



Chapter 13: Essential macroeconomic tools

The point is that you can't have it all: A country must pick two out of three.
Paul Krugman (1999)

The Economics of European Integration

Richard Baldwin
Charles Wyplosz

fourth edition



Three principles: interest rate parity

A trader deciding on investing anywhere in the world:

- compare interest rates;
- consider exchange rate fluctuations: if foreign currency appreciates, an investment abroad will also lead to capital gain.

Thus, financial markets are in equilibrium when:

Domestic interest rate = Foreign interest rate + Expected exchange rate depreciation



Return of foreign assets

→ Interest rate parity condition.

Three principles: interest rate parity

Does the interest rate parity condition work?

Interest parity condition interpreted as revealing market expectations:

Exchange rate appreciation = Foreign inflation rate – Domestic inflation rate



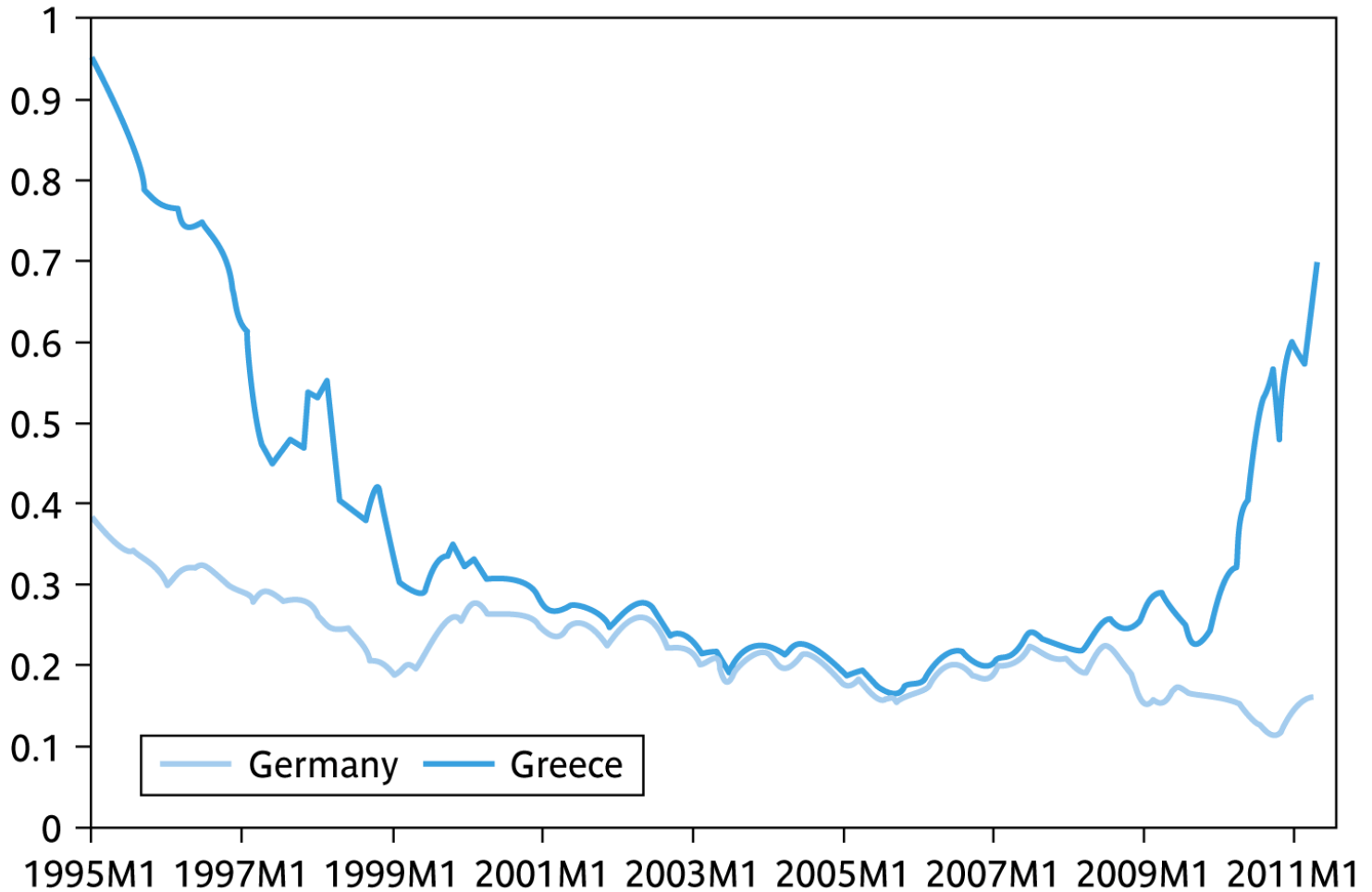
Inflation differential

But on top of exchange rate fluctuations there is also risk:

Interest rate of risky asset = Interest rate of safe asset + Risk premium

Three principles: interest rate parity

Government bond interest rates:



Three principles: purchasing power parity

The purchasing power parity (PPP) principle asserts that:

(Nominal) Exchange rate appreciation = Foreign inflation rate –
Domestic inflation rate.

So, if inflation at home is durably lower than abroad, domestic currency should appreciate (and conversely).

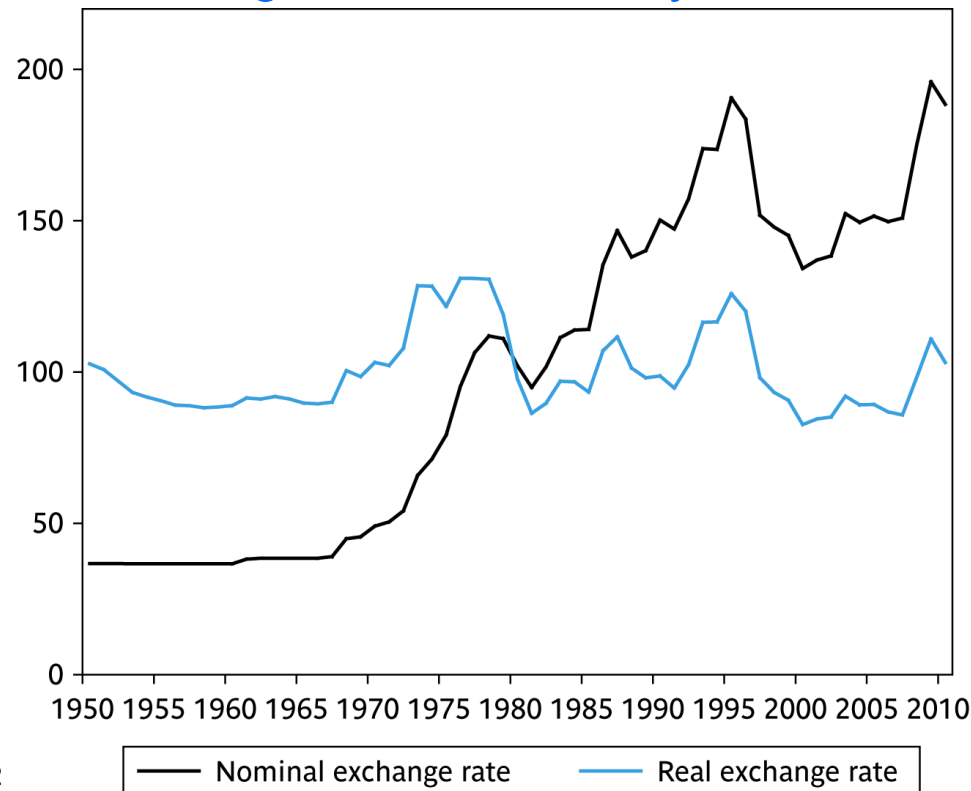
Real exchange rate (measure of competitiveness): $E \times P/P^*$, where E is nominal exchange rate; P and P^* are prices of basket of goods at home and abroad.

When real exchange rate appreciates, competitiveness declines as more baskets of foreign goods would need to be traded for 1 basket of domestic goods.

Three principles: purchasing power parity

E and prices are nominal variables. The money neutrality principle asserts that nominal variables do not affect real variables in the long run. PPP implies that the real exchange rate is constant.

Nominal and real exchange rates: Germany vs. UK, 1950–2010:



Three principles: purchasing power parity

Table 13.2 The Balassa–Samuelson effect: average annual changes (%), 1996–2008

	Bulgaria	Czech Republic	Estonia	Latvia	Lithuania
Inflation differential	29.0	1.6	3.2	3.7	1.4
Nominal appreciation	-19.7	2.6	-0.2	0.0	3.2
Real appreciation	9.3	4.2	3.0	3.7	4.6
	Hungary	Poland	Romania	Slovenia	Slovakia
Inflation differential	6.2	3.3	28.3	3.8	4.1
Nominal appreciation	-2.4	-0.2	-20.6	-2.8	1.5
Real appreciation	3.8	3.1	7.7	1.0	5.6

Three principles: the impossible trinity

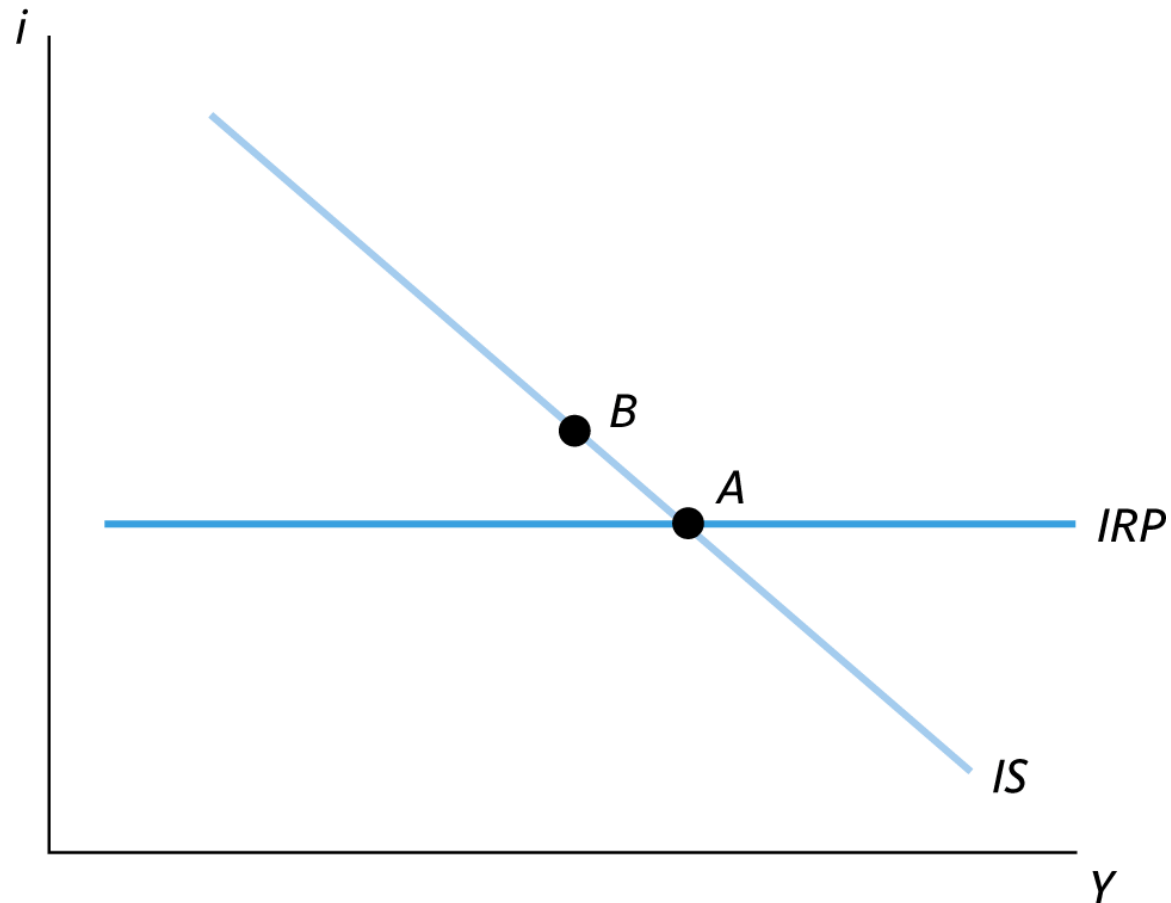
Review of monetary policy:

Money neutrality in the long run but monetary policy can affect the real economy in the short run, as explained by IS-LM:

- IS curve represents the conditions under which the market for goods and services is in equilibrium (with sticky prices);
- LM curve assumes that the central bank controls money supply to affect interest rate. Nowadays, central banks do the opposite (i.e., they control the interest rate directly) = central bank simply picks a point on the IS curve. The *LM* curve can be ignored;
- with financial openness, interest rate parity condition must hold. Foreign interest rate is given. If expected exchange rate change is also given, the interest rate parity condition imposes our own interest rate: IRP line.

Three principles: the impossible trinity

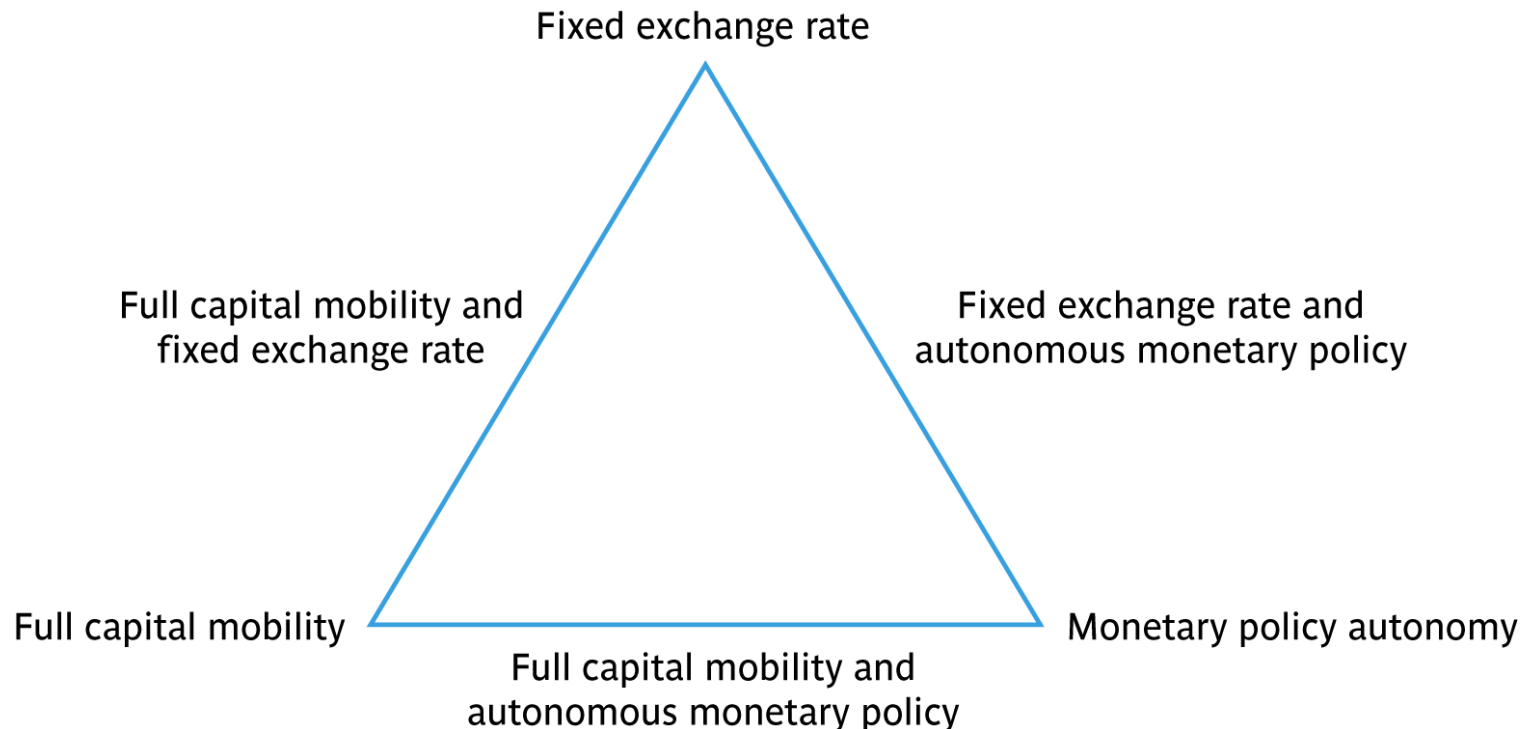
IRP does not necessarily go through point *A* (i.e., interest rate chosen by the central bank): central bank must either accept being at *B* or 'do something' about the exchange rate.



Three principles: the impossible trinity

Impossible trinity principle: only two of the three following features are compatible with each other:

- full capital mobility;
- fixed exchange rates;
- autonomous monetary policy.



Three principles: the impossible trinity

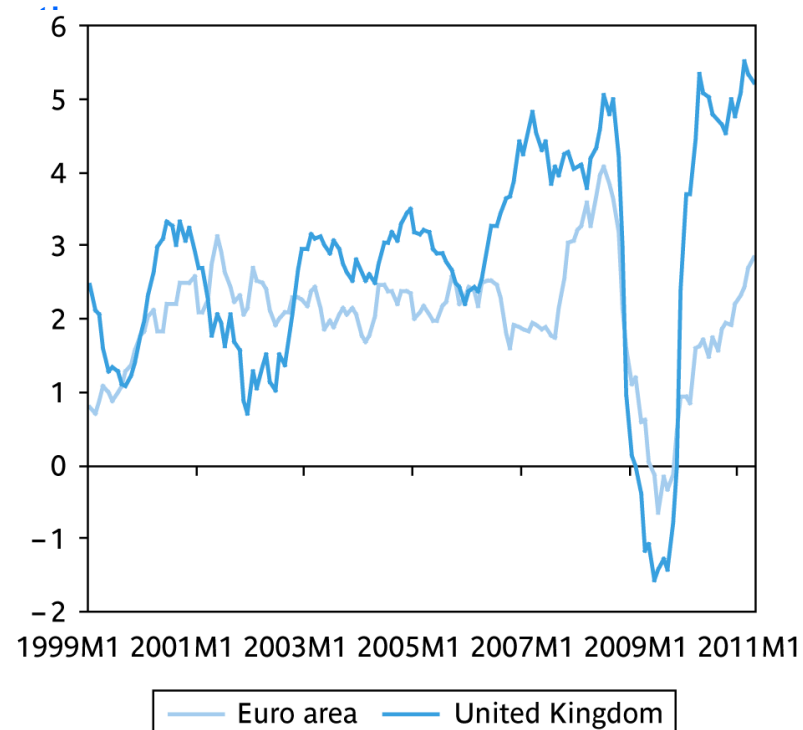
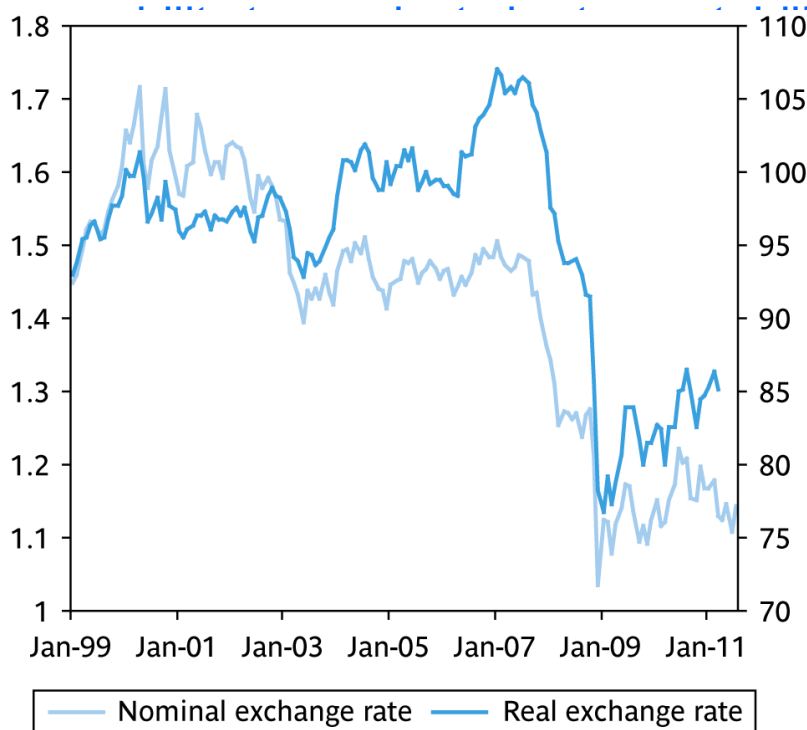
The impossible trinity principle is central to European integration: fixing the exchange rate means adopting the foreign interest rate; conversely, maintaining the ability to choose the domestic interest rate requires allowing the exchange rate to float freely.

Since the EU adopted in 1992 the principle of open capital markets, the choice has been circumscribed to the left or bottom sides of the triangle. One way of escaping the choice between exchange rate stability and monetary policy autonomy is to restrict capital movements. This is one reason why many European countries operated extensive capital controls until the early 1990s when full capital mobility was made compulsory. Likewise, many of the new EU members only abandoned capital controls upon accession.

Three principles: the impossible trinity

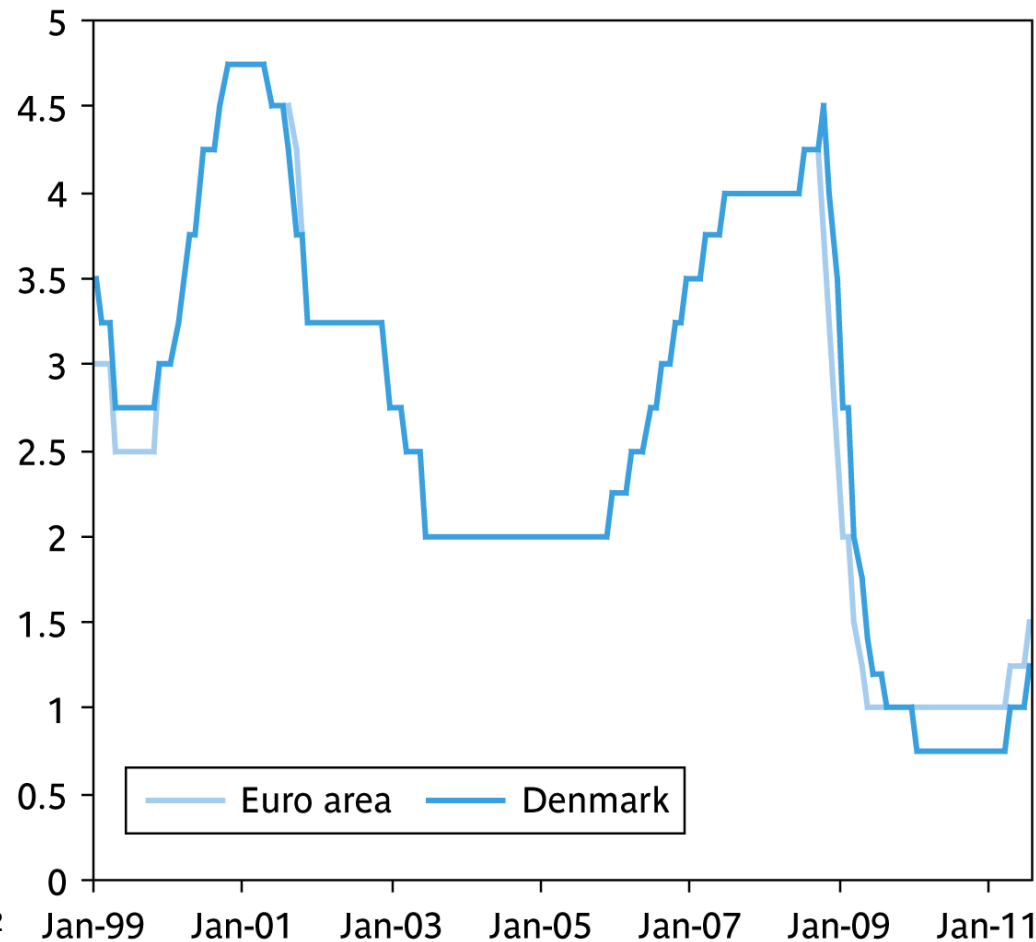
There are examples for each side of the impossibility triangle:

- Full capital mobility, autonomous monetary policy, flexible exchange rate: Eurozone as a whole, USA, Japan, UK, Switzerland, Sweden:
 - exchange rate can be quite volatile;



Three principles: the impossible trinity

- Full capital mobility and fixed exchange rate: Exchange Rate Mechanism:
 - shallow distinction between such a policy and euro membership.



Three principles: the impossible trinity

- Fixed exchange rate, monetary policy autonomy, capital controls: many developing and emerging countries (e.g., Brazil, China):
 - people try to evade the restrictions;
 - negative effects on investment and growth.

What happens when one tries to violate the impossible trinity? A currency crisis: sooner or later a speculative attack wipes out the fixed exchange rate arrangement.

Exchange rate regimes

Exchange rate regime only matters because nominal exchange rate has real effects in the short run. Non-neutrality arises because prices and wages move slowly (i.e., they are 'sticky').

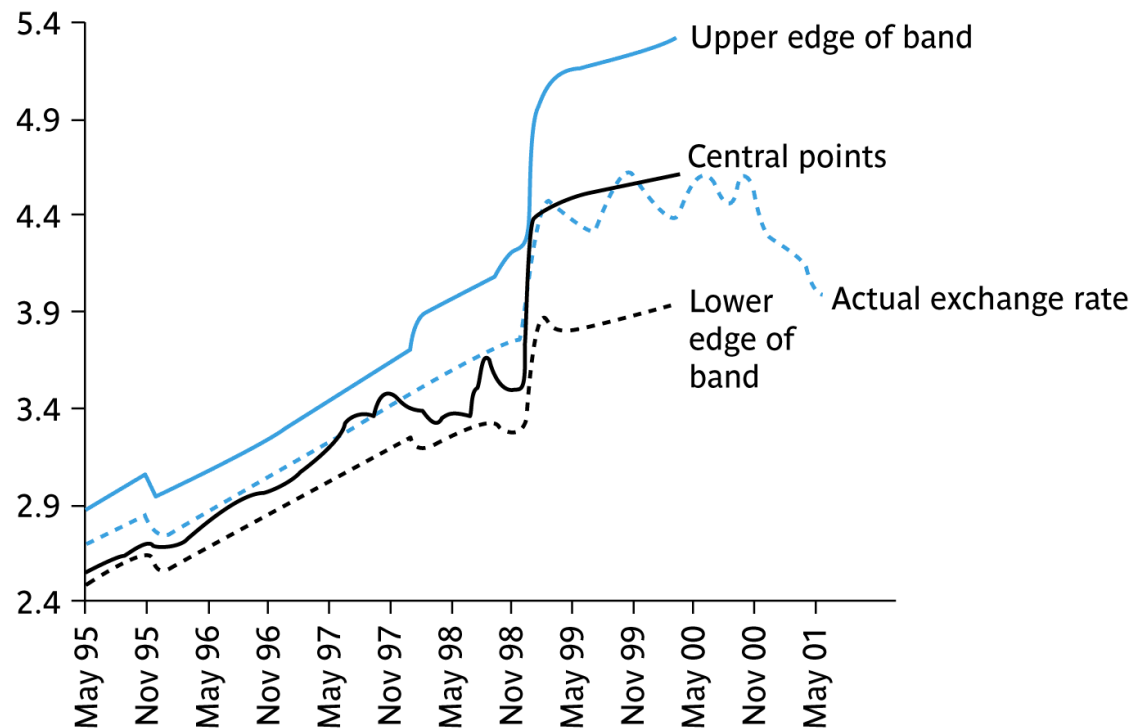
Regimes:

- free floating;
- managed floating: central banks buy their own currency when they consider it too weak, and sell it when they see it as too strong, but they refrain from pursuing any particular exchange rate target;
- fixed exchange rates or target zones: authorities declare an official parity vis-à-vis another currency or a basket of currencies, with margins of fluctuations around the central parity (i.e., target zone);

Exchange rate regimes

- crawling pegs: central parity and band of fluctuation around it, which are allowed to slide regularly: they crawl. The rate of crawl is sometimes pre-announced, sometimes not;

Poland's crawling band, May 1995–March 2000:



Exchange rate regimes

- Currency boards: a tight version of fixed exchange rate regimes. The central bank may only issue domestic money when it acquires foreign exchange reserves. If it spends its foreign exchange reserves, the central bank must retire its own currency from circulation and the money supply shrinks;
- Dollarization/euroization and currency unions: a stricter regime is to fix the exchange rate irrevocably, by adopting a foreign currency, hence the term '*dollarization*' (as in Ecuador, El Salvador, Panama, Liberia) or '*euroization*' (as in Kosovo and Montenegro).

Exchange rate regimes

The 1990s was a decade of violent currency crises: Europe's ERM was hit in 1992–93; Latin America followed in 1995–99; Southeast Asia's turn in 1997–98; and Russia in 1998.

These countries were operating one or another form of a peg, but countries like Hong Kong and Argentina, both with a currency board, escaped the apparently contagious wave.

This has made popular the 'two-corner' view according to which the only safe regimes are the extremes ones, free floating or 'hard pegs'.



Chapter 15: Optimum currency areas

The European countries could agree on a common piece of paper, . . . they could then set up a European monetary authority or central bank. . . . This is a possible solution, perhaps it is even an ideal solution. But it is politically very complicated, almost utopian.

Robert Mundell (1973)

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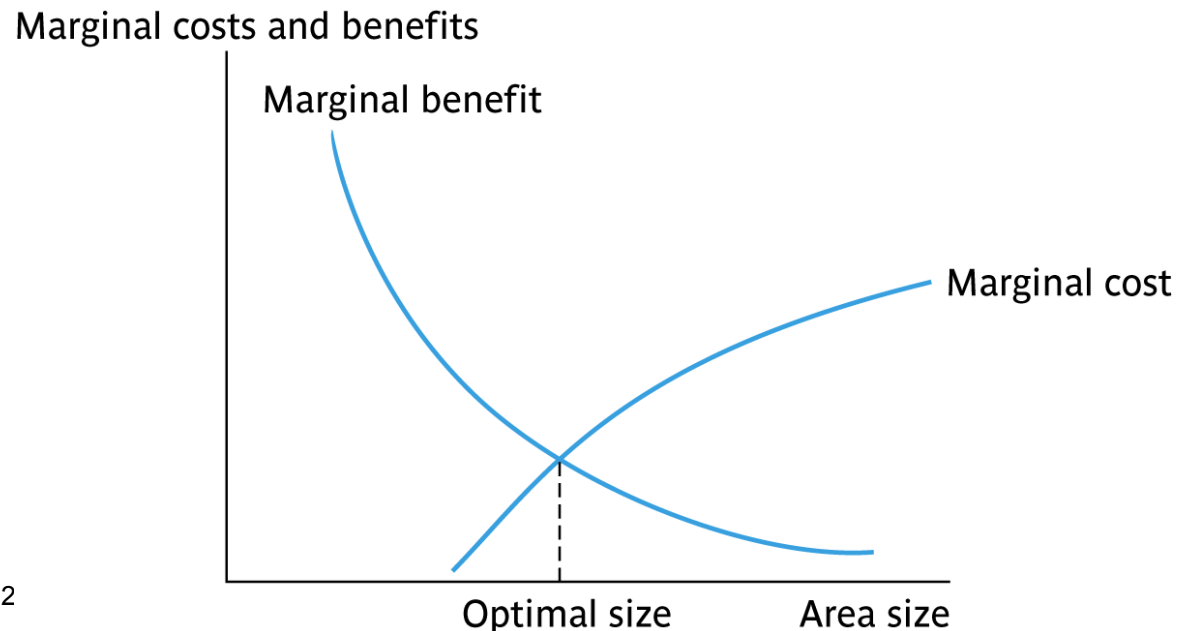


The question... and the short answer

Should currency area borders coincide with national borders?

- money makes transactions immensely easier: the more people accept a currency, the more useful it is;
- as a currency area grows larger, it becomes more diverse, which means more costly.

The solution has to involve trading off these costs and benefits:



Benefits of a currency area

Elimination of transaction costs and comparability of prices:

- if you started with one EU currency and exchanged it successively in all the currencies of the EU (before the Euro) and then exchanged it back into the initial currency, you would get less than 50% of the initial amount!

Elimination of exchange rate risk (for transactions and FDI).

More independent central bank.

Costs of a currency area

Diversity in a currency area is costly because a common currency makes it impossible to react to each and every local particularity.

The theory of optimum currency areas (OCA) aims at identifying these costs more precisely.

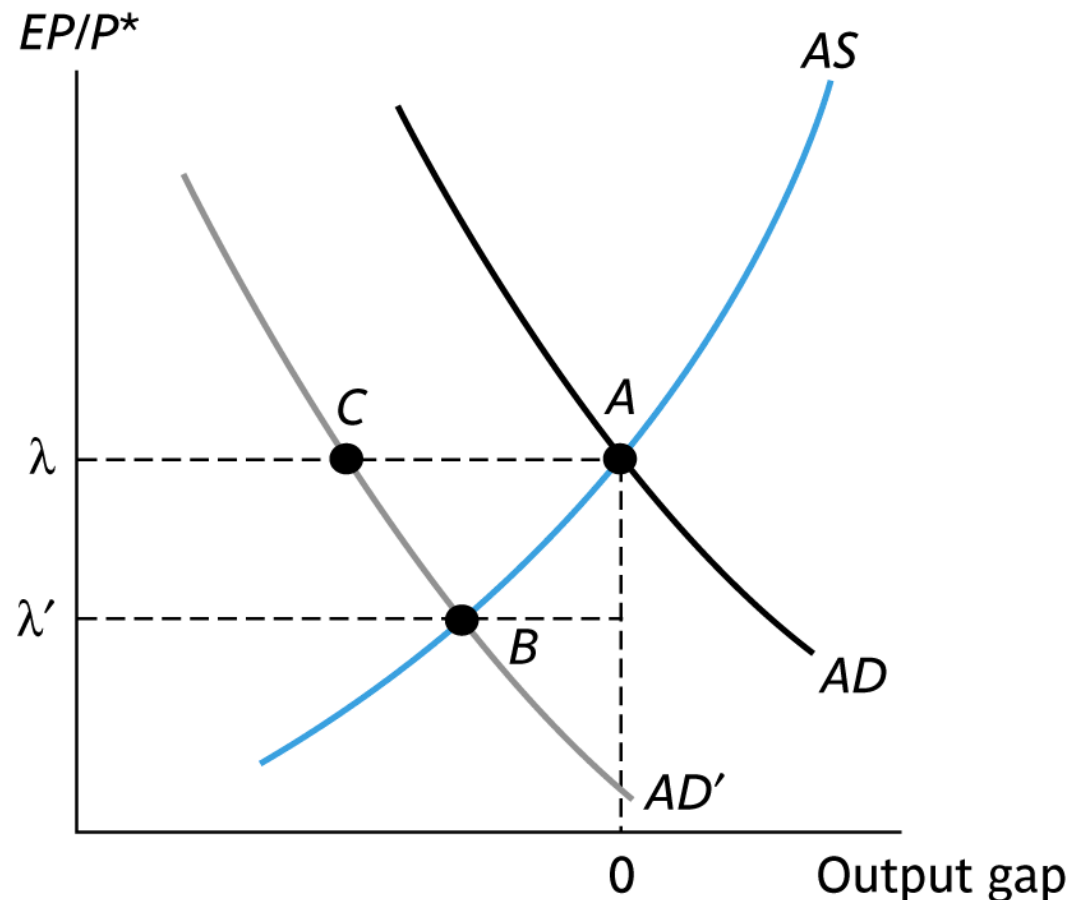
We proceed in three steps:

1. define and examine the effects of asymmetric shocks;
2. study the problems of asymmetric shocks in a currency area;
3. examine how the effects of asymmetric shocks can be mitigated when national exchange rates are no longer available.

Shocks and the exchange rate

Consider an adverse demand shock:

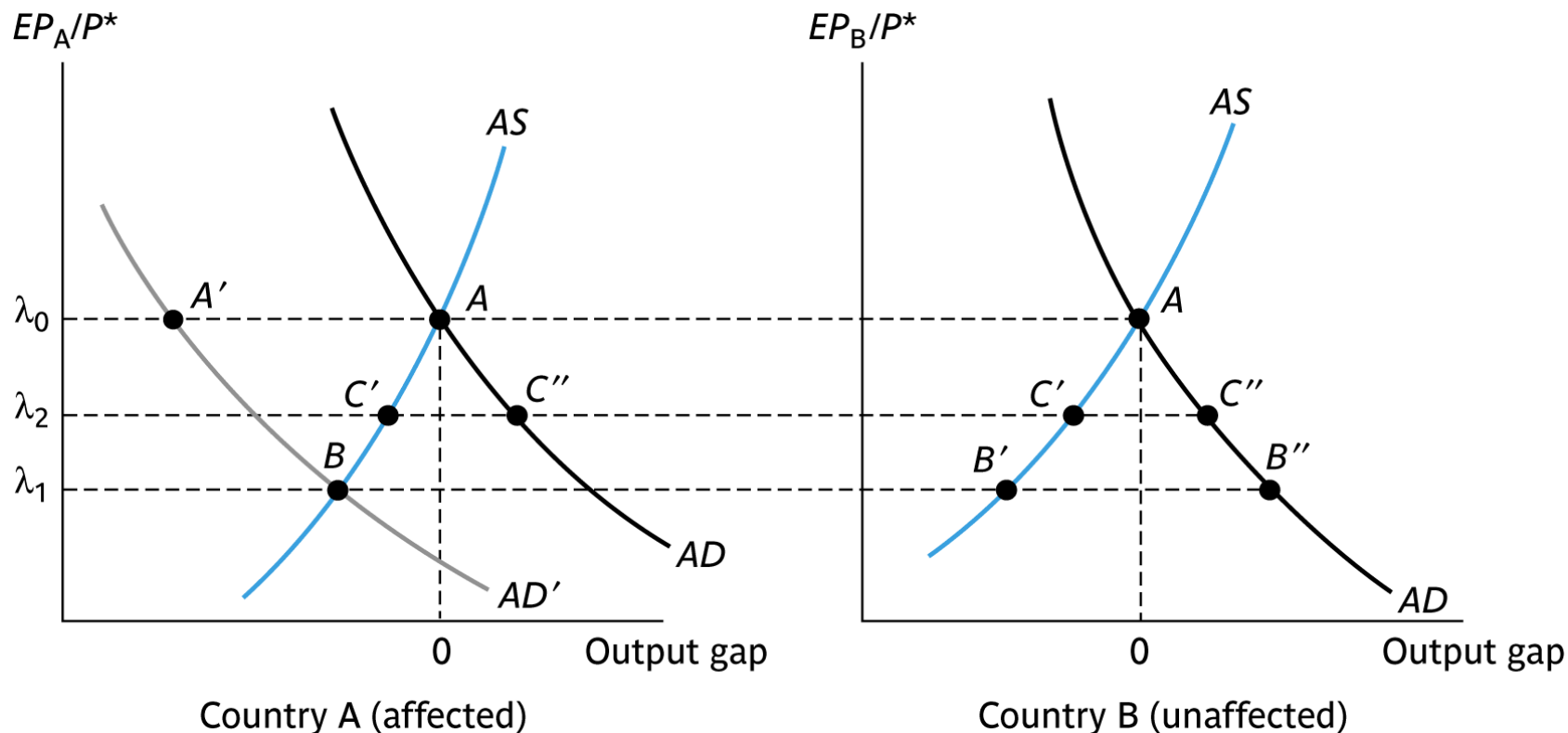
- the real exchange rate depreciates;
- with exchange rate and price rigidities, fall in output is much bigger.



Shocks and the exchange rate

Consider currency area with 2 countries (A, B) and A is hit by a shock:

- the real exchange rate depreciates to λ_2 ('correct' on average) = common exchange rate cannot insulate both countries;
- in the long-run, prices will adjust ($P_A \downarrow$ & $P_B \uparrow$).



The optimum currency area criteria

The optimum currency area (OCA) theory derive practical criteria to understand which countries should share the same currency.

Three classic (economic) criteria:

- Mundell;
- Kenen;
- McKinnon.

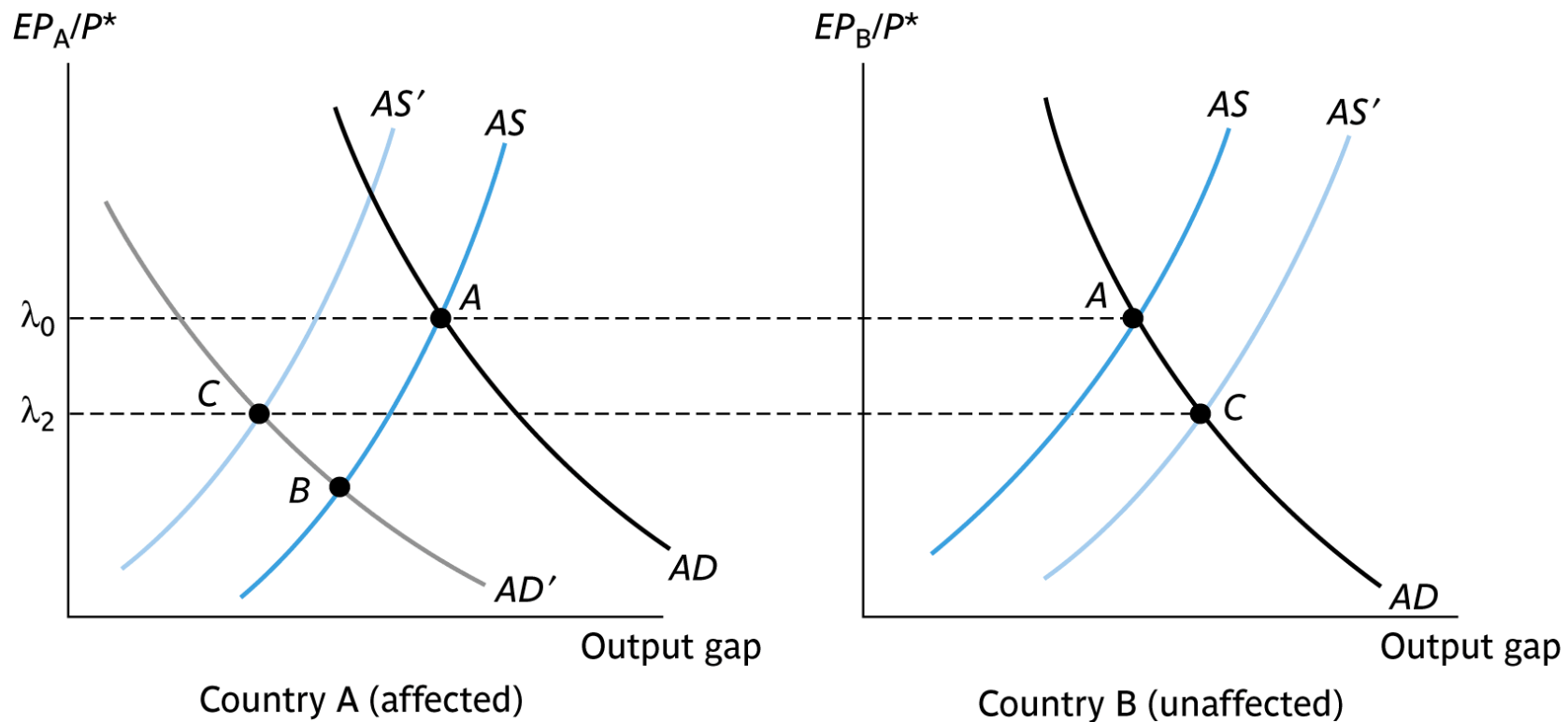
Three political criteria:

- fiscal transfers;
- homogeneous preferences;
- solidarity vs. nationalism.

Criterion 1 (Mundell): labour mobility

Optimum currency areas are those within which people move easily:

- unemployment in A and inflationary pressures in B could be solved by moving production factors from A to B.



Criterion 1 (Mundell): labour mobility

Caveats:

- labour mobility is easier within national borders (culture, language, legislation, welfare, etc.) than across countries;
- in presence of country specialisation, skills also matter;
- capital mobility: difference between financial and physical capital.

Criterion 2 (Kenen): production diversification

Countries whose production and exports are widely diversified and of similar structure form an optimum currency area:

- indeed, in that case, there are few asymmetric shocks and each of them is likely to be of small concern.

Criterion 3 (McKinnon): openness

Countries that are very open to trade and trade heavily with each other form an optimum currency area:

- traded good prices are set worldwide;
- if all goods are traded, domestic good prices must be flexible and the exchange rate does not matter for competitiveness.

Caveat:

- exchange rate can affect profits for exporters (but nowadays most goods have little national specificity).

Criterion 4: fiscal transfers

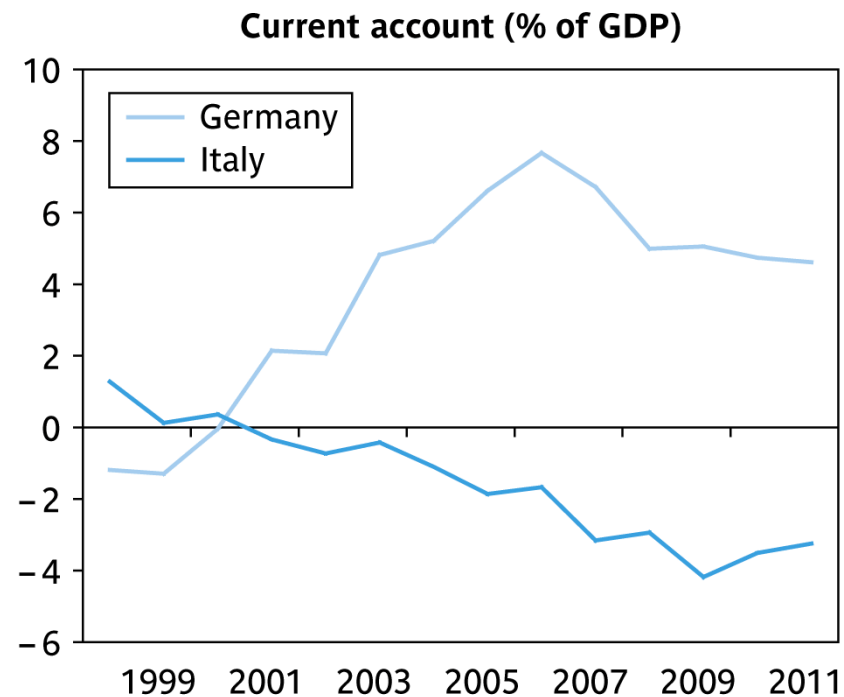
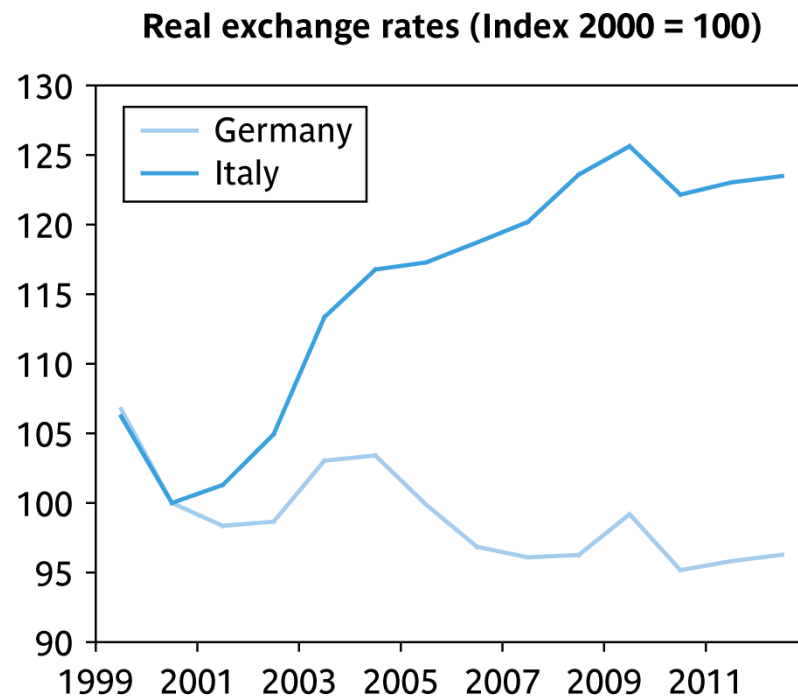
Countries that agree to compensate each other for adverse shocks form an optimum currency area:

- transfers can act as an insurance that mitigates the costs of an asymmetric shocks;
- transfers exist within national borders;
- the debt crisis has brought forward the issue of transfers (i.e., moral hazard).

Criterion 5: homogeneous preferences

Currency union member countries must share a wide consensus on the way to deal with shocks.

Germany and Italy: a difficult relationship:



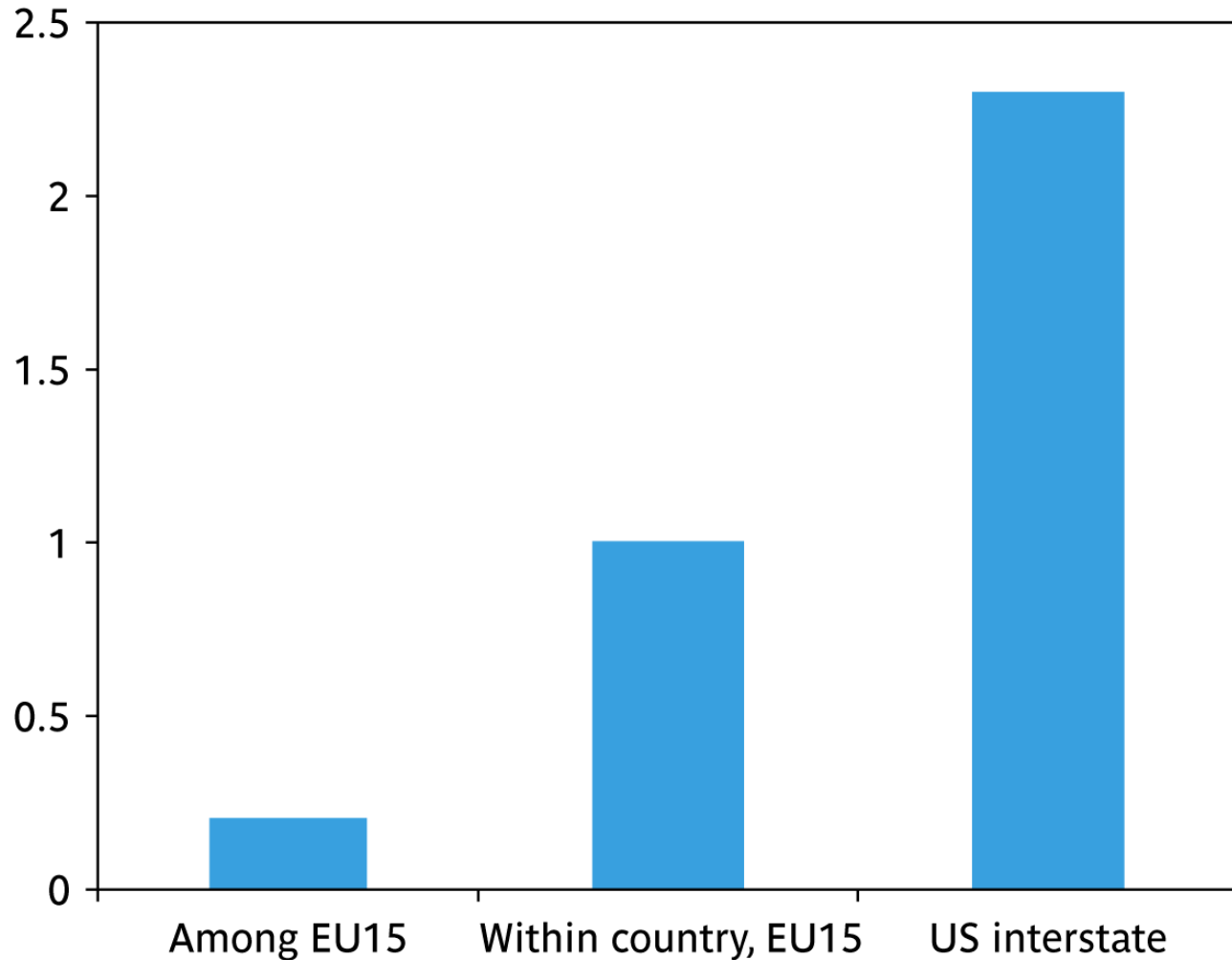
Criterion 6: solidarity vs. nationalism

When the common monetary policy gives rise to conflicts of national interests, the countries that form a currency area need to accept the costs in the name of a common destiny:

- it is unavoidable that there will be times when there will be disagreements and that these disagreements may follow national lines: people must accept that they will be living together and extend their sense of solidarity to the whole union.

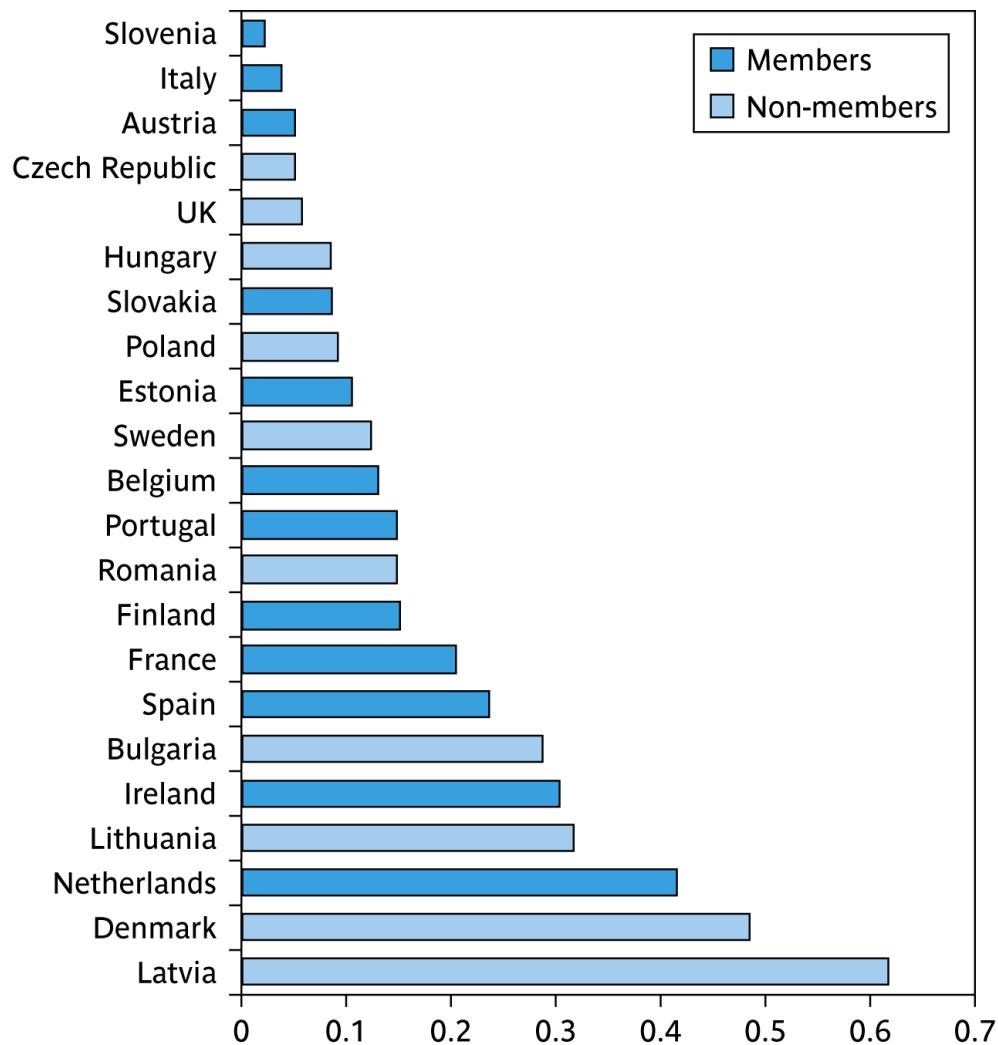
Is Europe an optimum currency area?

Labour mobility: Europeans move little!



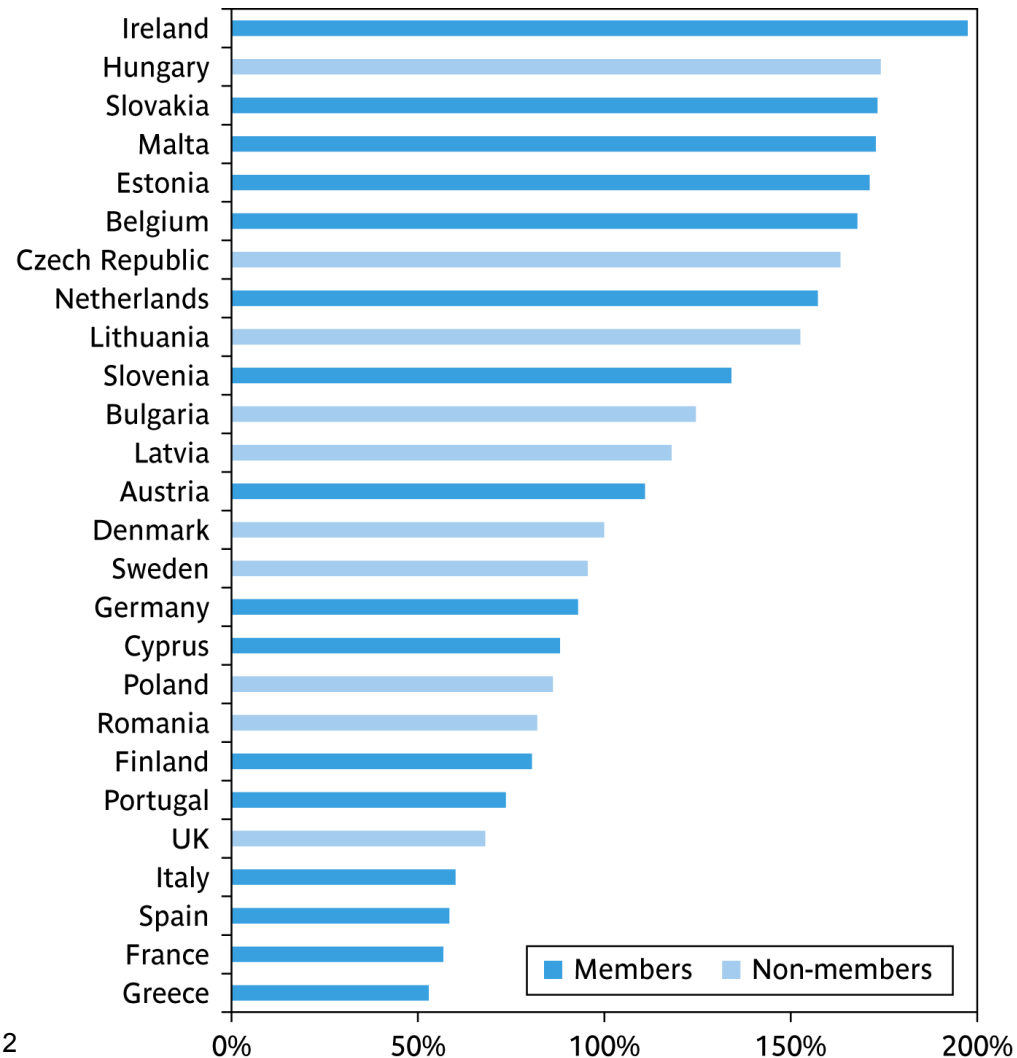
Is Europe an optimum currency area?

Diversification and trade dissimilarity = trade dissimilarity index:



Is Europe an optimum currency area?

Openness = openness to trade:



Is Europe an optimum currency area?

Fiscal transfers:

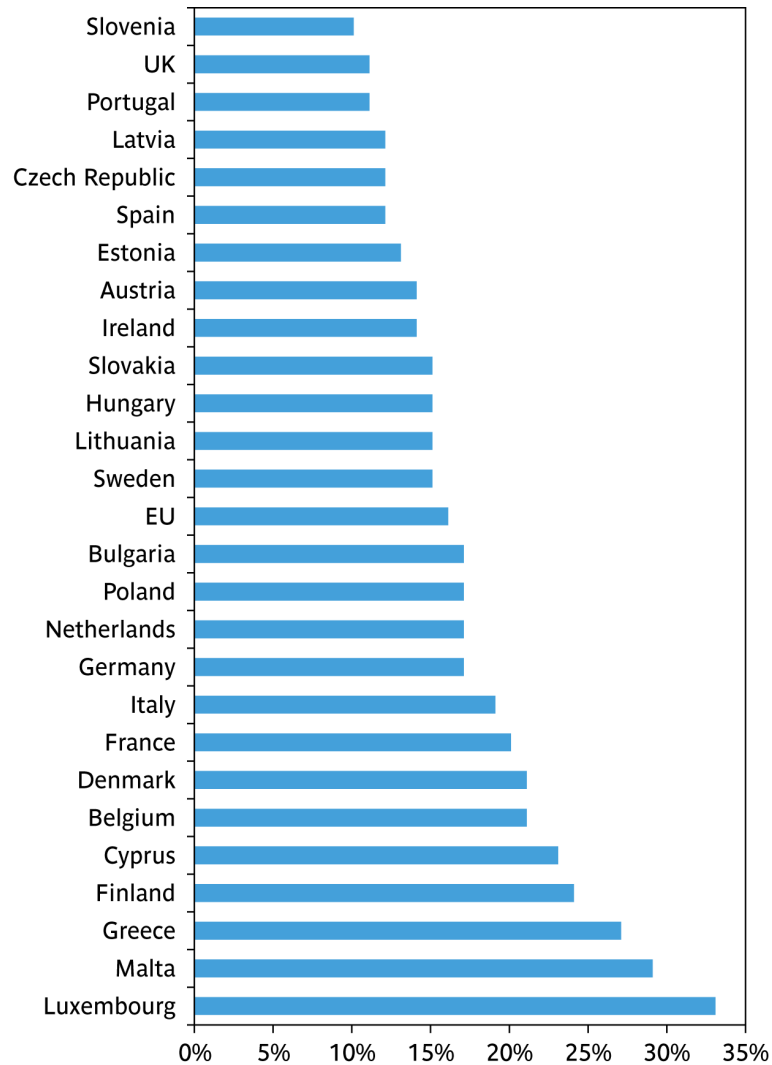
- up until the debt crisis, there was no transfer system in the EU;
- EU budget is small (slightly above 1% of GDP) and almost entirely spent on operating expenses, CAP, and Structural Funds;
- crisis led to the creation of the European Financial Stability Fund (EFSF), which recognizes that monetary union needs transfers.

Homogeneous preferences:

- based on past inflation rates, it does not seem that country share similar views on monetary policy;
- similar story when looking at public debts.

Is Europe an optimum currency area?

Solidarity vs. nationalism = feeling European? (2006)



Is Europe an optimum currency area?

So, is Europe an optimum currency area? Mixed performance:

Table 15.1 OCA scorecard

Criterion	Satisfied?
Labour mobility	No
Trade openness	Yes
Product diversification	Yes
Fiscal transfers	No
Homogeneity of preferences	Partly
Commonality of destiny	?

- The single currency project has been and remains controversial.
- The partial fulfillment of the OCA criteria implies that, given that the decision to go ahead has been taken, there will be costs.

Will Europe become an optimum currency area?

The fact that the single currency exists can change the situation:

- effects on trade: Baldwin et al. (2008) conclude that, so far, the euro has probably increased trade by some 5%;
- effects on labour markets: few expect labour mobility to increase dramatically in the near future but the single market may encourage reforms to make European labour markets more flexible;
- fiscal transfers: much the same applies to fiscal transfers.

BUT monetary union is not only about economics!

Political considerations have been paramount in launching the euro: political leaders agreed on the monetary union without thinking in terms of the OCA theory. Their intention was to move one step further in the direction of an 'ever-closer union'.