Challenges for the new EU Member States on the Road to the Eurozone

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Main challenges for the new EU Member States

The new EU Member States and euro adoption – possible caveats:

- Convergence of prices ($\Rightarrow$ importance of Harrod-Balassa-Samuelson effect on annual inflation, influence of administered prices, taxation, etc.);
- Convergence of other nominal values (prices, wages, pensions, etc.);
- Exchange rate fluctuations (ERM II parity);

well-known Impossible Trinity (stability of ER, convergence of inflation and capital flows);

Monetary union – motivation of this study

The new EU Member States and euro adoption:

- OCA theory – synchronisation of economic cycles (one-all fits policy of ECB);
- Inflation differentials and its impact (for the Eurozone and for the entrants);
- Process of real and nominal convergence;
- Existence of external shocks (idiosyncratic).

Note: Focus on the new EU Member States (CEE-9) without Cyprus and Malta which are due to introduce euro in January 2008 and Slovenia which launched euro in January 2007.

Outline of presentation

1. Introduction
2. Convergence process of the new EU Member States
3. Path to the Eurozone
4. Main challenges
5. Conclusions

Key terms

1. Real convergence – convergence of GDP p. c. (e. g. see de la Fuente, 2000[1], see López-Salido, Quirós, 2006[2]);
   (⇒ refinements of the definition – σ–convergence, ß–convergence, e.g. see Barro, Sala-i-Martin, 2004)

[1] Convergence across countries and regions: Theory and empirics, EIB Papers, 2002, No. 2;
[2] López-Salido, J. D., Quirós, G. P.: Comparative analysis: real convergence, cyclical synchrony and inflation differentials. In: The analysis of the Spanish economy: data, instruments and procedures. Bank of Spain, 2006;

1. Price convergence (narrow, e.g. see López-Salido, Quirós, 2006[1]);
2. Convergence of all nominal values (broad, e.g. see Vintrova, 2002[2]);
3. Maastricht convergence criteria (the most common view, see EC, 2006[3], CNB, 2006[4], Schadler et al., 2005[5], Dobrinsky 2006[6], Vávra, 1999[7]).

[1] López-Salido, J. D., Quirós, G. P.: Comparative analysis: real convergence, cyclical synchrony and inflation differentials. In: The analysis of the Spanish economy: data, instruments and procedures. Bank of Spain, 2006;
[2] Social and Economic Consequences of the Czech Republic's Integration into the European Union, Prague, 2002;
[3] Enlargements, Two Years After: An Economic Evaluation. Occasional Paper No. 24, May 2006. EC, 2006;
[4] Convergence report, October 2006;
[5] Adopting the Euro in Central Europe. Challenges of the Next Step in European Integration. IMF Occasional Paper, No. 234, 2005;
[6] Nominal-versus-Real Convergence: The Balancing Act for New EU Entrants, March 2006;
[7] Nominal versus real convergence in a CEE transition country: Do the Maastricht criteria make sense for the Czech republic? Prague: CERGE-EI, 1999, (Discussion Paper Series, No. 16).

Key terms

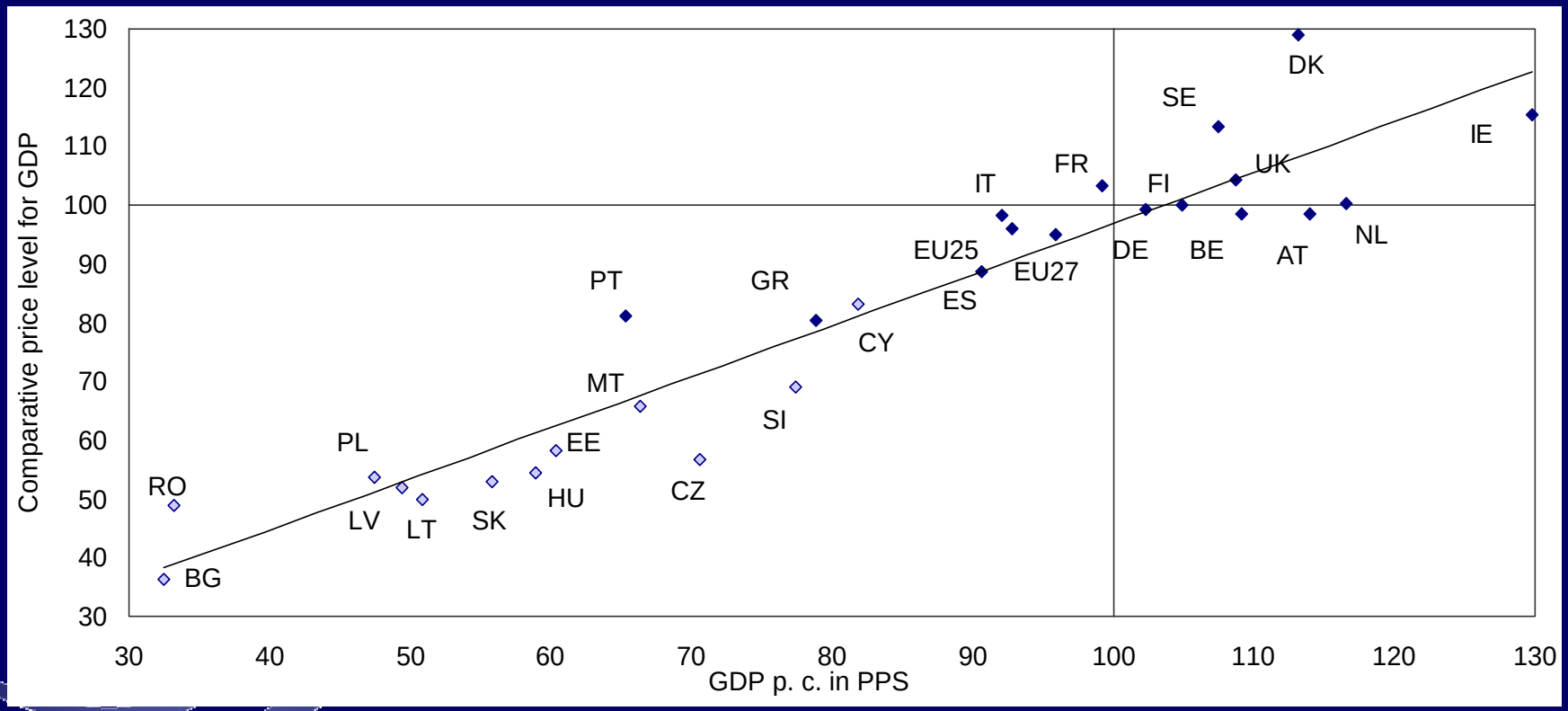
Purchasing power parities (PPP) are the rates of currency conversion that eliminate the differences in price levels between countries. *Per capita* volume indices based on PPP converted data reflect only differences in the volume of goods and services produced. Comparative price levels are defined as the ratios of PPPs to exchange rates. They provide measures of the differences in price levels between countries. The PPPs are given in national currency units per US dollar (US$). The price levels and volume indices derived using these PPPs have been rebased on the OECD average (see OECD).

Purchasing Power Standard (PPS) – is a currency conversion rate that equalises the level of prices in a country with the level of prices in another benchmark country. prices that are compared and PPS that results from the comparison may refer to individual products or to groups of goods, broader aggregates or total GDP (see Eurostat).

Comparative price level (CPL) is defined as the ratio of PPS (PPP) for given economic aggregate (total GDP or its components) to exchange rate or as a inverted value of Exchange Rate Deviation Index (ERDI).

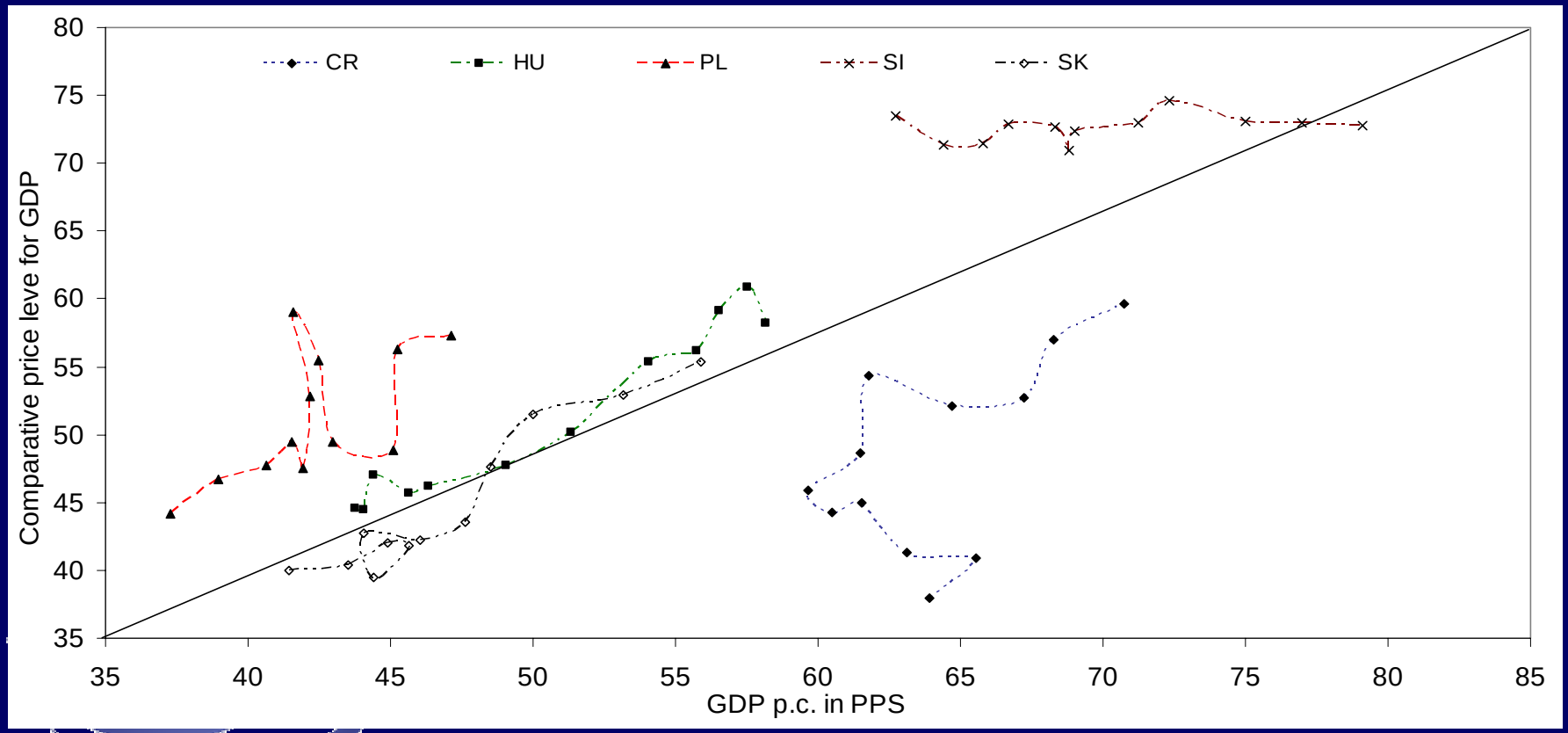
$$CPL_t^A = \frac{ER_t^{A,\,PPP}}{ER_t^A} = \frac{1}{ERDI_t^A},$$

2. Convergence – Comparative Price Level for GDP vs. GDP in PPS, 2006 (EU-15 = 100)



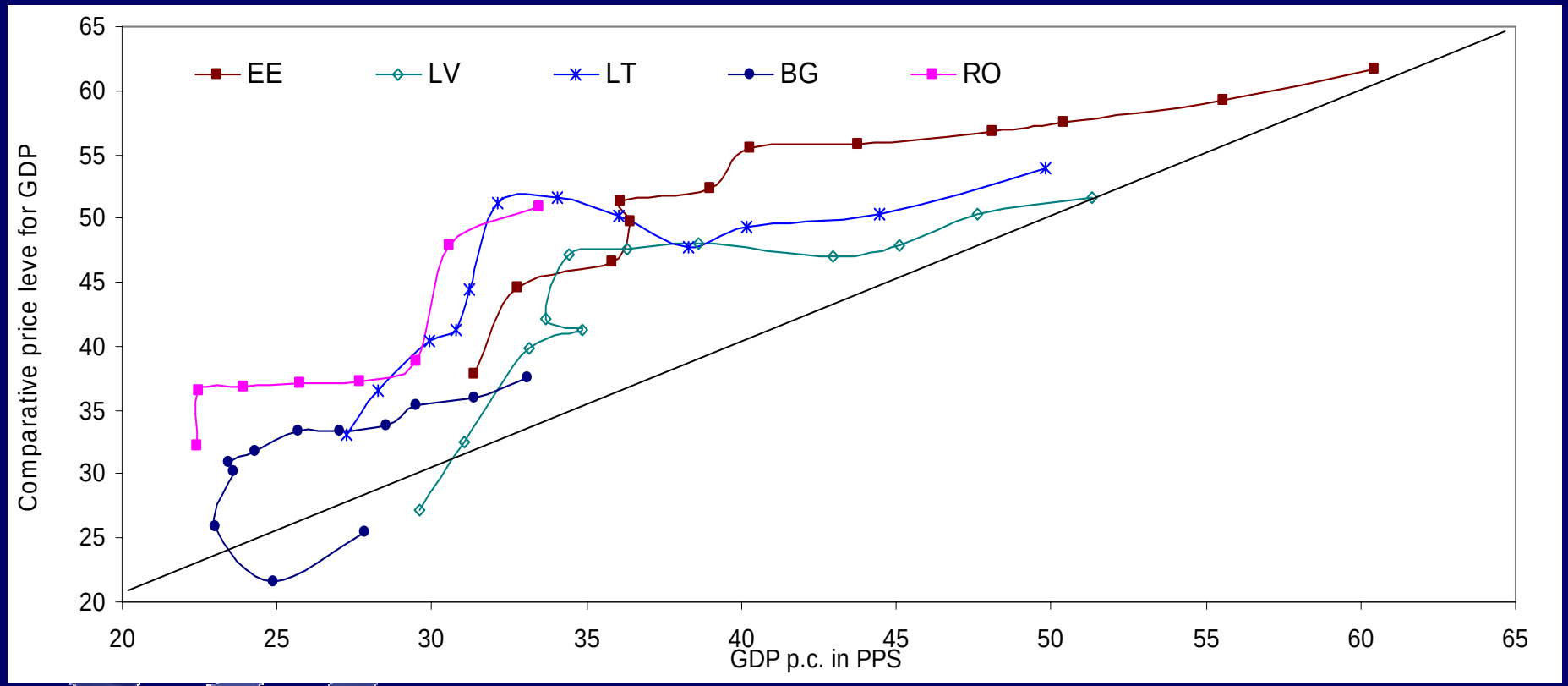
Note: Luxembourg is omitted from the analysis. Linear regression: *CPL = 0,1024 (0,054) + 0,8714·GDP (0,0627)*, $R^2 = 0,943$; F-test = 193.4; S.E. in parentheses. Source: EUROSTAT, Structural Indicators, National Accounts (September, 2007), own calculation.

2. Convergence (transition dynamics) – changes of CPL for GDP and GDP p.c. in PPS, CEE9, 1995–2006 (EU-15 = 100)



Source: Eurostat (2007), own calculations.

2. Convergence (transition dynamics) …



Source: Eurostat (2007), own calculations.

3. Path to the Eurozone

Euro will bring some advantages and disadvantages

Advantages (+)

- Solution to BP problems (*e.g.* the Baltic States, Bulgaria),
- Mitigation of exchange rate volatility (risk),
- …

Disadvantages (–)

- Fulfilment of Maastricht convergence criteria
  - ⇒ Competitiveness of corporate sector,
  - ⇒ Keeping right balance between real and nominal convergence,
  - ⇒ Public investment,
- …

3. Path to the Eurozone and nominal convergence

Nominal (price) convergence (*i.e.* change of CPL) can go through:

$$\chi_i = \Delta e \ + \pi_i + \omega,$$

where χ_i is comparative price level in country *i*, Δe is change of nominal exchange rate in country *i* (percentage change of domestic currency in relation to euro) and π_i is rate of inflation in country *i* (all changes are linked to the same period of time whose sign was not introduced for the sake of simplicity) and ω is error term resulting form mis-measurement.

The relative importance of channels is influenced by exchange rate arrangement:

1) fixed exchange rate (like currency board), the nominal convergence relies on price channel (χ_i is equal to π_i);
2) flexible exchange rate (both channels).

In case of inflation targeting is the main source of nominal convergence influenced by set inflation target. If it is the same as the ECB has, convergence is realised by appreciation of nominal exchange rate (χ_i is equal to Δe and π_i). After rearranging equation, it is possible to estimate the maximum real exchange rate appreciation for given country.

3. Path to the Eurozone and nominal convergence

How important are these channels for the NMS:

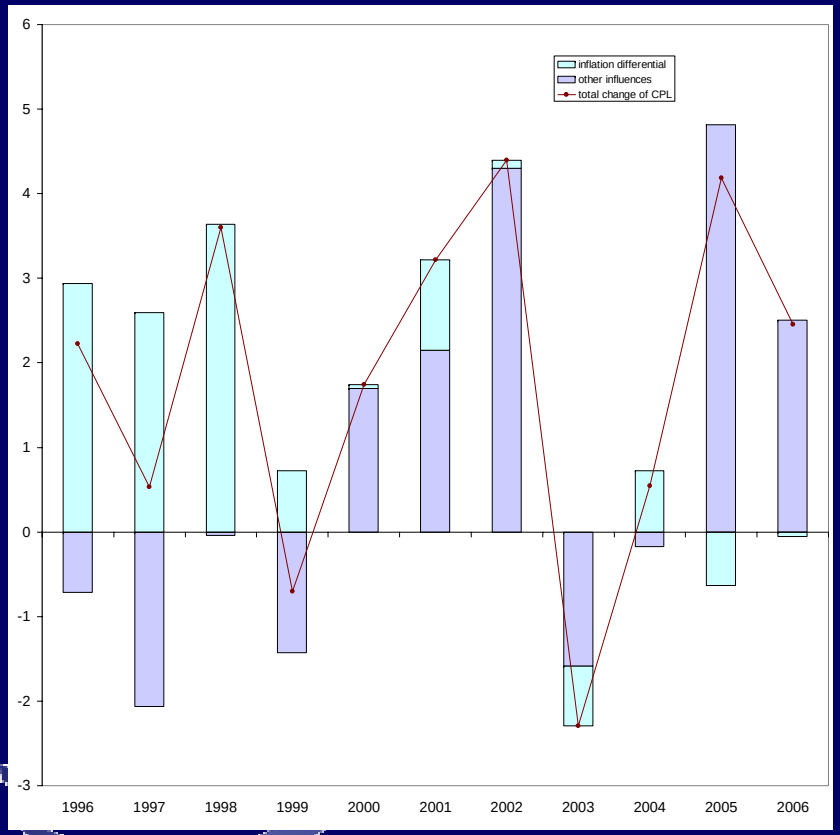
	HICP (annual percentage change)				Nominal exchange rate (annual per. chg)			
	1997-1999	2000-2002	2003-2005	2006	1997-1999	2000-2002	2003-2005	2006
Czech Rep.	6.4	3.3	1.4	2.1	2.31	-5.79	-1.03	-4.84
Hungary	14.2	8.1	5.0	4.0	9.32	-1.25	0.73	6.53
Poland	11.3	5.7	2.2	1.3	7.31	-2.84	1.94	-3.16
Slovenia	7.4	8.3	4.0	2.5	4.23	5.14	1.97	0.01
Slovakia	7.7	7.6	6.2	4.3	4.42	-1.07	-3.30	-3.54
Estonia	7.0	4.4	2.8	4.4	0.82	0.00	0.00	0.00
Latvia	4.8	2.4	5.3	6.6	-3.60	-2.24	6.25	0.00
Lithuania	5.7	1.0	0.9	3.8	-5.58	-6.61	-0.06	0.00
Cyprus	2.2	3.2	2.6	2.2	-0.74	-0.20	0.09	-0.18
Malta	3.3	2.7	2.4	2.6	-2.37	-1.30	1.70	-0.14
Bulgaria	6.7	4.7	6.7	7.4	0.90	-0.11	0.11	-2.6
Romania	41.9	16.5	7.8	6.6	36.2	24.2	5.78	0.0

Note: HICP for EU-27 are 1.4 %; 2.1 %; 2.1 % and 2.2 %; for EU-12 1.3 %; 2.2 %; 2.1 % and 2.2 %. Exchange rate: positive value = depreciation. Source: ECFIN (2006), p. 128-129, ECB (2007), p. S68, EUROSTAT (2007), own calculations.

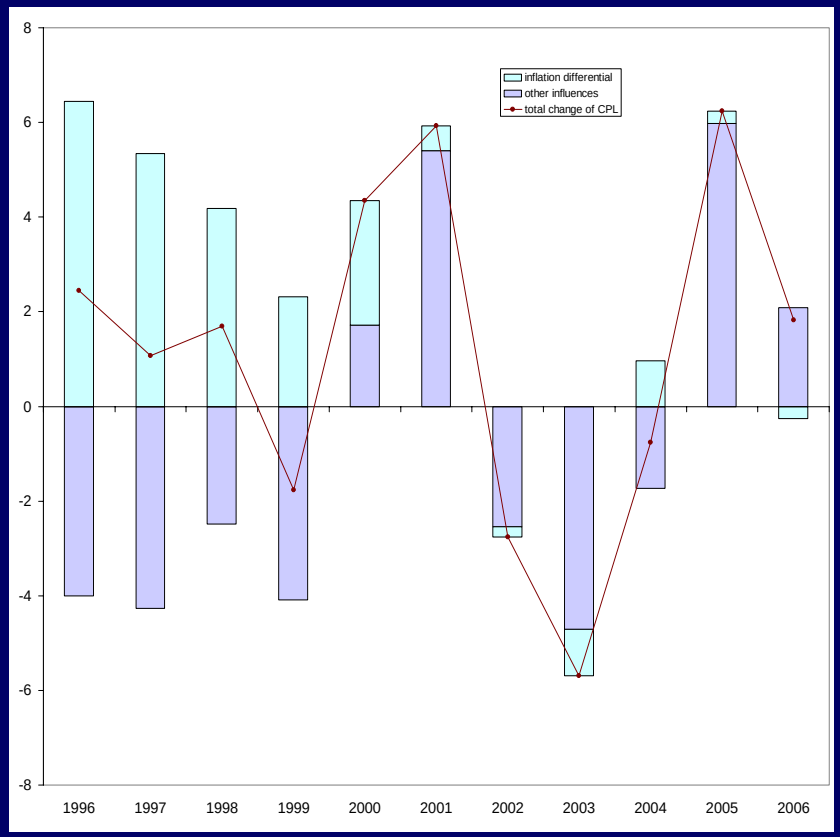
3. Path to the Eurozone and nominal convergence

How important are these channels …

the Czech Republic (chg. in p.p.)



and Poland (chg. in p.p.)



Source: EUROSTAT (2007), own calculations.

3. Path to the Eurozone and nominal convergence

Maastricht inflation criterion and its pitfalls (e.g. see Brook, 2005; Dobrinsky, 2006; Bulíř, Hurník, 2006):

- Price stability (its definition)
- Moving target (forecasts)
- „Boxer effect“ (see Szapáry, 2000)

Balassa-Samuleson effect – results in the new EU Member States

- ⇒ statistical mis-measurement (the existence is difficult to prove, vs. influence of flows of FDI investment in recent years);
- ⇒ tradable vs. non-tradable goods (theoretical and empirical non-tradability);
- ⇒ lack of reliable statistical evidence on productivity growth in services (see Égert, 2004, 2006);
- ⇒ unexplained high proportion of observed real exchange rate appreciation (e.g. in the Czech Republic) – search for other explanations.

4. Main challenges – existence of inflation differentials in the EU

The existence of inflation differentials in the Eurozone reflects not only the current state of economic cycle (boom or slowdown), but also the process of catching-up.

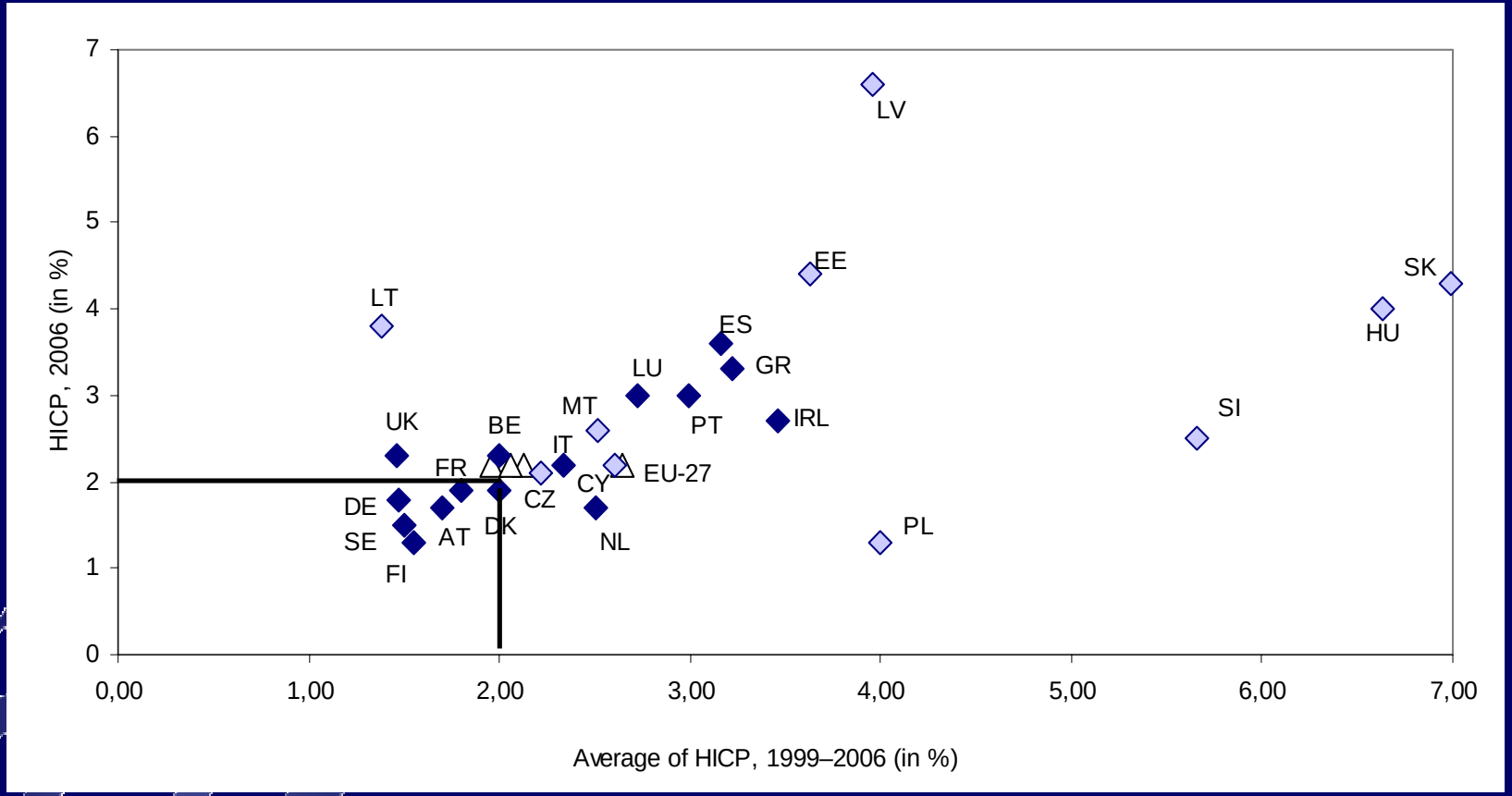
As a result, one can observe:

- Bias in average HICP for the Eurozone; (given the weight of country in HICP average);
- Difference of real IR between countries (resulting in misallocation of investment, asset booms, sub-optimality for firms by decision-making etc.).

The key questions:

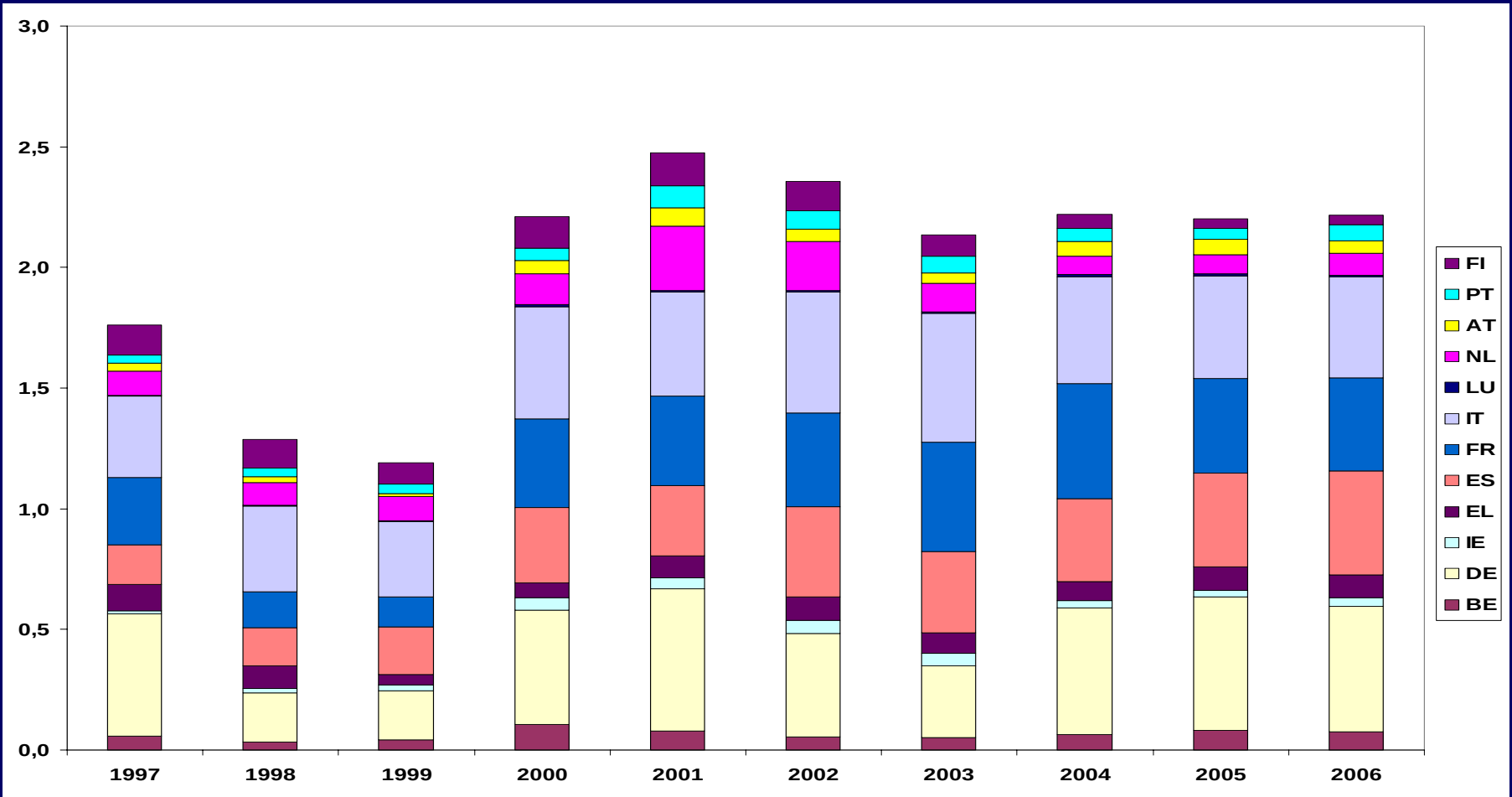
1. It is good or bad for the Eurozone as a whole and
2. what the "one-fits-all" monetary policy should do.

4. Main challenges – existence of inflation differentials in the EU



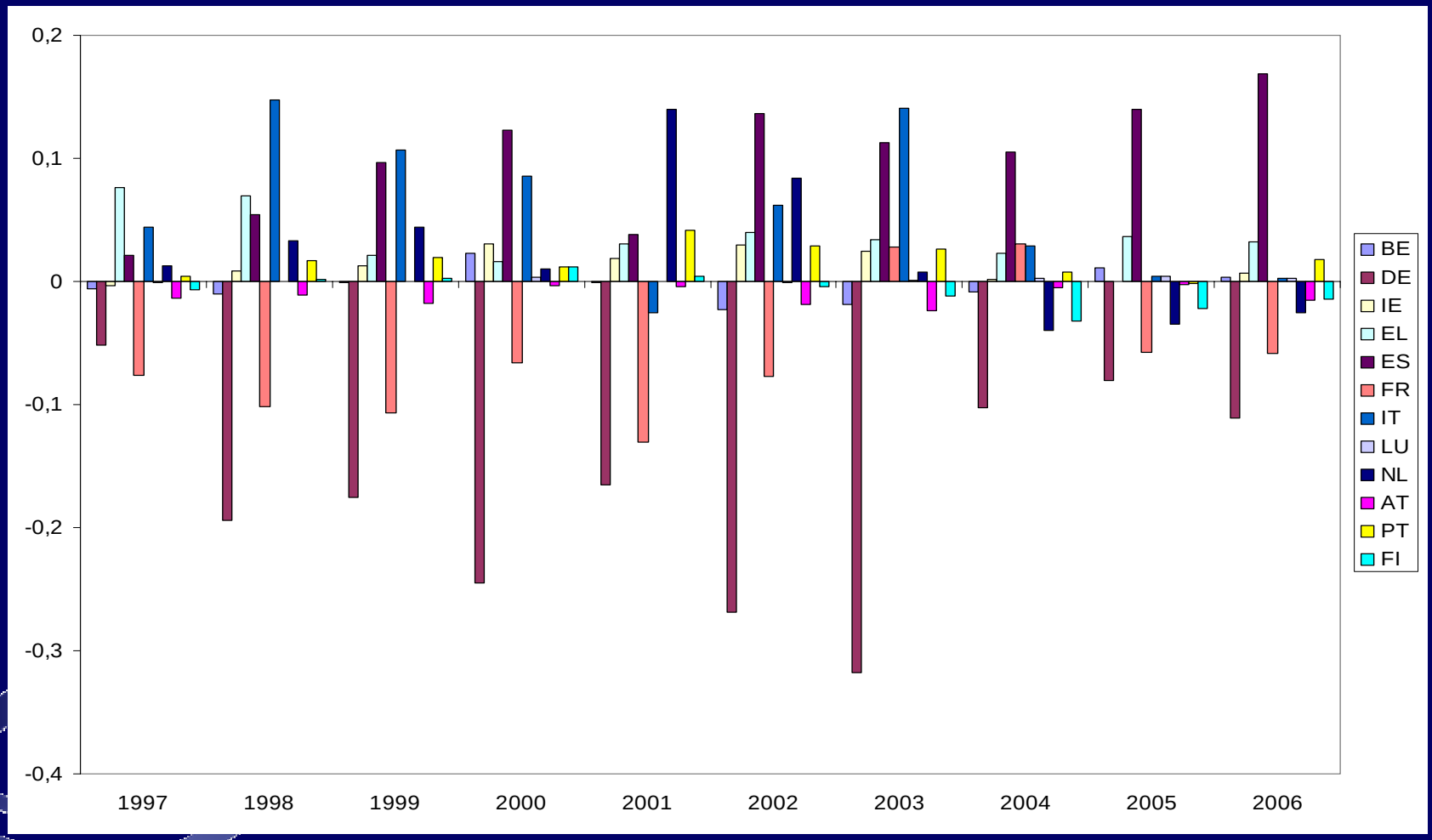
Note: Rumania: 23.0 %; year 2006: 6.6 %, Bulgaria: 6.0%; 7.4 %; triangles – EU-25: 2.1%; 2.2%; EU-15: 2.0 %; 2.2 %; EU-12: 2.1%; 2.2%. Within a narrow range (HICP: 0–2%) only 6 countries (AT, DE, DK, FI, FR, SE), within a broader range (HICP: 0–3 %) 14 countries. Source: EUROSTAT (2007), own calculation.

4. Main challenges – contributions of EMU countries to average EMU inflation (p.p.)



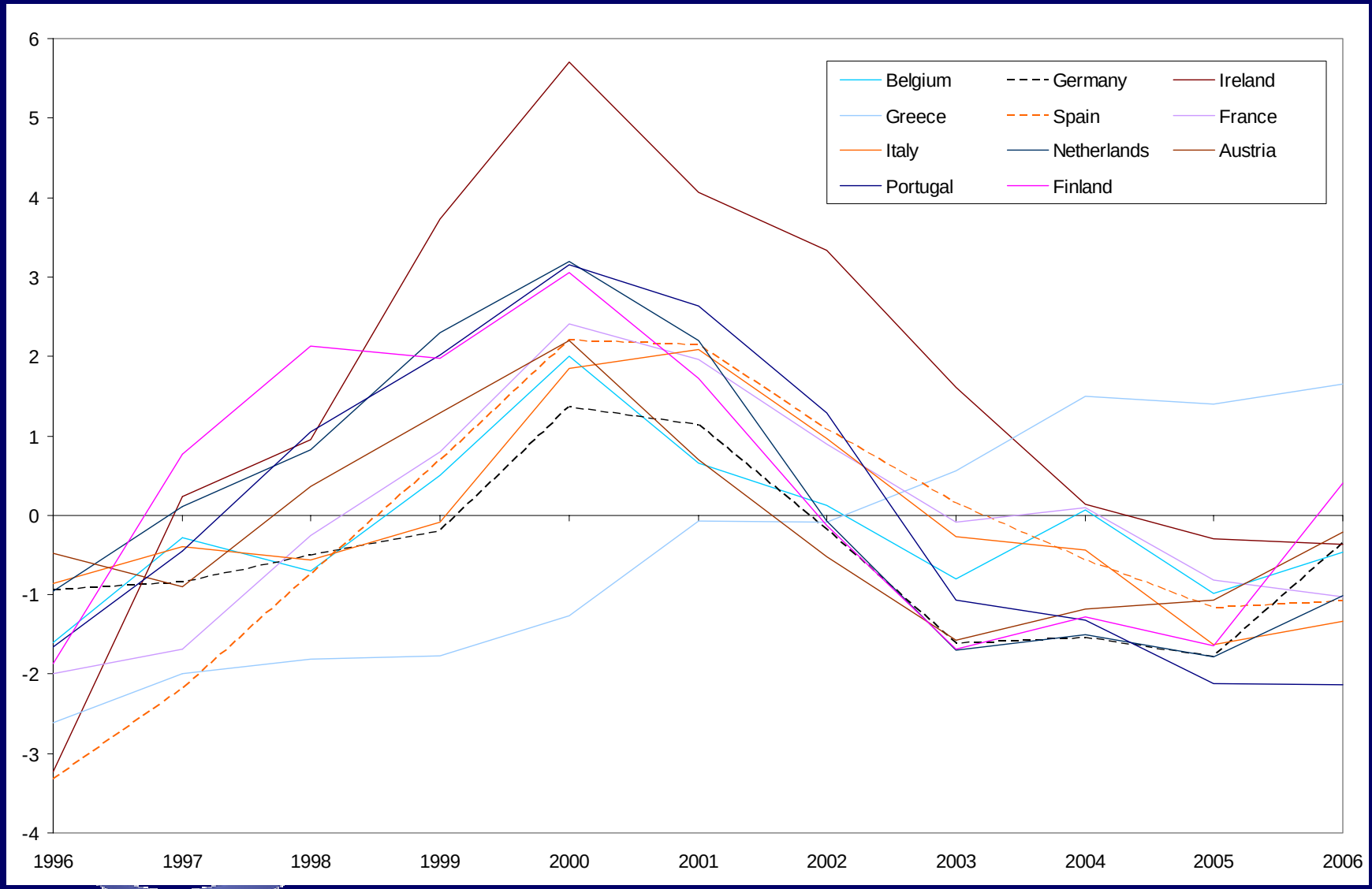
Note: contribution of EMU countries in p.p. to the aggregate inflation in EMU.
Source: EUROSTAT (2007), own calculations.

4. Main challenges – contributions of EMU …



Note: weighted differentials of inflation in EMU countries and their direction of influence of aggregate inflation in EMU (in p.p.). The country weight of a Member State is its share of Household Final Monetary Consumption Expenditure (as measured under ESA 1995). **Source:** EUROSTAT (2007), own calculations.

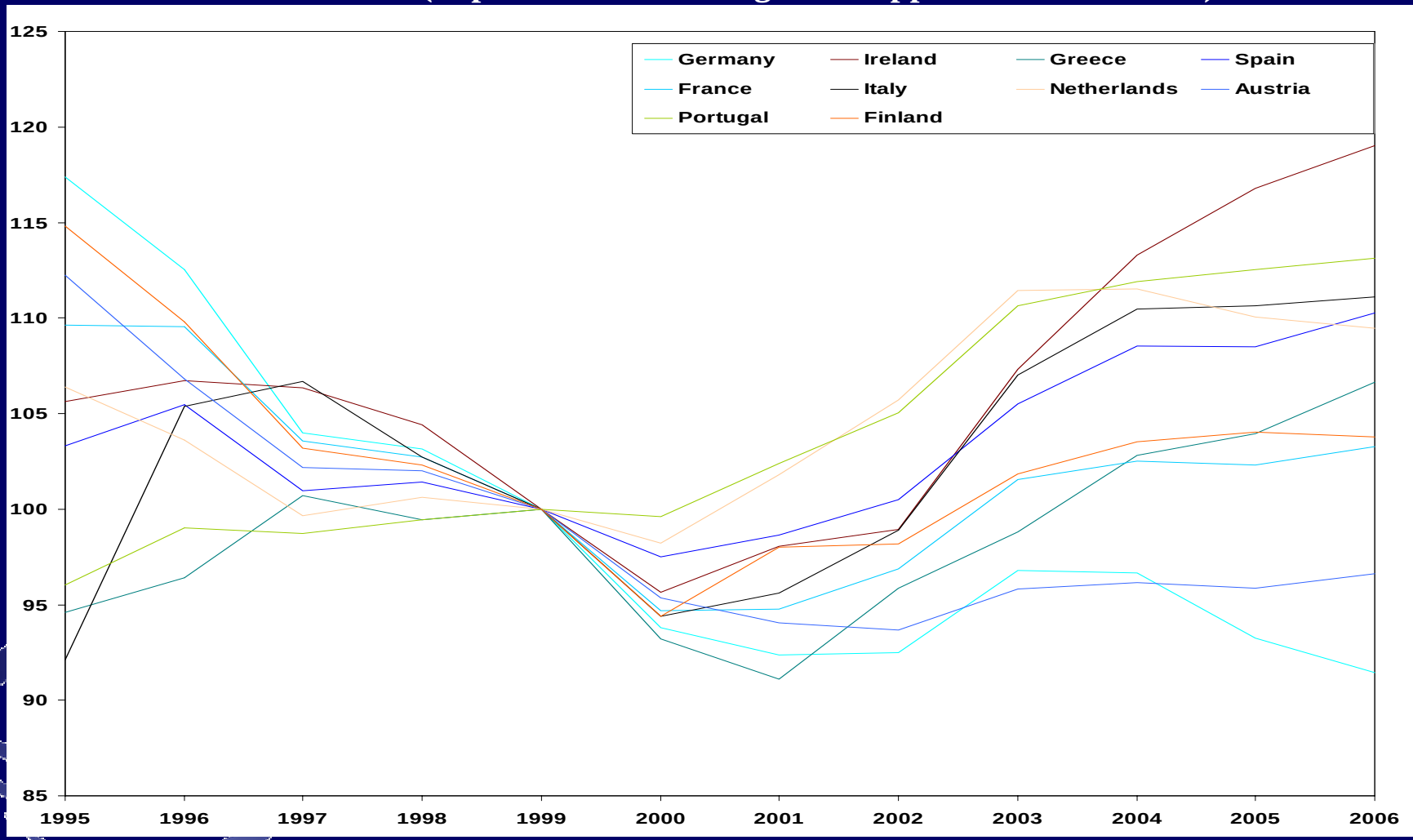
4. Main challenges – GDP output gap for EMU countries (percentage of potential GDP)



Note: output gap = $(Y - Y^*)/Y^*$. Actual GDP (Y) in constant prices 2000. **Source:** DG ECFIN, AMECO database (2007).

4. Main challenges – REER in EMU, 1995–2006 (1999 = 100)

Germany and Austria have gained some competitiveness while Ireland, Portugal, Italy, Spain, the Netherlands and Greece have lost (importance of exchange rate, appreciation of REER).



Note: NEER deflated by ULC (total economy) of EU countries and main trading partners (EU25+9 industrial countries). A rise in the index means a loss of competitiveness. Data for Belgium and Luxembourg not available. Source: EUROSTAT (2007).

5. Conclusions

The real convergence has been successful in the new EU Member States.

However, the nominal convergence poses some risks for some countries in the future, in particular during the EMR II period:

- Nominal and real convergence *versus* Maastricht convergence criteria;
- Harrod-Balassa-Samuelson effect and its influence on inflation and exchange rate in the new EU Member States;
- Influence of tradable and non-tradable goods;
- Changes of administrative and regulated prices;
- Development of prices of public services;
- Speed of nominal convergence and its impacts after abolishing national currency resulting in loosing competitiveness (*e.g.* appreciation of REER).

Future directions for empirical analysis of the influence of monetary policy in the Eurozone:

1) How one can estimate the influence of inflation differentials on individual country in EMU

2) Where is a threshold for REER appreciation beyond that REER may harm domestic industry.

Thank you for your attention

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