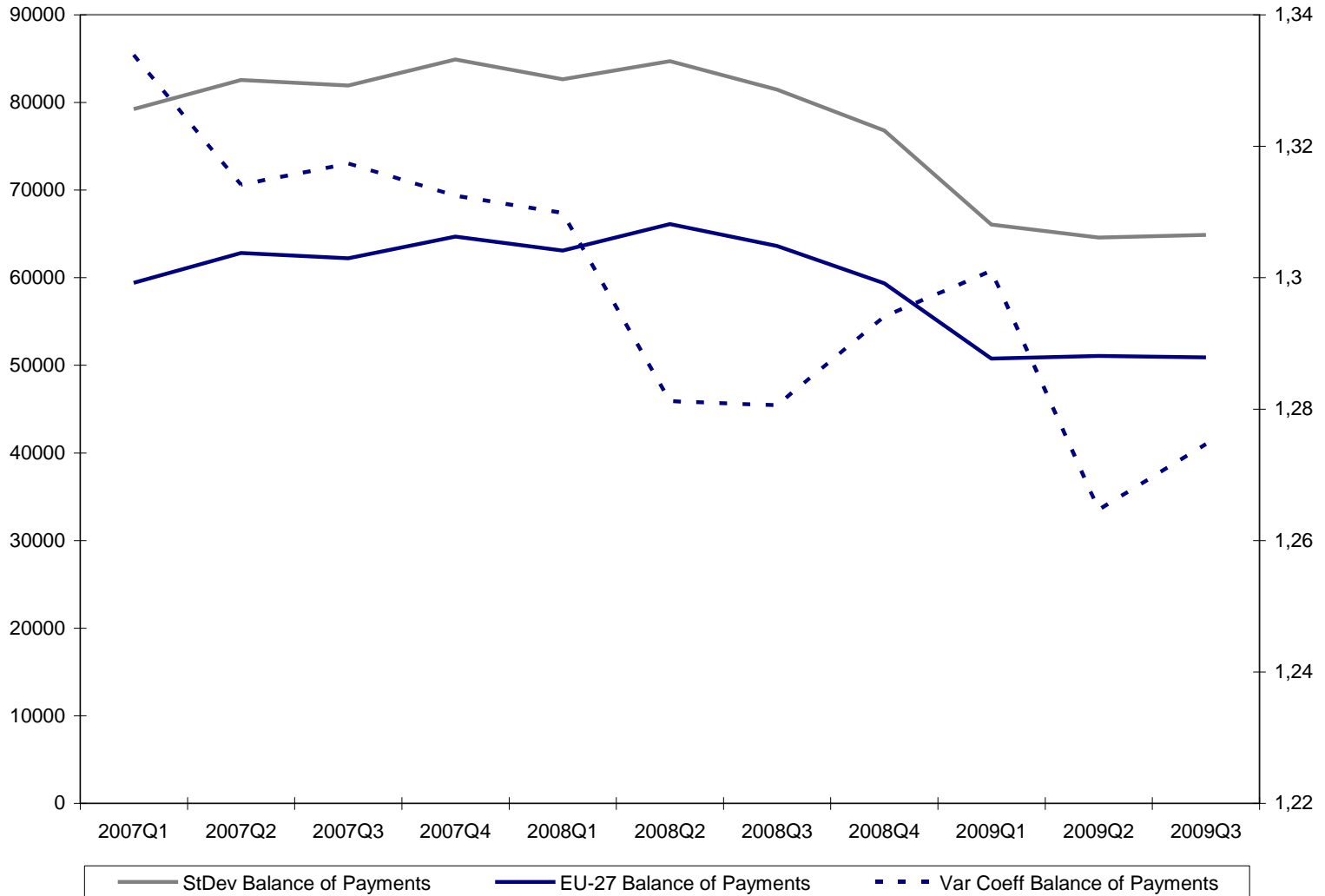
# Bank credits



# Bank credits

- Before the start of the financial crisis, the volume of the banks' lending continuously increased in most of the countries (excepting Germany)
- In the United Kingdom, it started to sink almost one year before the other countries (Autumn 2007)
- After the outbreak of the financial crisis, it dramatically dropped in some countries
  - but not in Germany, France, Spain, Italy, Denmark, Finland, Luxembourg, Cyprus, Slovakia, Bulgaria, Slovenia and Malta

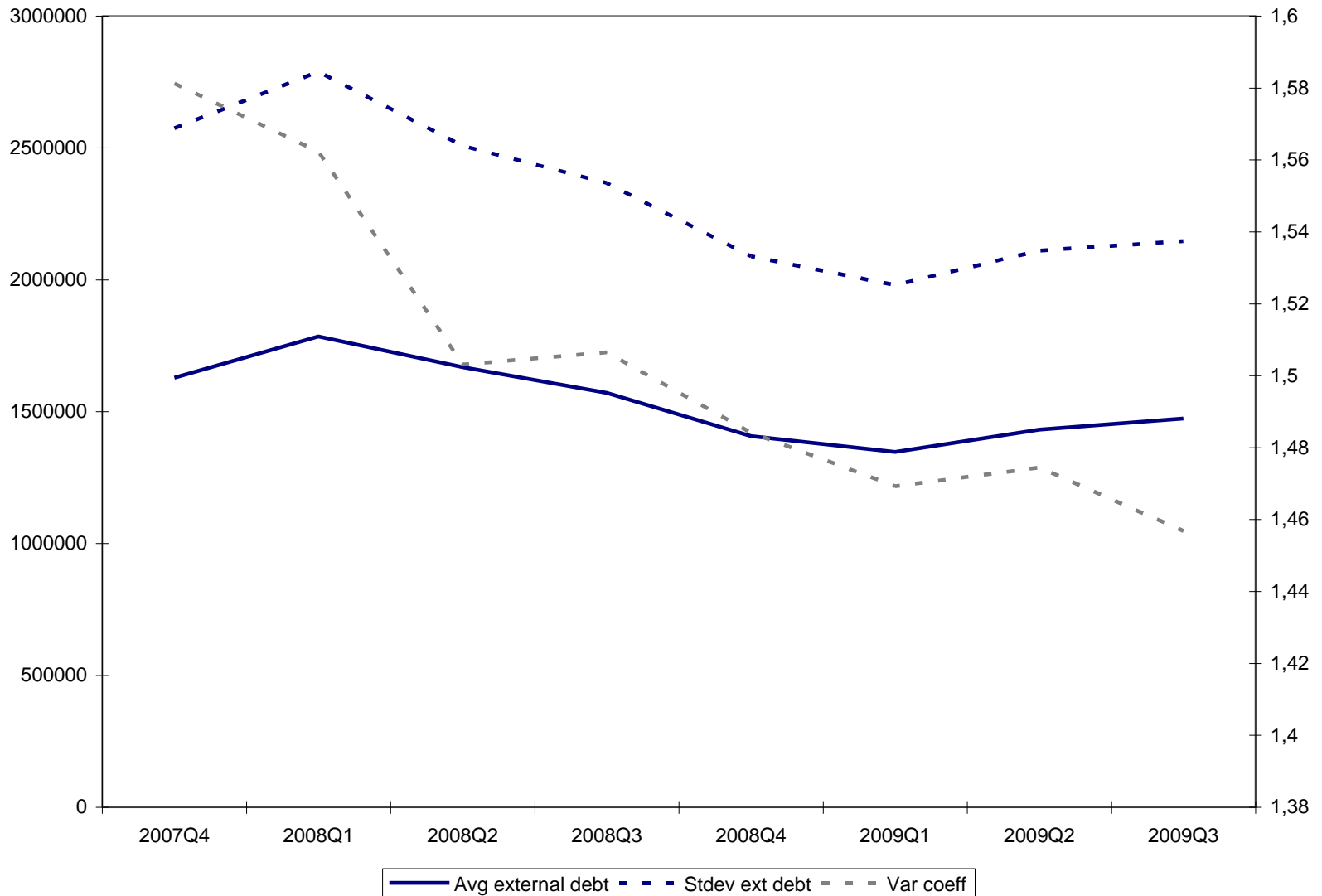
# Balances of payments



# Balances of payments

- Clear co-movement between the average balance of payments and its spatial dispersion
- It may indicate the protectionist reactions of the individual EU member states

# Gross external debts



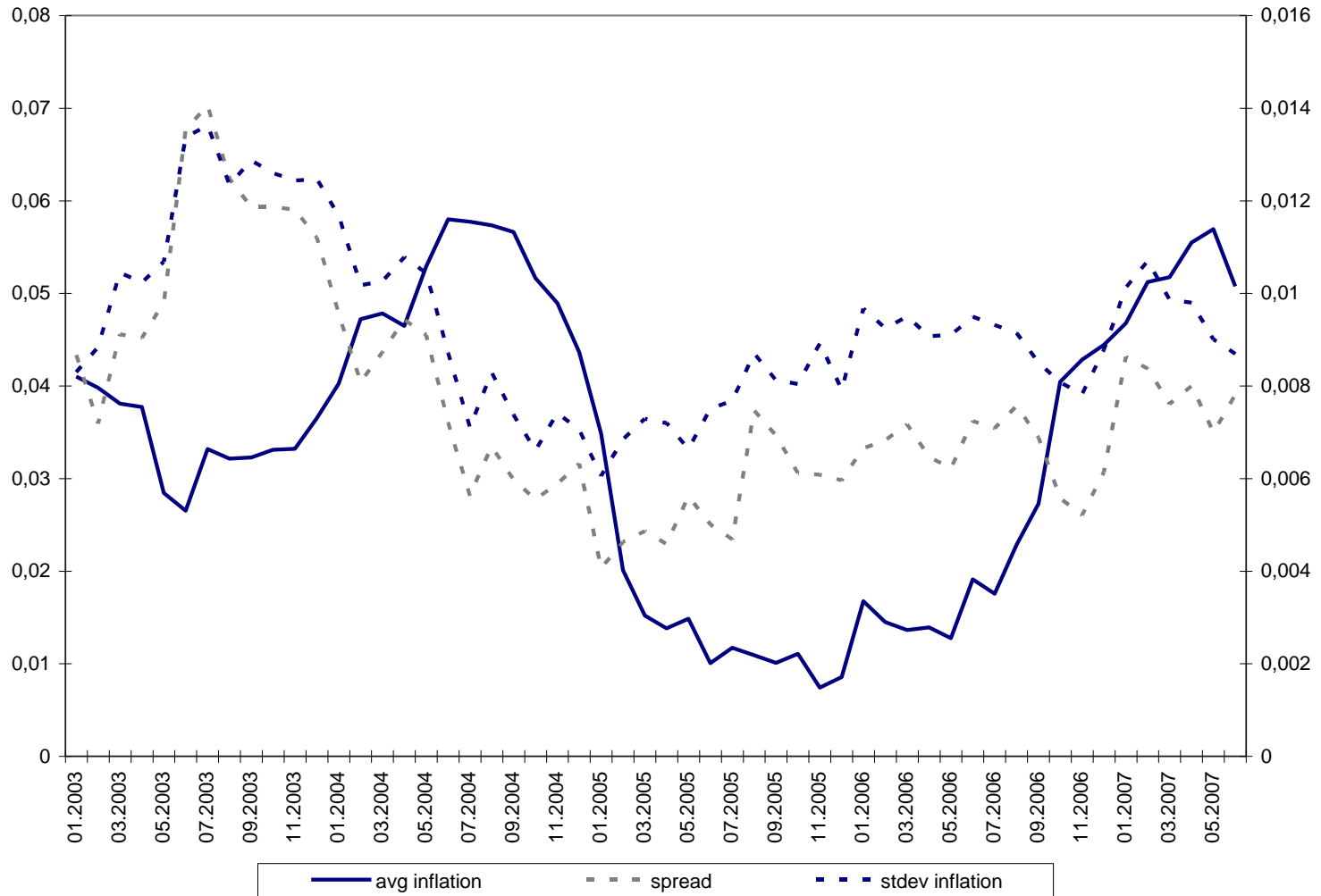
# Gross external debts

- The dynamics of the gross external debts are followed by the spatial inequalities
- The crisis caused substantial spatial asymmetries
- Due to the increased general risk aversion, the market penalizes more the governments' budget deficit and debt
- Spatial differences in fiscal imbalances cause further spatial heterogeneity in government bonds rates

# Regional inflation differentials at the sub-national level

- A case study from Hungary
- CPI data from KSH between 12.2001 and 06.2007
- No clear-cut relationship between the level of the inflation rates and their dispersion
- Strong co-movement between the individual county-level series
- The spatial inequalities are high
  - The spread reached even 6 percentage points in certain periods

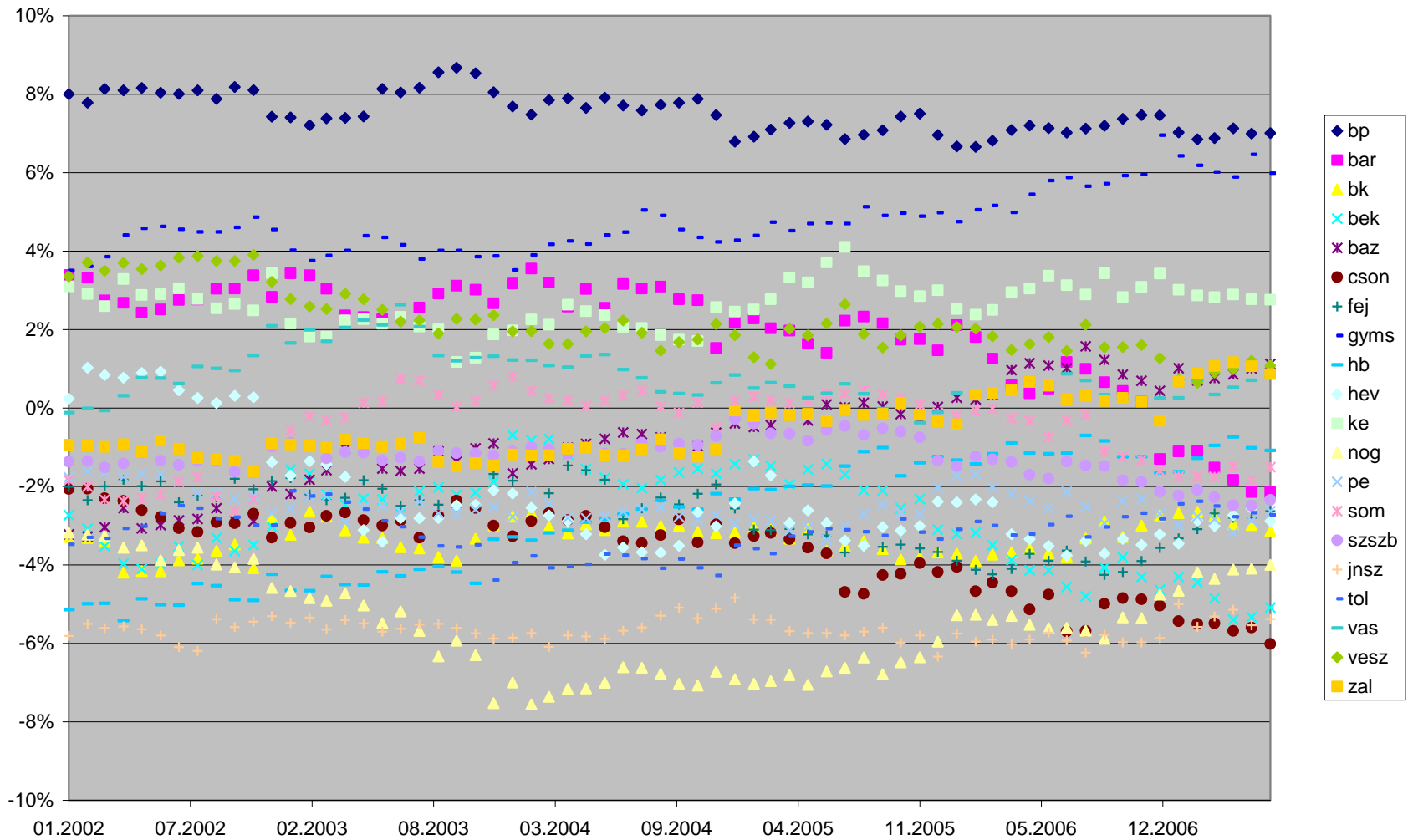
# Inflation heterogeneity in Hungary



# Inflation heterogeneity in Hungary

- Not only the extent of the spatial inequalities varies over the sample period, but also the structure of the inequalities is instable
  - There are no regions with persistently high inflation or low inflation

# Prices



# Prices

- The different levels of economic development are largely reflected by the relative price levels of the individual counties
- The spatial distribution of the relative price levels and the level of spatial price differentials seem quite persistent
- The standard deviation of relative prices is between 3.1 and 3.6 percent during the whole sample period, with no clear decreasing trend
  - There is no price-level convergence
  - There is no catching-up process concerning the prices of the different Hungarian regions
- Similar phenomena – and even divergence – can be observed in other fields of the economy such as economic development or wage levels

# Conclusion

- The two key indicators of the OCA theory – prices and employment – proved flexible during the crisis
- But: flexible movements in prices and employment did not result real convergence
- Convergence processes were offset by
  - the effects of the financial flows
  - the effects of the fiscal policy measures and the budgetary conditions

# Conclusion

- The financial crisis provides a good opportunity to prompt budgetary adjustment and structural reforms, including fiscal reforms
- Different fiscal policy stance in the individual countries may affect important monetary variables and therefore cause further spatial monetary heterogeneities

# References

- European Central Bank (2003) Inflation differentials in the euro area: Potential causes and policy implications.
- Égert, Balázs – D. Ritzberger-Grünwald – M.A. Silgoner (2004). Inflation Differentials in Europe: Past Experience and Future Prospects, Österreichische Nationalbank, Monetary Policy and the Economy, Q1/04.
- Hofmann, B. – Remsperger, H. (2005). Inflation differentials among the Euro area countries: Potential causes and consequences, Journal of Asian Economics, 16, pp. 403-419.



**Thank you for your attention!**

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