



*Department of Economics
University of Munich*

Comenius University Bratislava
Faculty of Mathematics and Physics
Department of Applied Mathematics



Die Euro-Übernahme in den neuen Mitgliedsländern aus der Sicht der OCA-Theorie

Ringvorlesung der Universität Wien

19. Mai 2008

Jarko Fidrmuc

Ludwig-Maximilians-Universität München,
CESifo, und Comenius University Bratislava

<http://www.vwl.uni-muenchen.de/fidrmuc/index.html>

Jarko.Fidrmuc@lrz.uni-muenchen.de

Motivation

- After a relatively smooth enlargement of the European Union in only two waves (2004 and 2007), we expected a similarly fast progress with regard to the euro introduction in CEECs.
- Now we can see that the process will be more difficult and slower than expected.
- Furthermore, the core countries of the NMS (Czech Republic, Hungary, and Poland) are currently missing in the euro area enlargement.
- Can we explain this feature of the European integration process?
- The Maastricht criteria and the reform of the ECB will be not analyzed in this lecture.

Literatur

- De Grauwe, P. (2005). *Economics of Monetary Union*. 6th Edition, Oxford University Press.
- Fidrmuc, J. and I. Korhonen (2006) ‘Meta-analysis of the business cycle correlation between the euro area and the CEECs’, *Journal of Comparative Economics*, 34 (3), 518-37.
- Artis, M., Fidrmuc, J. and J. Scharler (2008) ‘The Transmission of Business Cycles: Implications for EMU Enlargement’, *Economics of Transition*, forthcoming.
- Fidrmuc, J. (2007) ‘Osterweiterung der Eurozone aus der Sicht der Theorie der optimalen Währungsräume: Was nun? Verspäteter Schnellzug in die WWU?’, ifo Schnelldienst Nr. 22, 9-11.
- Fidrmuc, J. and van Aarle, B. (2008) ‘Enlarging the Euro Area: Why so Delicate?’, *Economic Systems* 32 (1), Special Issue: Enlarging the Euro Area.

EMU Enlargement and the OCA Theory

- I. The Theory of Optimum Currency Area.**
- II. Demand and Supply Shocks.**
- III. Static OCA Theory and the EMU Enlargement.**
- IV. Dynamic Aspects and the Endogeneity of the
OCA Criteria.**
- V. Conclusions**

Sources of Benefits

The potential benefits of a monetary union are related to:

- I. Reduction of the transactions costs (0.5% of GDP) and exchange rate risk;
- II. Price transparency;
- III. Less uncertainty especially with regard to interest rates;
- IV. Easier access to developed capital markets.
- V. Trade growth especially within the monetary union (possibly 40- 60% in the long run)?
- VI. Benefits of an international currency (seigniorage).

Theory of OCA

- Mundell (1961) defines an optimum currency area as a region with similar business cycles (similar development of aggregate demand). He received the Nobel Prize in Economics in 1999.
- The economic policy may need adjustment mechanisms if business cycles are different (exchange rate vis-à-vis labor mobility).
- McKinnon (1963) and Kenen (1969) and other discuss additional OCA criteria: fiscal policy, openness, diversification, labor market flexibility, etc.
- Furthermore, countries may import credibility of monetary policy from their target countries.

OCA Criteria

- On the one hand, there are potential welfare gains resulting from the introduction of euro.
- On the other hand, there are possible costs due to the loss of own monetary policy.
- Countries may use different adjustment channels to react to adverse shocks.
- Exchange rate may be inefficient or inappropriate policy tool.
- These tradeoffs are referred to as the optimum currency area criteria.

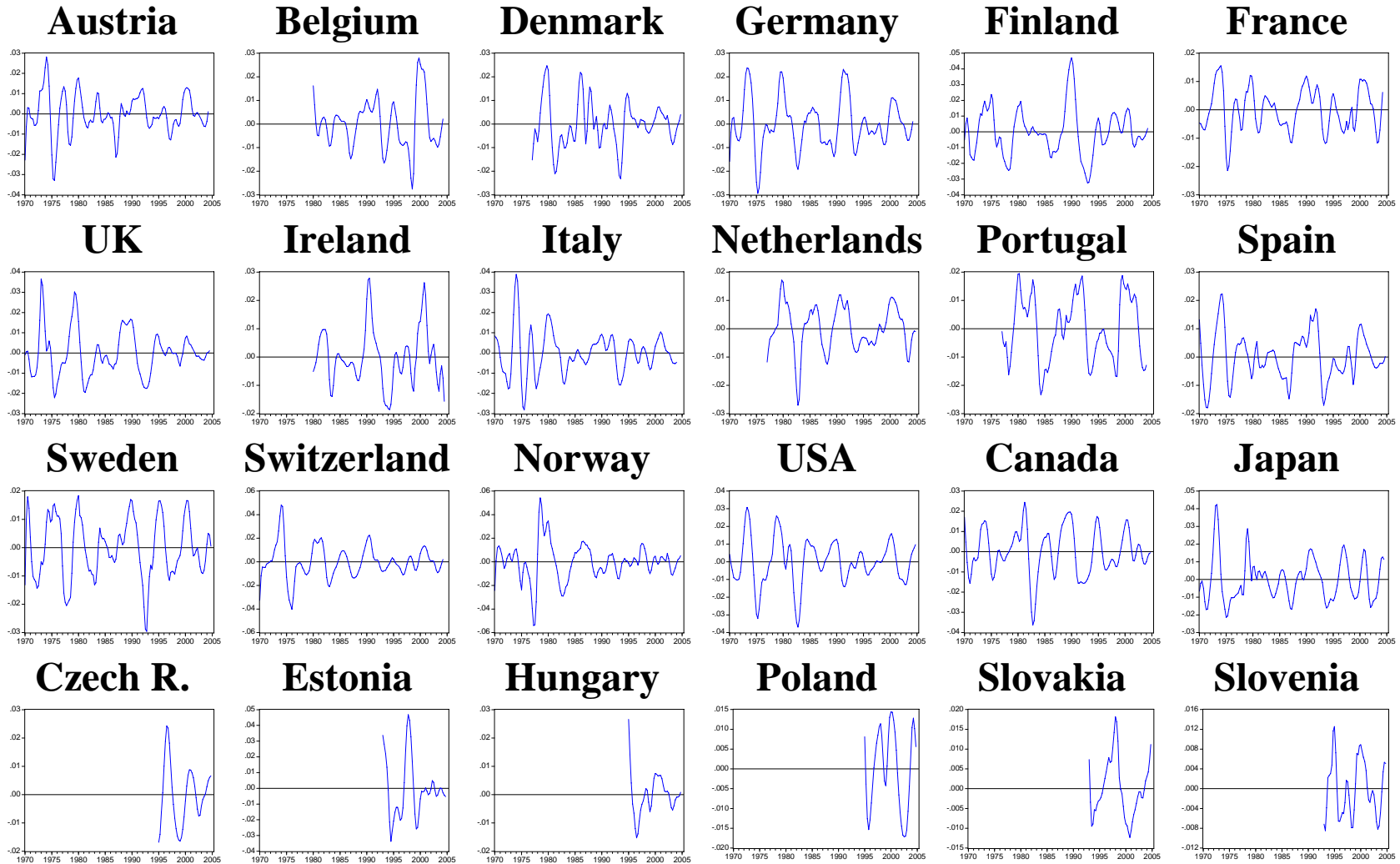
Alternative Adjustment Channels

- Diversified economies are less likely to actively use the exchange rate as a policy instrument.
- Labor migration may counteract the asymmetric shocks between the regions/countries.
- Flexible labor markets support the adjustment to shocks.
- Fiscal transfers may improve the situation in depressed regions/countries or industries.
- Other criteria are generally considered not to be fulfilled by the CEECs and EU.

Potential Costs of an OCA

- There are possible costs due to the loss of monetary independence.
- The loss of the nominal exchange rate instrument is important if business cycles are not sufficiently synchronized.
- The ECB policy is more difficult for countries with different business cycles, which cause a necessity of ECB reform.
- However, exchange rate may act as a source of monetary shocks, and not an absorber of demand and supply shocks.
- High correlation of business cycles indicates low costs of common monetary policy.

Business Cycles in Selected Countries



Source: Artis et al. (2008).

EMU Enlargement and the OCA Theory

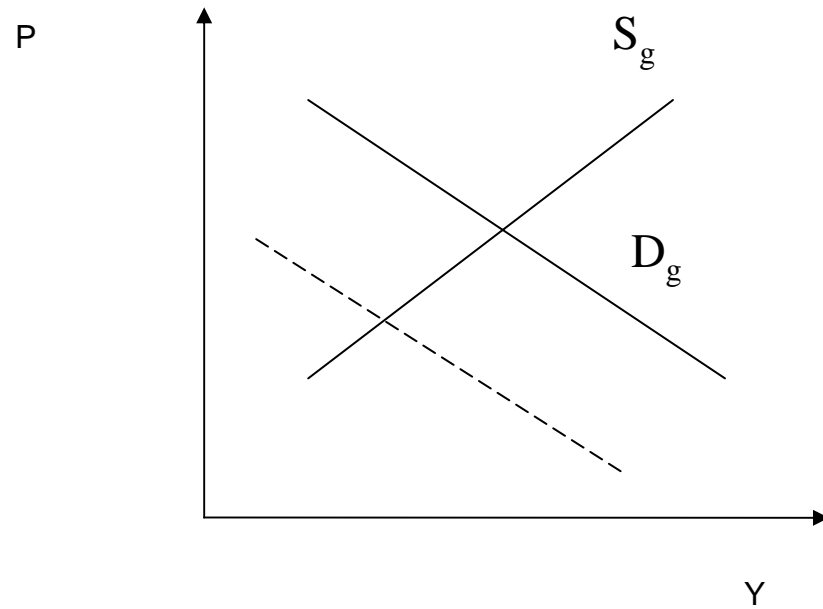
- I. The Theory of Optimum Currency Area.**
- II. Demand and Supply Shocks.**
- III. Static OCA Theory and the EMU Enlargement.**
- IV. Dynamic Aspects and the Endogeneity of the
OCA Criteria.**
- V. Conclusions**

OCA: The Story

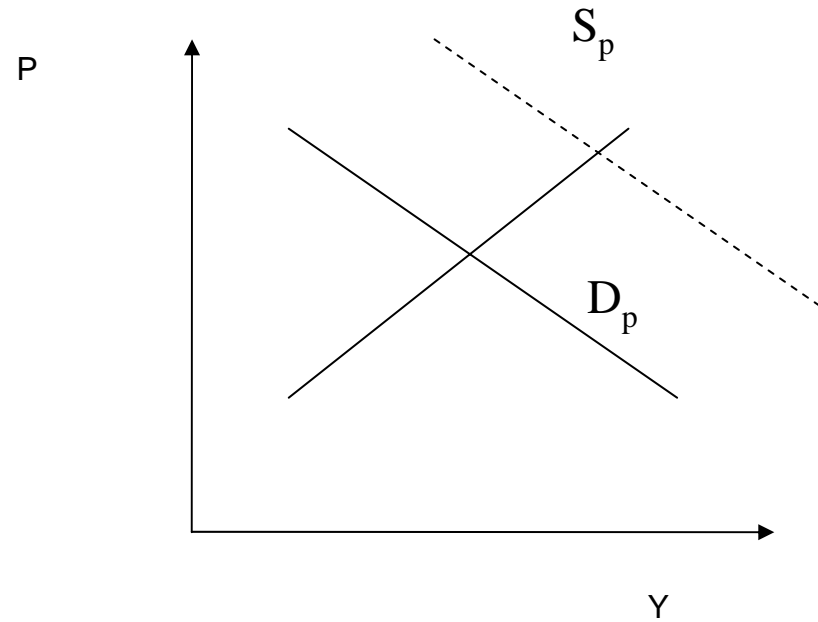
- Two countries: Germany and Poland.
 - Consumers shift their preferences away from German to Polish products.
- ⇒ There is a positive demand shock in Poland and negative demand shock in Germany.
- The supply in both countries is unchanged in the short run.
 - **Adjustment problem:**
 - a) output decline and unemployment in Germany;
 - b) boom and inflation hikes in Poland.

Asymmetric Aggregate Demand Shocks

Germany



Poland



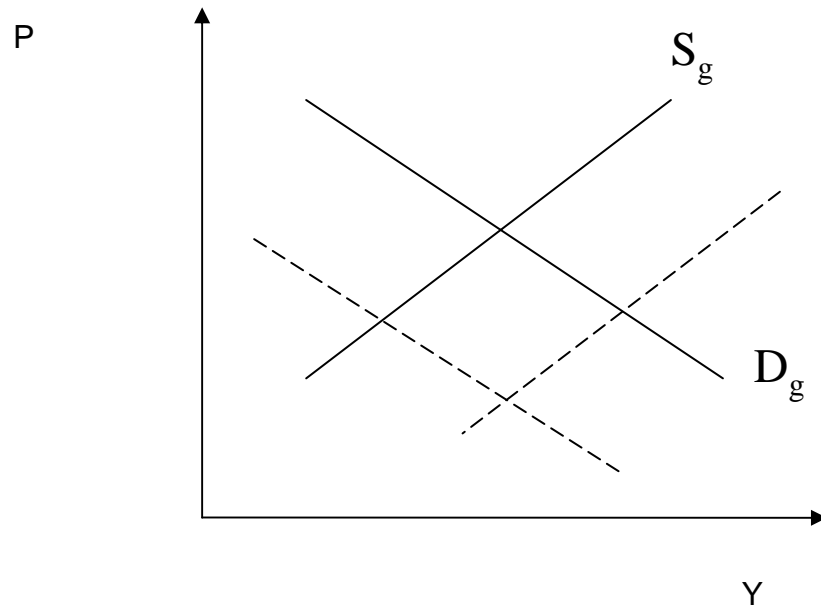
Possible Automatic Adjustment Processes

There are possibly two mechanisms which may automatically bring back the equilibrium in both countries:

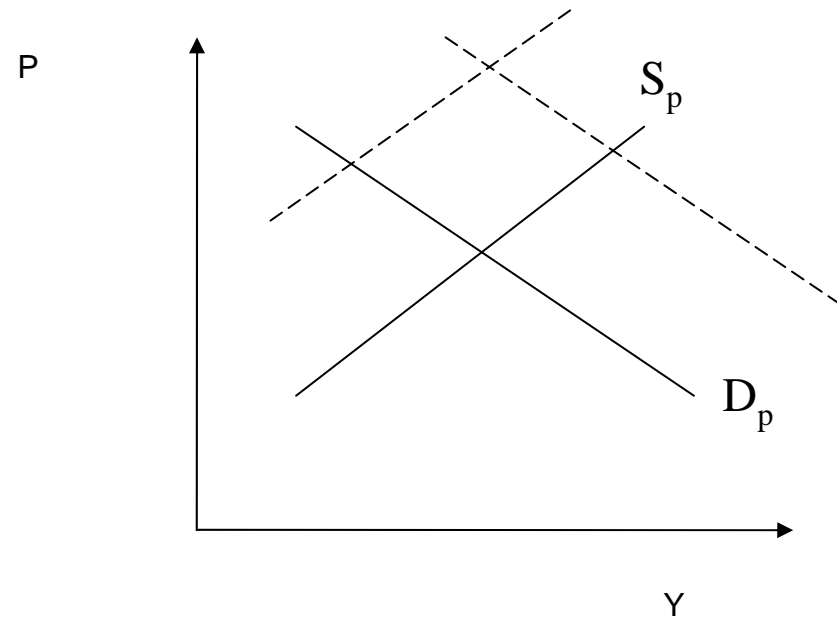
- **Wage flexibility:** Unemployment results in lower wages in Germany and the labor shortage increases wages in Poland.
 - => Wage changes (second order effects) shifts the supply curve downwards in Germany and upwards in Poland.
 - => The long-run level of output is not influenced by the demand shocks, but the price level increases.
- **Labor Mobility:** Excluding other factors, labor could migrate from depressed (Germany) to booming (Poland) regions.
 - => Labor flows shift the supply curve left in Germany and to the right in Poland, which can cause political tensions.

Automatic Adjustments (Wage Flexibility)

Germany



Poland

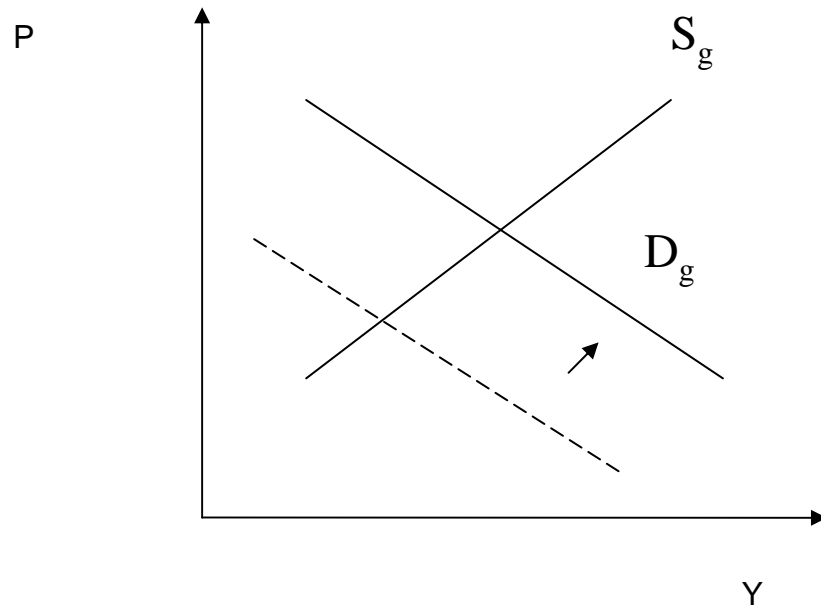


The Role of Exchange Rate Policy

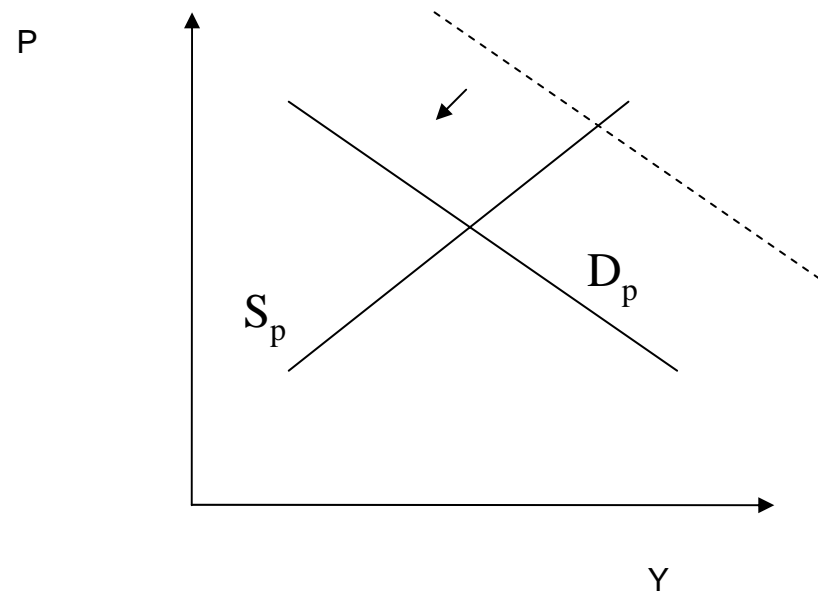
- The automatic adjustment channels may last long and be extremely costly (deflation, unemployment) in the welfare terms (politically undesired inflation or migration).
- The empirical analysis indicate a low degree of labor market flexibility or migration response to income shocks.
- The costs of adjustment will be likely concentrated on one country (via the inflation channel).
- By contrast, the initial macroeconomic equilibrium can be easily restored by a depreciation of the Polish Zloty, which shifts the demand curve upwards in Germany and downwards in Poland.

Effects of a Depreciation in Germany (Appreciation in Poland) under an Asymmetric Demand Shock

Germany



Poland

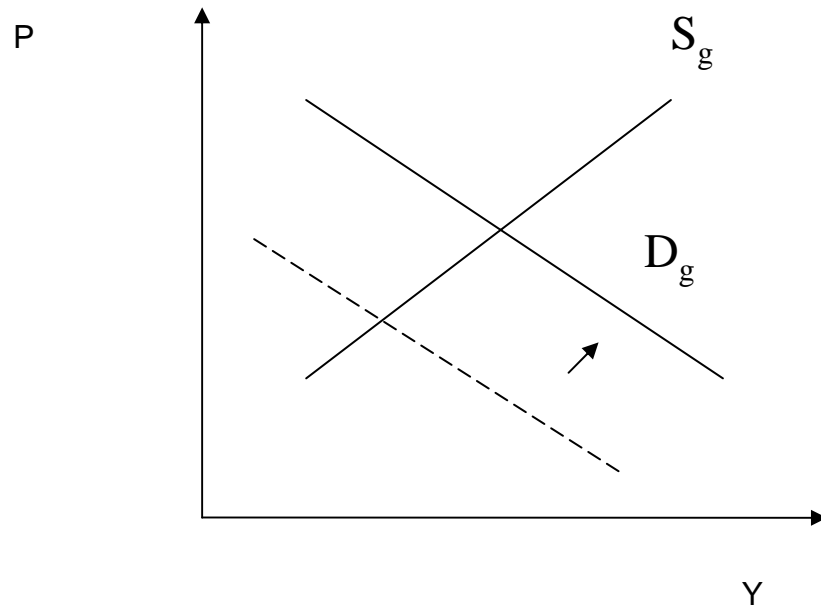


Monetary Policy under Symmetric Demand Shocks

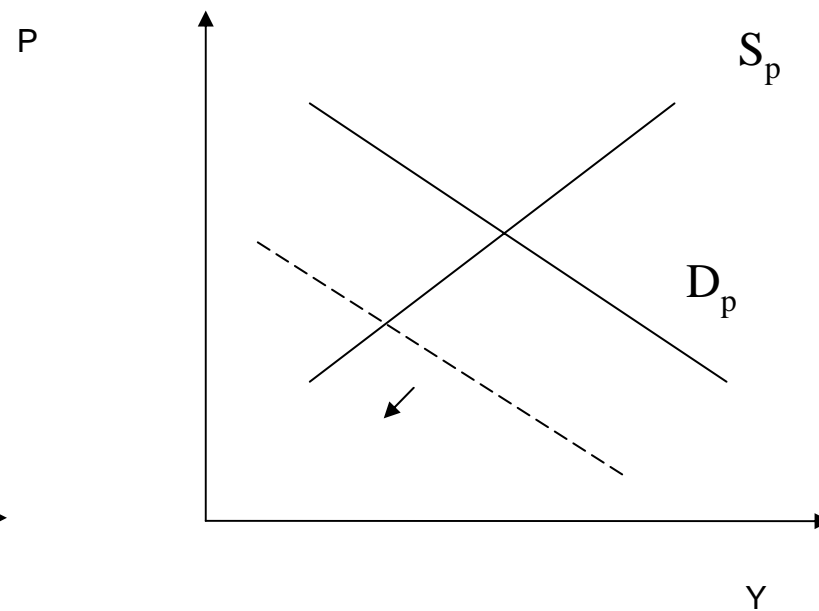
- If both countries face a symmetric (negative) demand shock, the monetary policy of a monetary union can react by the reduction of the interest rates.
- A devaluation is attractive only in the short run, because exchange rate change in one country worsens the economic problems in its trading partners.
- This is likely to cause a spiral of devaluations and counter-devaluations.
- As a result, the countries gain from the coordination of monetary policies.

Effects of a Depreciation in Germany under a Symmetric Demand Shocks

Germany



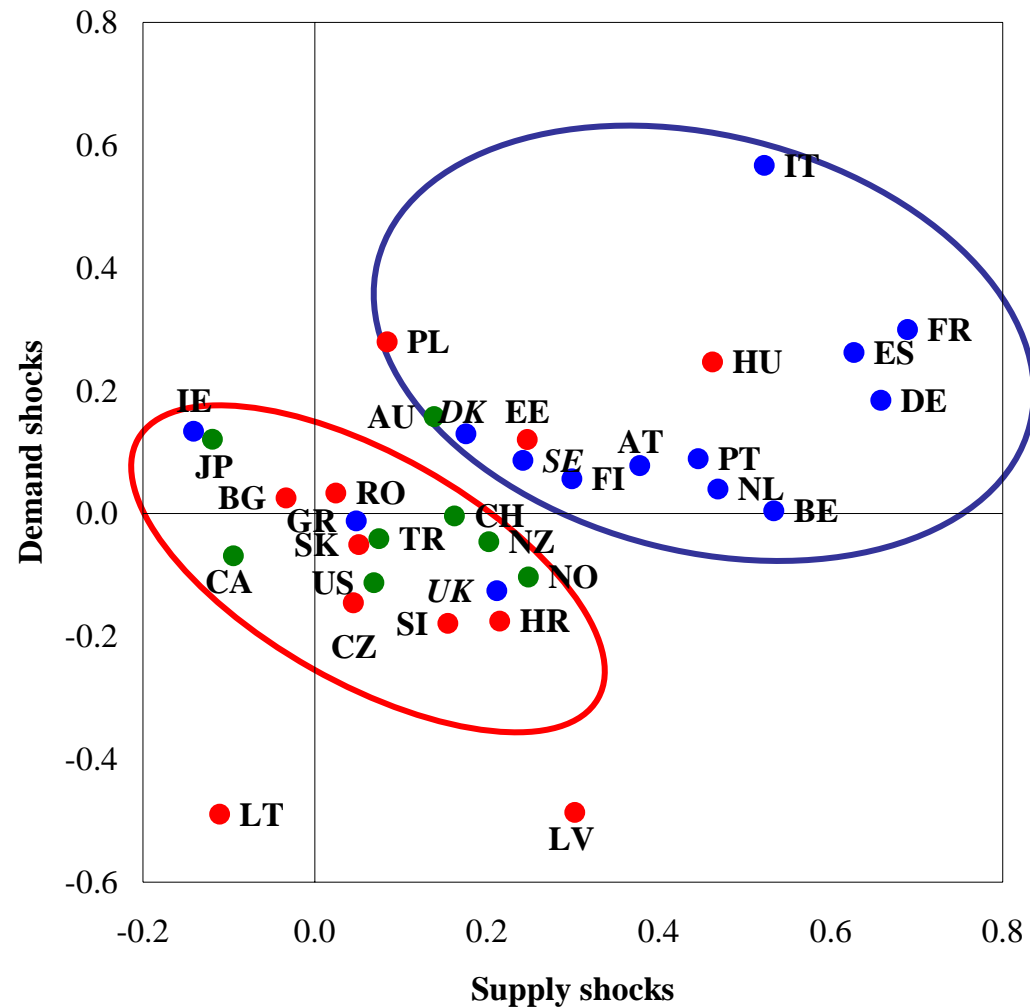
Poland



Supply Shocks vis-à-vis Demand Shocks

- Supply shocks have permanent effect on the potential output.
- Furthermore, supply shocks lower price level of the country (exchange rate appreciates permanently).
- There is less need for a monetary authority to react to supply shocks.
- There are no automatic adjustment channels to supply shocks (except to technology transfers and spillovers).
- Still, a monetary unions has to be characterized by similar demand and supply shocks.

Supply and Demand Shocks



Note: This figure displays the correlation of supply (x-axis) and demand shocks (y-axis) in the selected countries and in the euro area.

Source: Fidrmuc, Jarko and Iikka Korhonen (2003) 'Similarity of Supply and Demand Shocks between the Euro Area and the CEECs.' *Economic Systems* 27(3), 313-334.

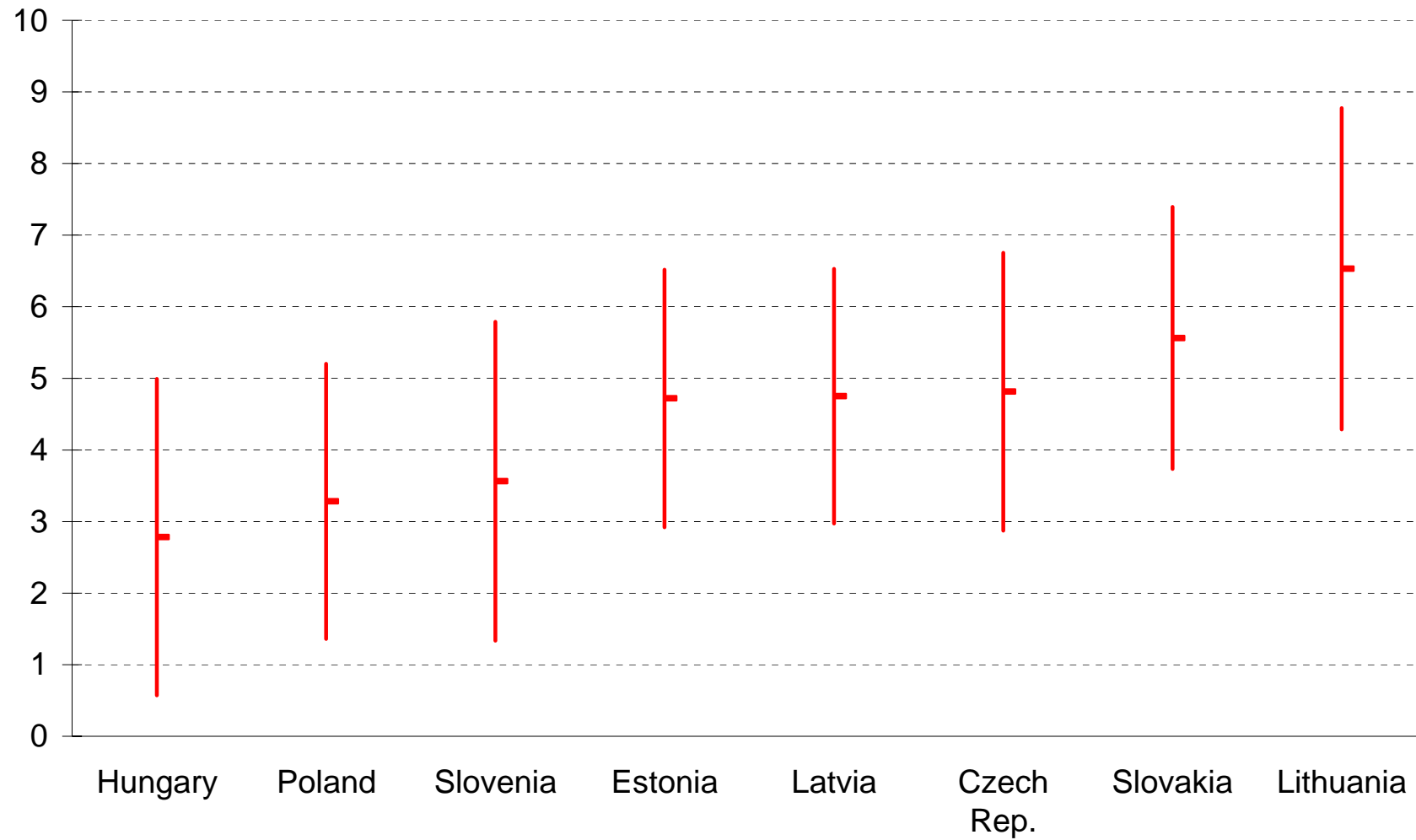
EMU Enlargement and the OCA Theory

- I. The Theory of Optimum Currency Area.
- II. Demand and Supply Shocks.
- III. Static OCA Theory and the EMU Enlargement.**
- IV. Dynamic Aspects and the Endogeneity of the
OCA Criteria.
- V. Conclusions

Do we Care about OCA Theory?

- The previous findings are generally confirmed in the literature.
- By contrast, the integration steps consider different criteria.
- Especially Hungary, Poland, and the Czech Republic fail to fulfill the Maastricht fiscal criteria, which may reflect less interest of these countries in euro area membership.
- Furthermore, high inflation is observed especially in the Baltic States.
- Nevertheless, it seems that the revised plans for the euro adoption are more compatible with the OCA results than the early statements.

Average Rankings and their St. Deviation



Source: Fidrmuc and Iikka Korhonen (2006).

OCA-Ranking and Euro Introduction

	OCA	Plans for the Euro Adoption	
	Ranking ^a	initial ^b	current
Hungary	1	2007	2012
Slovenia	2	2007	2007
Poland	3	2007	2011
Estonia	4	2007	2010
Czech Republic	5	2010	2015 or later
Latvia	6	2008	2011
Slovakia	7	2009	2009
Lithuania	8	2007	2011
Correlation		-0.29	0.01
Spearman rank correlation		-0.46	0.05
Kendall's Tau- <i>b</i>		-0.36	0.04

a – Fidrmuc and Korhonen (2006), *b* – approximately in 2004.

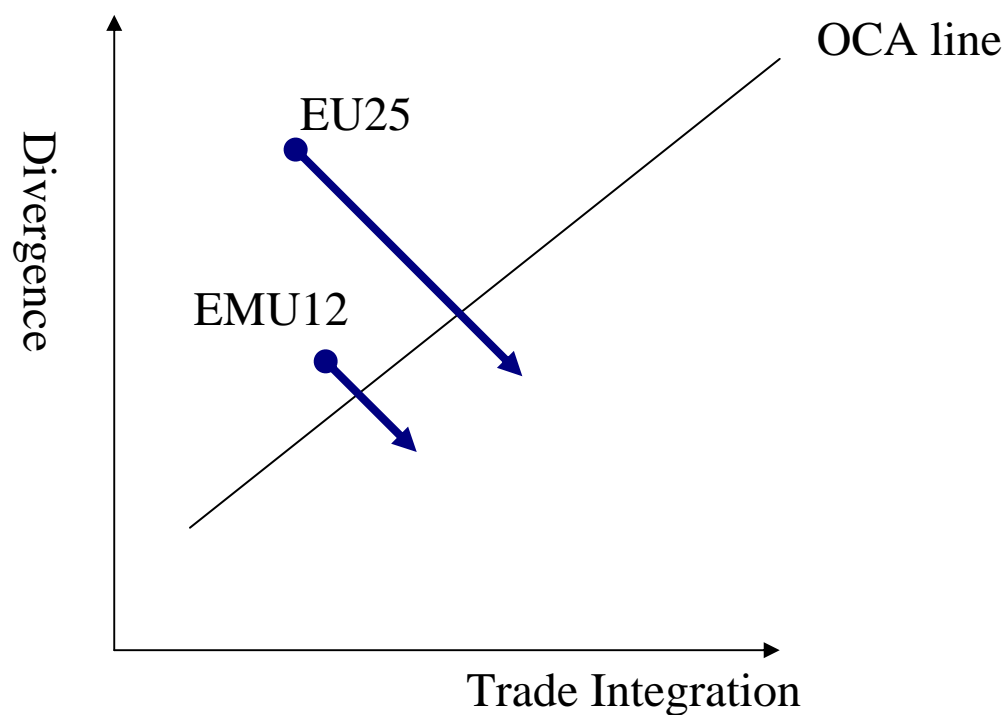
EMU Enlargement and the OCA Theory

- I. The Theory of Optimum Currency Area.
- II. Demand and Supply Shocks.
- III. Static OCA Theory and the EMU Enlargement.
- IV. Dynamic Aspects and the Endogeneity of the
OCA Criteria.**
- V. Conclusions**

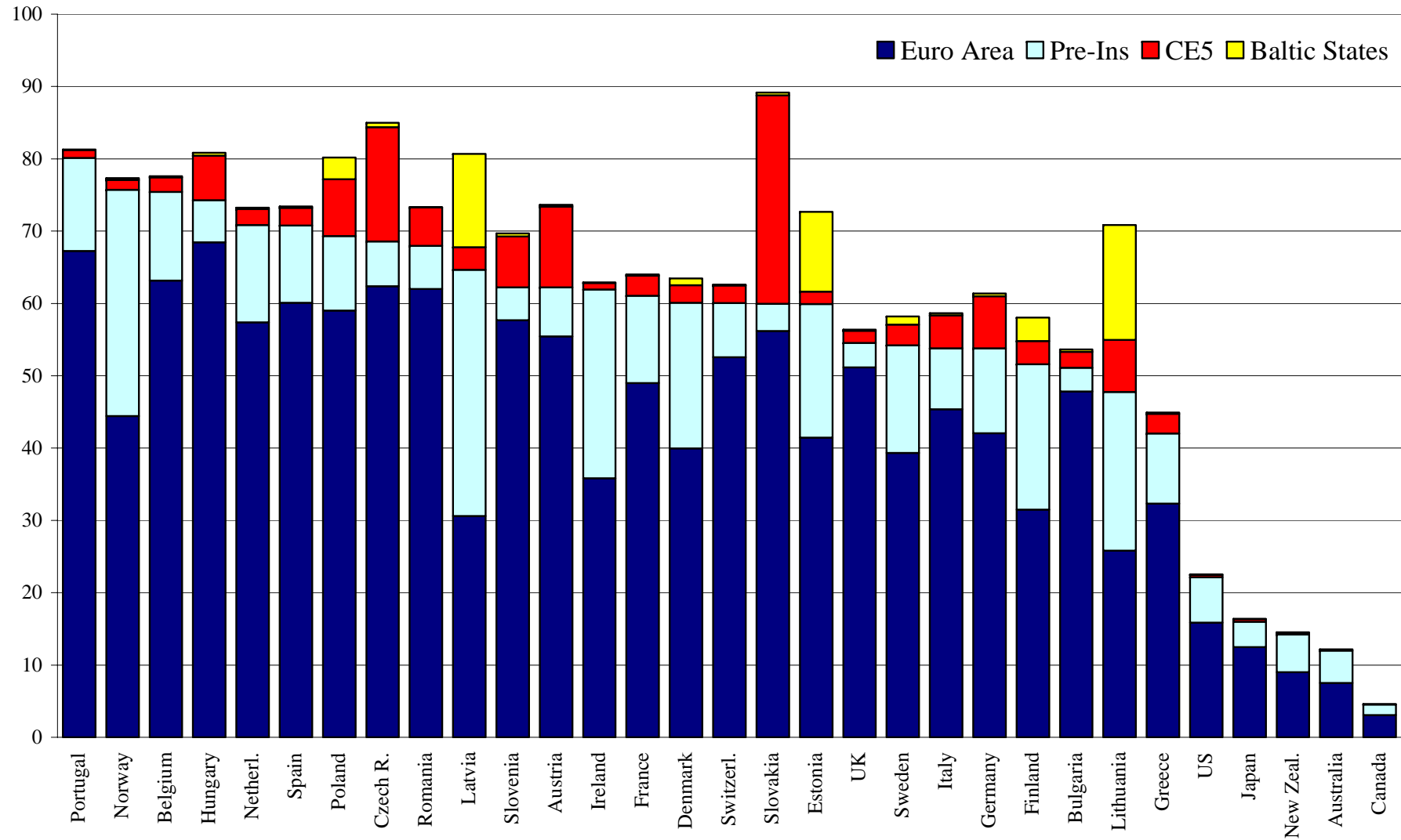
OCA-Endogeneity

- Frankel and Rose (1997, 1998) show the possibility that the OCA criteria may be endogenous.
- Trade integration, FDI flows and restructuring of EU's trade with the CEECs (intraindustry trade) is already relatively progressed;
- The synchronization of business cycles is likely to increase with EU accession as a result of increased trade intensity and structural improvements.
- Different and inflexible labor markets and country-specific fiscal policies may cause different transmission mechanisms of more or less symmetric shocks.

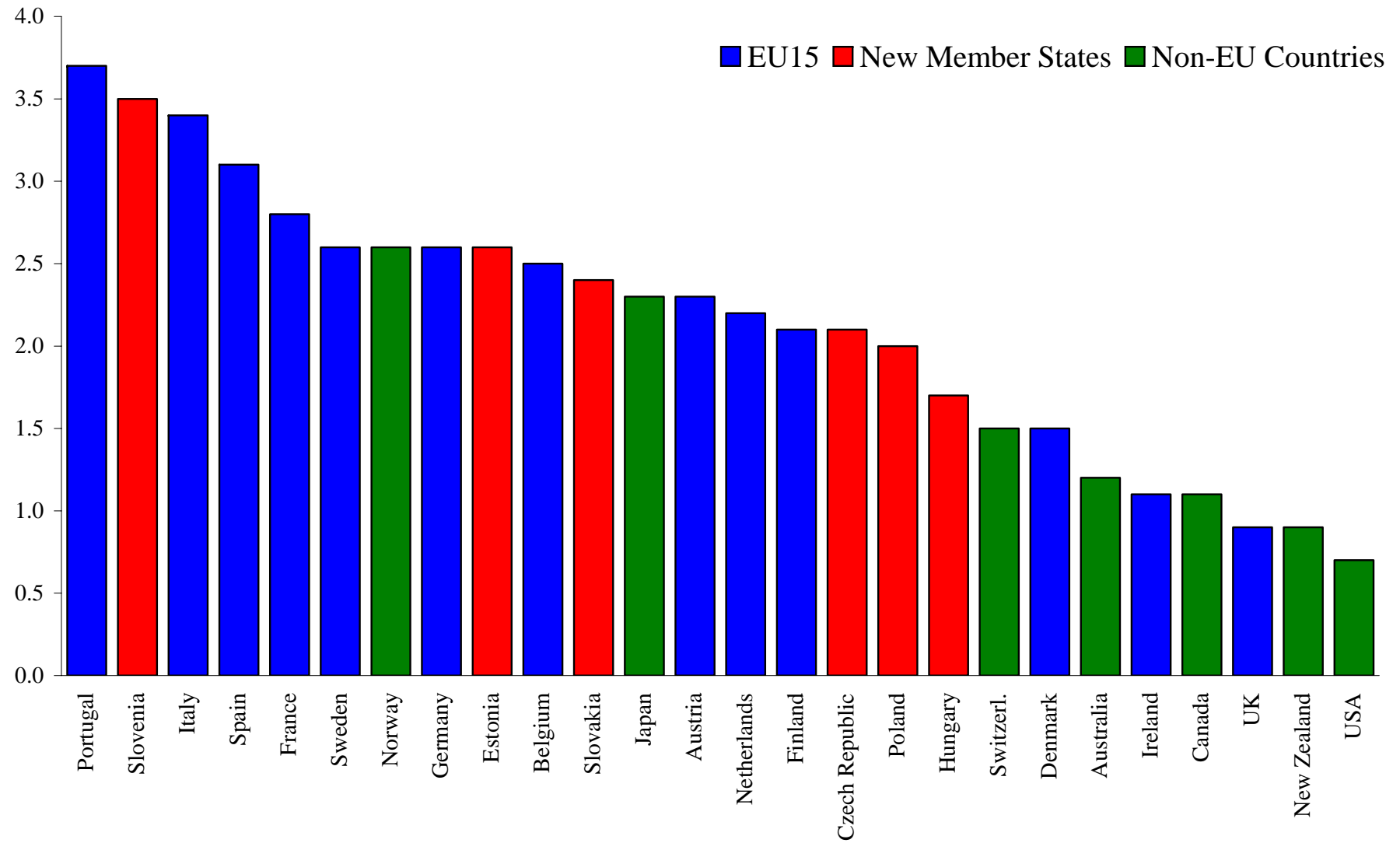
OCA Endogeneity (Effects of the EMU Enlargement)



Regional Structure of Exports (%) in 2001 / II



Labor Market Restrictions

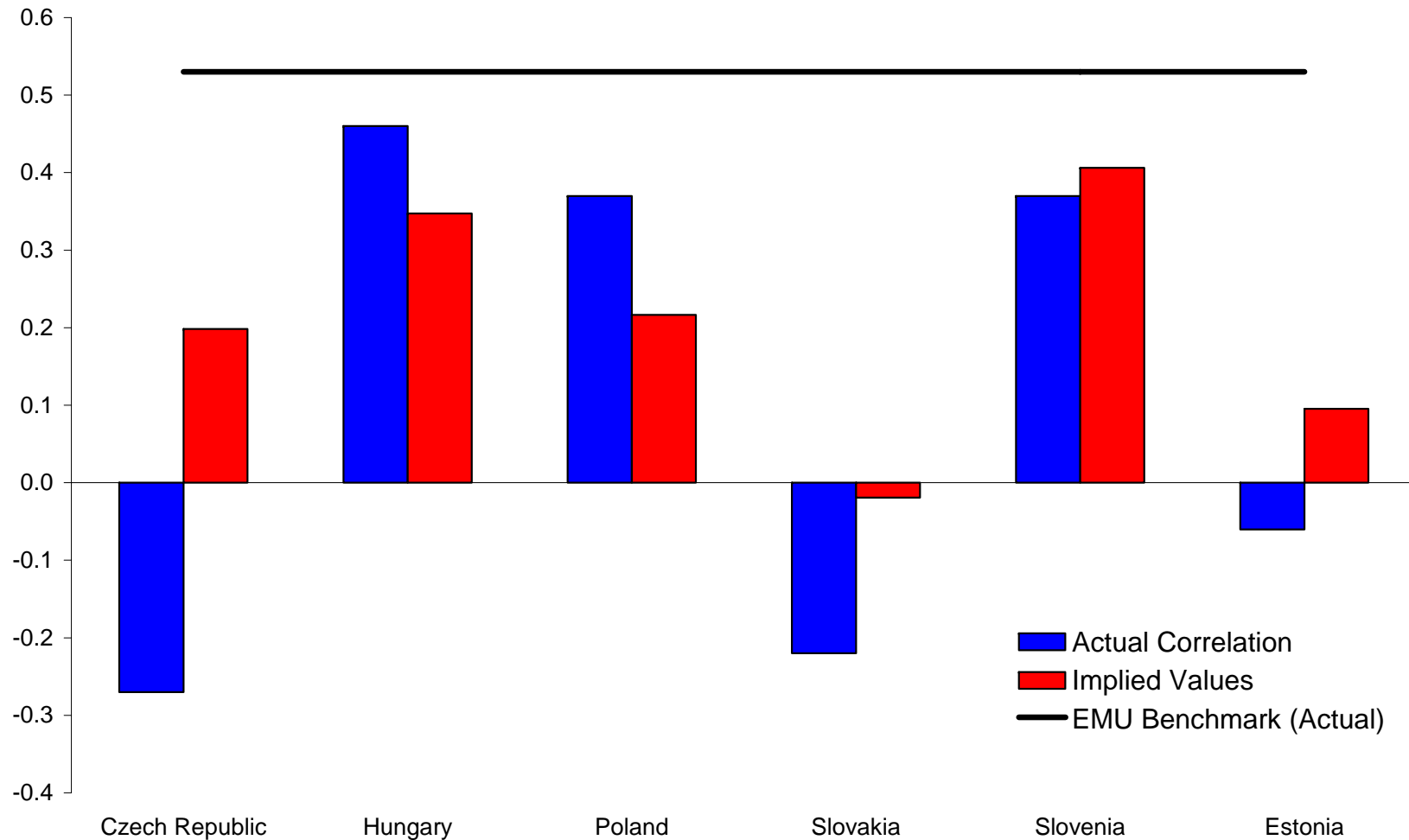


Determinants of Business Cycle Convergence

	GDP Growth Rates		GDP Deviation Cycles	
	Trade	FDI	Trade	FDI
Constant	0.350 ^{***} (2.812)	0.785 ^{***} (7.150)	0.250 ^{**} (1.984)	0.682 ^{***} (5.940)
Integration indicator	0.110 ^{***} (4.939)	0.140 ^{***} (4.544)	0.120 ^{***} (5.241)	0.112 ^{***} (3.434)
Labor market rigidities	-0.203 ^{**} (-2.581)	-0.226 ^{***} (-2.717)	-0.125 (-1.548)	-0.124 (-1.460)
Fiscal balances	-0.129 ^{***} (-2.843)	-0.088 [*] (-1.820)	-0.113 ^{***} (-2.664)	-0.093 [*] (-1.920)
EMU-Dummy	0.168 ^{***} (2.647)	0.228 ^{***} (3.792)	0.421 ^{***} (7.059)	0.495 ^{***} (8.388)
No. of observations	190	190	190	190
Adjusted R ²	0.231	0.216	0.414	0.368

Source: Artis et al. (2008).

Implications for EMU Enlargement: Decomposition of Business Cycle Correlation



Source: Artis et al. (2008).

Conclusions

- There are potentially significant gains but also possibly high costs of the euro introduction.
- A fairly clear ranking of new EU member countries seems to emerge: Mainly business cycles of Slovenia, and Poland are already correlated with the EMU's business cycle.
- This pattern is rather different from the proposals of euro introduction in the new member states.
- The underlying integration process should speed up the convergence of business cycles within the enlarged EU.