

Lecture 7: Intermediate macroeconomics, autumn 2012

Lars Calmfors

Literature: *Krugman-Obstfeld-Melitz, Chapter 20*

EEAG, Sections 1.2.5, 1.3, 1.4.5, 1.4.6 and 2.

Topics

- **The origins of the Economic and Monetary Union (EMU)**
- **Costs and benefits of EMU membership**
- **The theory of Optimal Currency Areas (OCA)**
- **Efficiency gains**
- **The euro and trade**
- **Costs of restricting the scope for stabilisation policy**
- **Symmetric and asymmetric shocks**
- **Which countries benefit the most from monetary unification?**
- **The current crisis and macroeconomic imbalances in the euro area**
- **Sweden and the euro**

The European Union (EU)

- **System of international institutions**
- **The Treaty of Rome, 1957**
- **Currently: 27 European countries**
- **Single market**
- **Free movement of people, goods, services and capital**

EMU – Economic and Monetary Union

- **An old idea in the European Union**
- **1989: Delors report**
- **1991: Maastricht treaty**
- **1997: Stability pact**
- **Eleven of then 15 EU countries joined from the start
(Denmark and the UK have the formal right to stay out according to the Maastricht treaty, Sweden has no such formal right but chose to stay outside all the same, Greece did not meet the entry requirements)**
- **1 January 1999: the euro was introduced in "electronic" form (shares, bonds, bank transactions etc. and ECB (European Central Bank) in Frankfurt became responsible for the common monetary policy in the euro area**
- **1 January 2001: Greece entered (twelve members)**
- **1 January 2002: the euro was introduced as a physical means of payments (bills and coins)**
- **Lithuania's application rejected 2006**
- **1 January 2007: Slovenia entered (13 members)**
- **1 January 2008: Cyprus and Malta entered (15 members)**
- **1 January 2009: Slovak Republic entered (16 members)**
- **1 January 2011: Estonia entered (17 members)**

Fig. 20-1: Members of the Euro Zone as of January 1, 2011



Swedish decision process

- **Government Commission on the EMU 1995-96
(Calmfors Commission)**
- **Parliamentary decision not to join 1997**
- **Government Commission on Stabilisation Policy in the Event
of Swedish Membership 2000-02**
- **No vote in euro referendum 2003**
 - **High voter turnout: 82.6 percent of eligible voters**
 - **No: 55.9 percent**
 - **Yes: 42.0 percent**
- **The issue of a new referendum was raised again 2010**
- **At present the issue is dead**

Evaluation of benefits and costs of EMU membership

- **Theory of Optimal Currency Areas (OCA)**
- **Robert Mundell (1961)**
- **Mundell was awarded the 1999 Riksbanken Prize in Economic Sciences in Memory of Alfred Nobel (“Nobel Prize” in Economics)**
- **An optimal currency area should consist of economically highly integrated economies**
 - **goods and services**
 - **financial and physical capital**
 - **labour**
- **Trade-off between social efficiency aspects and stabilisation policy aspects**

Analysis of the Swedish Government Commission on the EMU

- **Social efficiency aspects**
- **Stabilisation policy aspects**
- **Political (political science) aspects**

Social efficiency

- **Lower transaction costs in the case of international payments**
 - resource savings of 0,1 – 0,2 per cent of GDP in banking sector. Additional savings (but probably smaller) in the rest of the economy.
- **No exchange rate risk when payments are made within the euro area**
 - Positive effect on foreign trade and cross-border (financial and direct) investment
 - Intensive debate on how large these effects are
- **More intensive competition**
 - price comparisons become easier to make
 - higher price elasticities of demand (firms' price mark-ups over marginal costs fall)
 - $P = \varepsilon / (\varepsilon - 1) MC$
 - Incorrect claims in the public debate of much higher price increases after transition – only in a few areas but not generally (temporarily lower demand elasticities because of lack of acquaintance with new currency)
- **But no reason to expect lower inflation inside the EMU than outside for a country like Sweden (more or less the same monetary policy)**

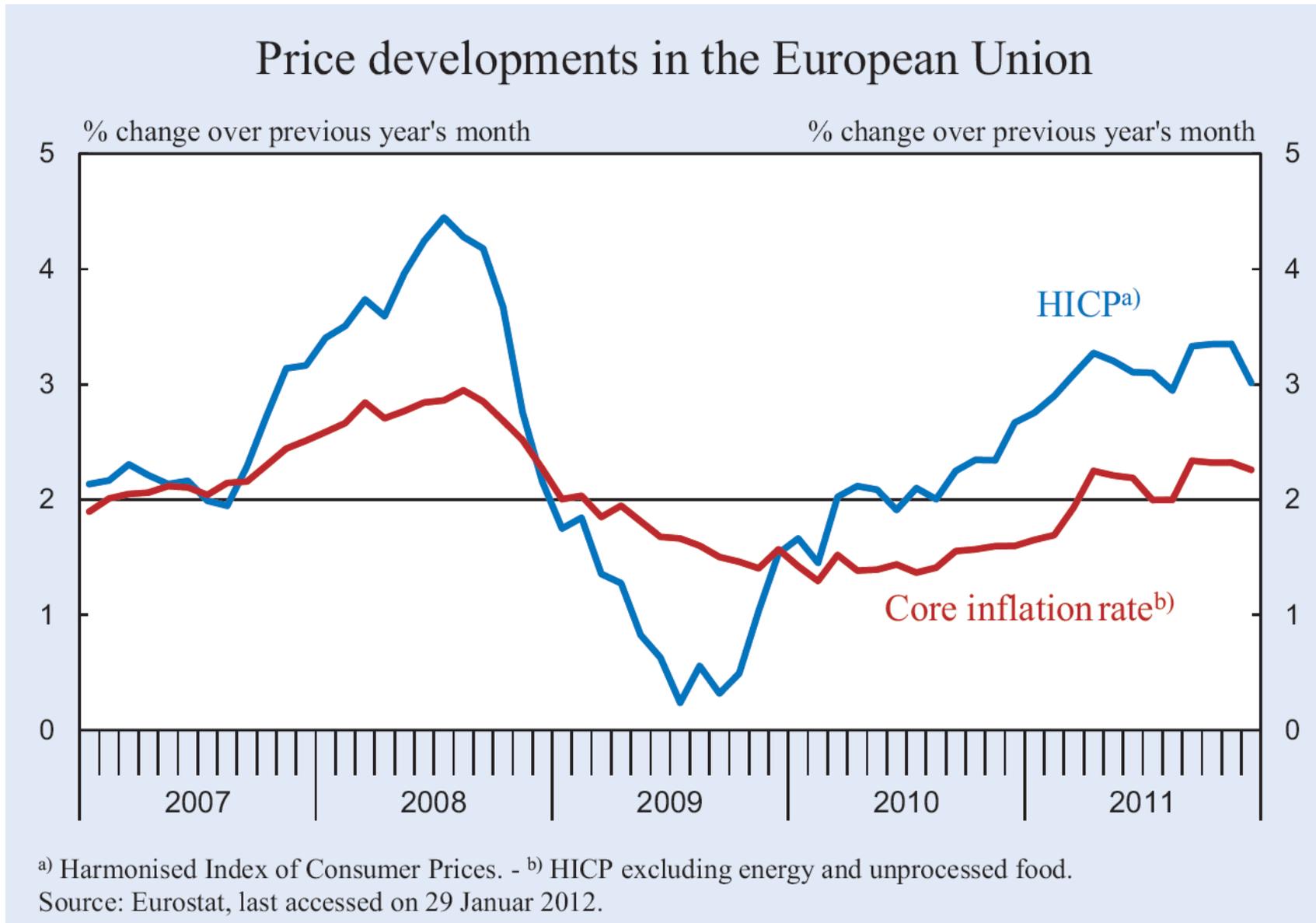
Trade effects of a common currency

- **Earlier large difficulties to find empirical support for more foreign trade with smaller exchange rate fluctuations**
- **But a common currency may represent a more fundamental change of the monetary regime than a reduction of exchange rate fluctuations between different currencies**
- **Studies by Andy Rose and others: *huge* trade effects of a common currency (+ 100-200 %) in the long run**
 - **panel data from 1970: variation both across countries and over time**
 - **limited number of countries with observations of common currencies**
 - **non-representative observations (poor countries, earlier colonies, small countries or regions like Monaco, the Vatican and Pitcairn)**
 - **other factors?**
- **Studies of what actually happened after the start of the EMU**
 - **+ 5–15 % in most studies**

Trade and growth

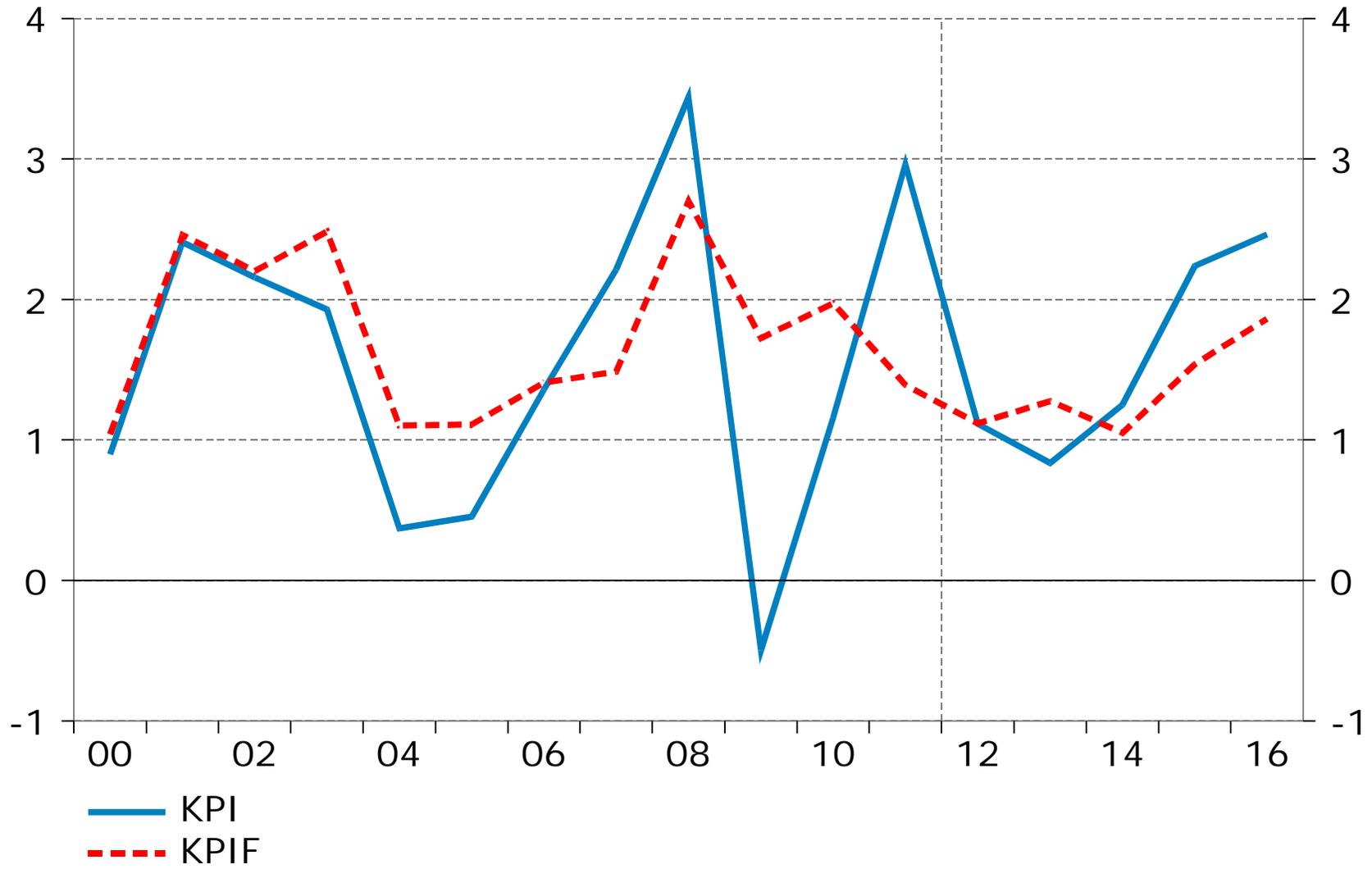
- **Increased trade because of lower trade barriers imply a more efficient use of resources**
 - **traditional trade theory: better use of comparative advantages**
 - **new trade theory: more specialisation allows economies of scale to be exploited to a larger extent**
- **Neoclassical growth theory (Solow model): GDP per capita increases from one level to another – temporarily higher growth during an adjustment period (20-30 years))**
- **Endogenous growth theory: permanently higher growth**
 - **more intense competition \Rightarrow higher rate of innovation**
 - **faster diffusion of innovations through trade**
- **Empirical research seems to confirm that more trade implies higher growth**
 - **Frankel and Rose (2000): each percentage point rise of trade intensity ($\text{exports} + \text{imports} / 2 \cdot \text{GDP} \Rightarrow \text{GDP per capita} \uparrow 1/3 \text{ per cent}$**
 - **UK report on euro membership: long-run rise of GDP per capita by med 0.5 – 9 %**
 - **but much faster productivity growth in Sweden and the UK than in France, Germany and Italy 1995-2007**
 - **other factors than a common currency are probably far more important for productivity growth than a common currency**

Figure 1.11



Konsumentpriser

Procentuell förändring



Potential stabilisation policy costs of a common currency

- **Asymmetric (country specific) cyclical shocks versus symmetric (common) shocks**
- **A large frequency of asymmetric shocks imply large stabilisation policy costs because exchange rate movements can then no longer function as automatic shock absorbers (cf the AA-DD analysis in Krugman-Obstfeld-Melitz) and monetary policy can no longer be adjusted to the country-specific conditions**
- **Asymmetric recessionary shocks are an obvious problem**
- **But asymmetric booms are also a problem**
 - **Inflation adjusts only gradually and causes ultimately an "overshooting" of the real exchange rate (the real exchange rate appreciates too much in the end because of higher inflation at home than abroad)**
 - **"Walter's critique": expected future inflation reduces the real interest rate (the nominal interest rate less inflation) in a boom and therefore exacerbates the boom in the short run**
 - **interaction with house prices**

Asymmetric developments in the eurozone

- **Serious overheatings developed in especially Ireland and Spain**
- **Low real interest rates**
- **Credit expansion**
- **Large rises in house prices**
- **Boom in the construction sector**
- **Real appreciation and current account deficits**
- **Deep downturns when the bubble burst**
- **Need for real depreciations**
- **But real depreciations are very difficult to achieve if there exists no exchange rate that can be changed within a currency area**

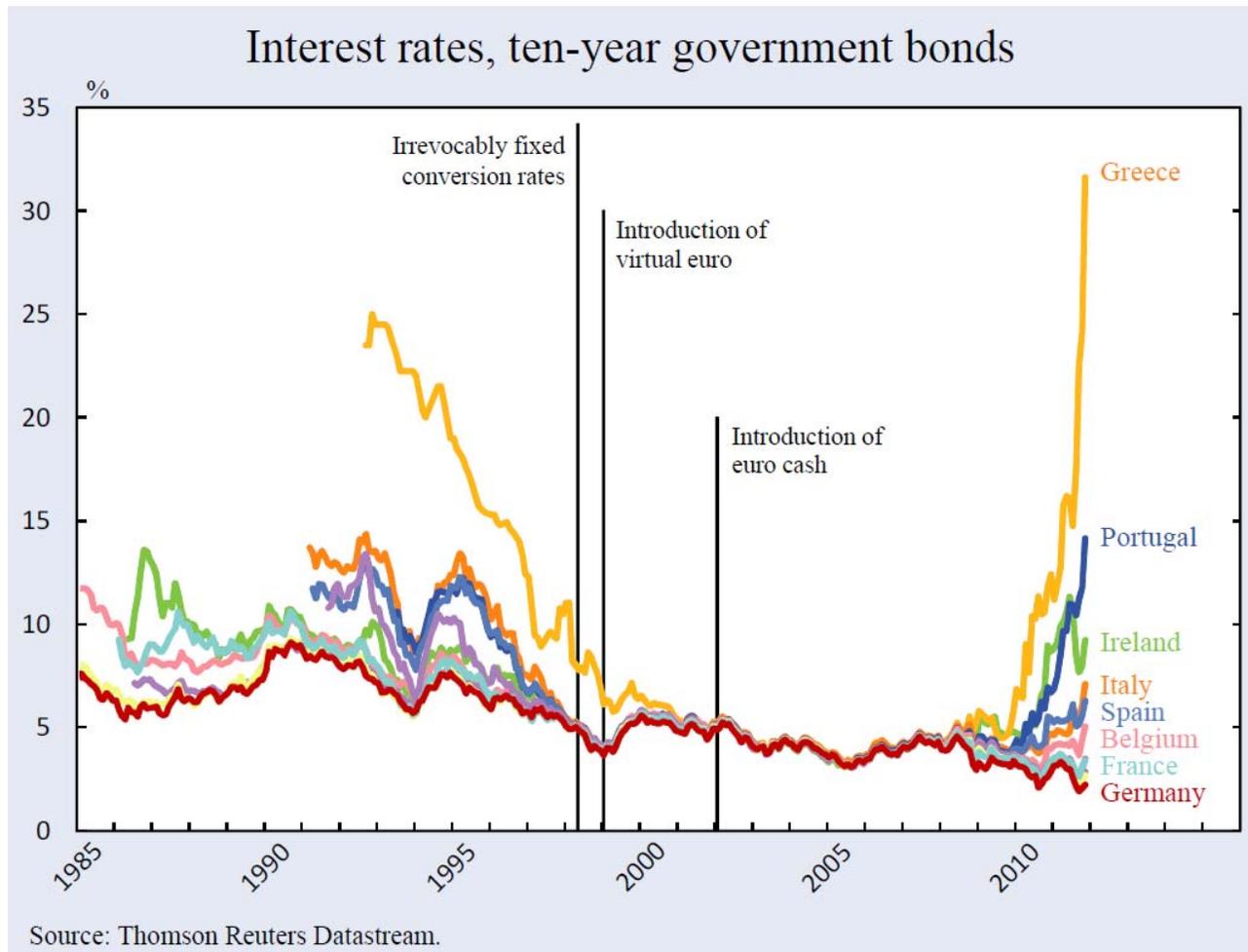
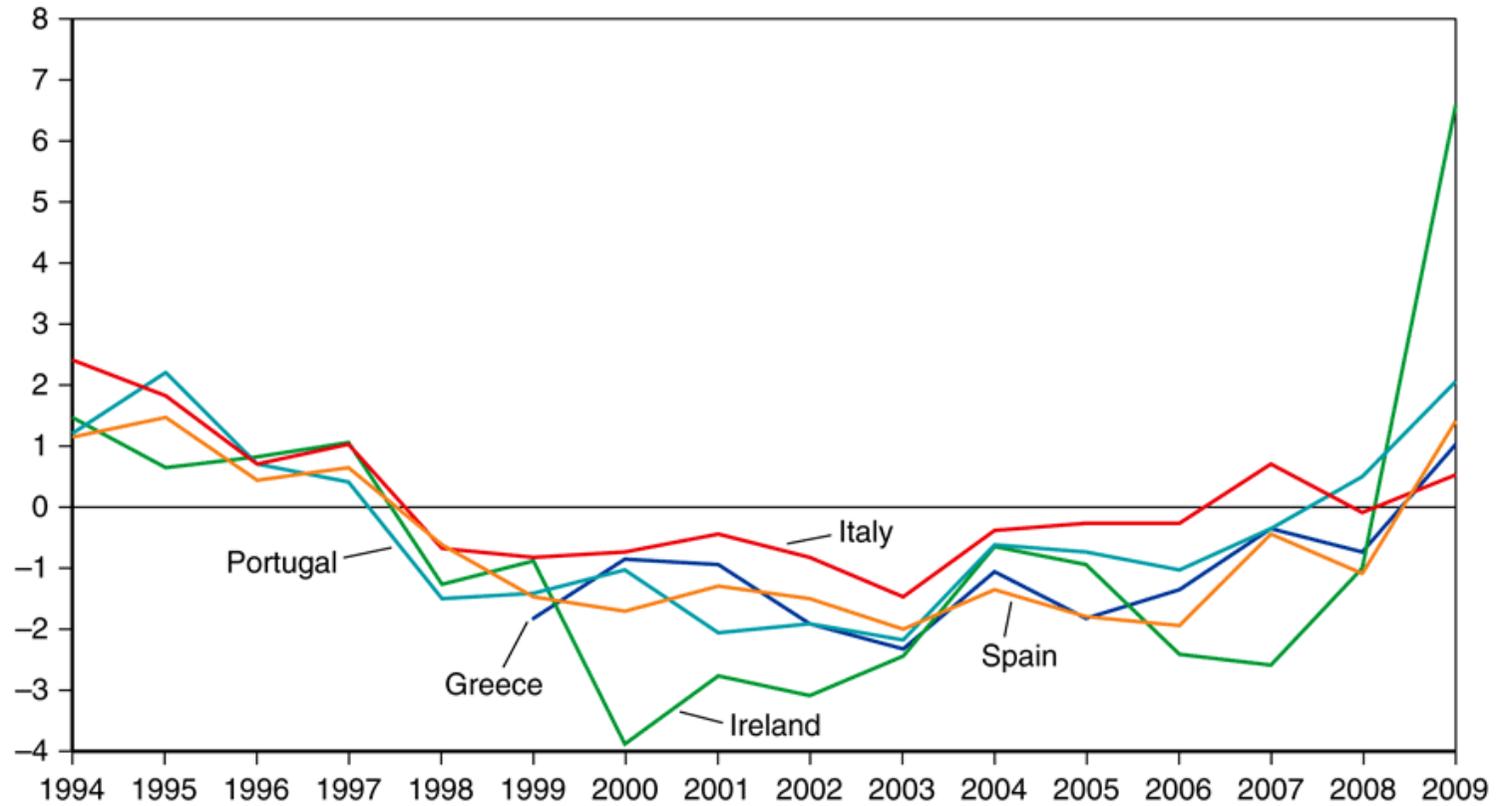


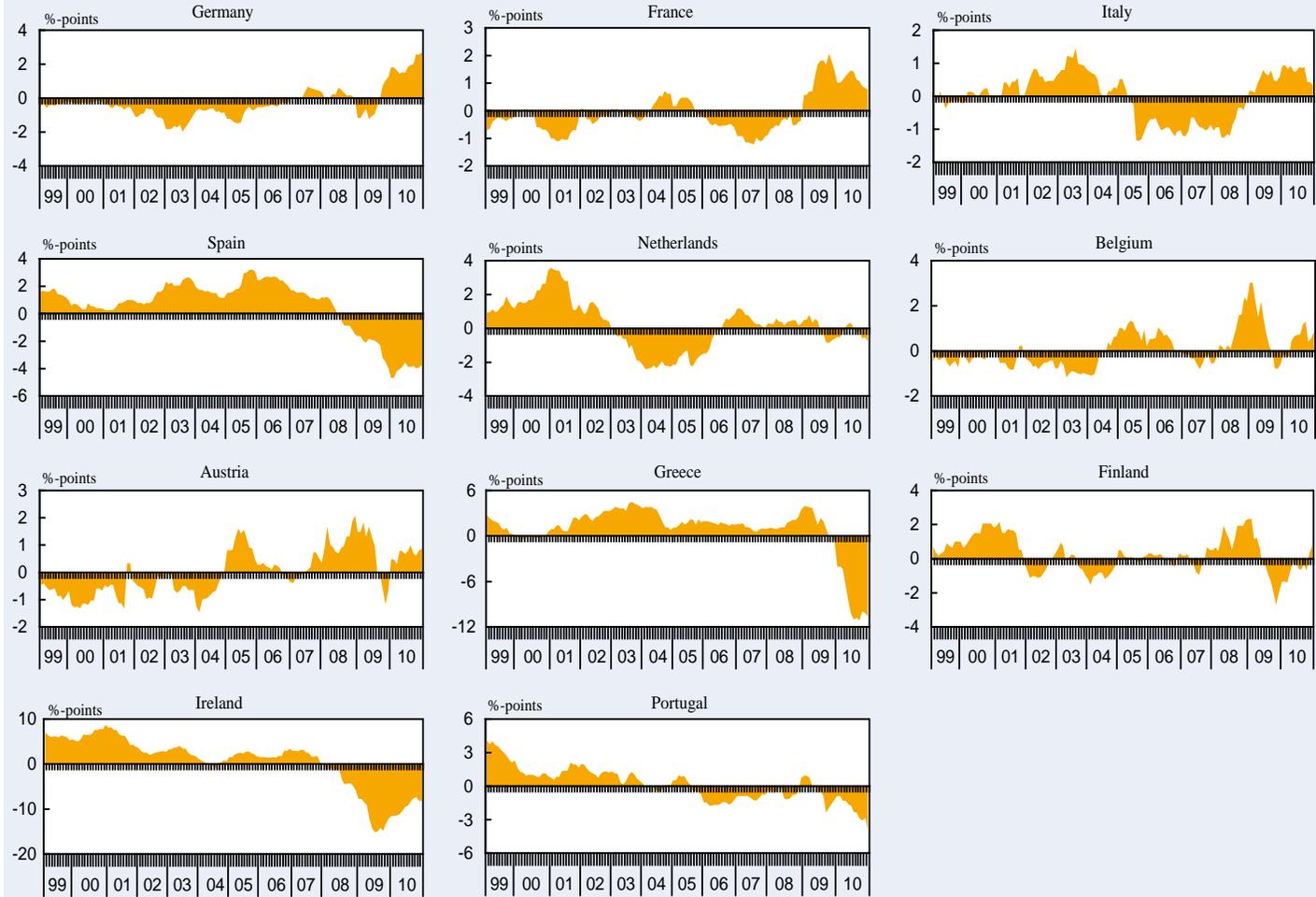
Fig. 20-8: Divergent Real Interest Rates in the Euro Zone

National real interest rate
less German rate
(percent per year)



Source: Datastream.

Deviations of country-specific optimal policy rates from the ECB rate

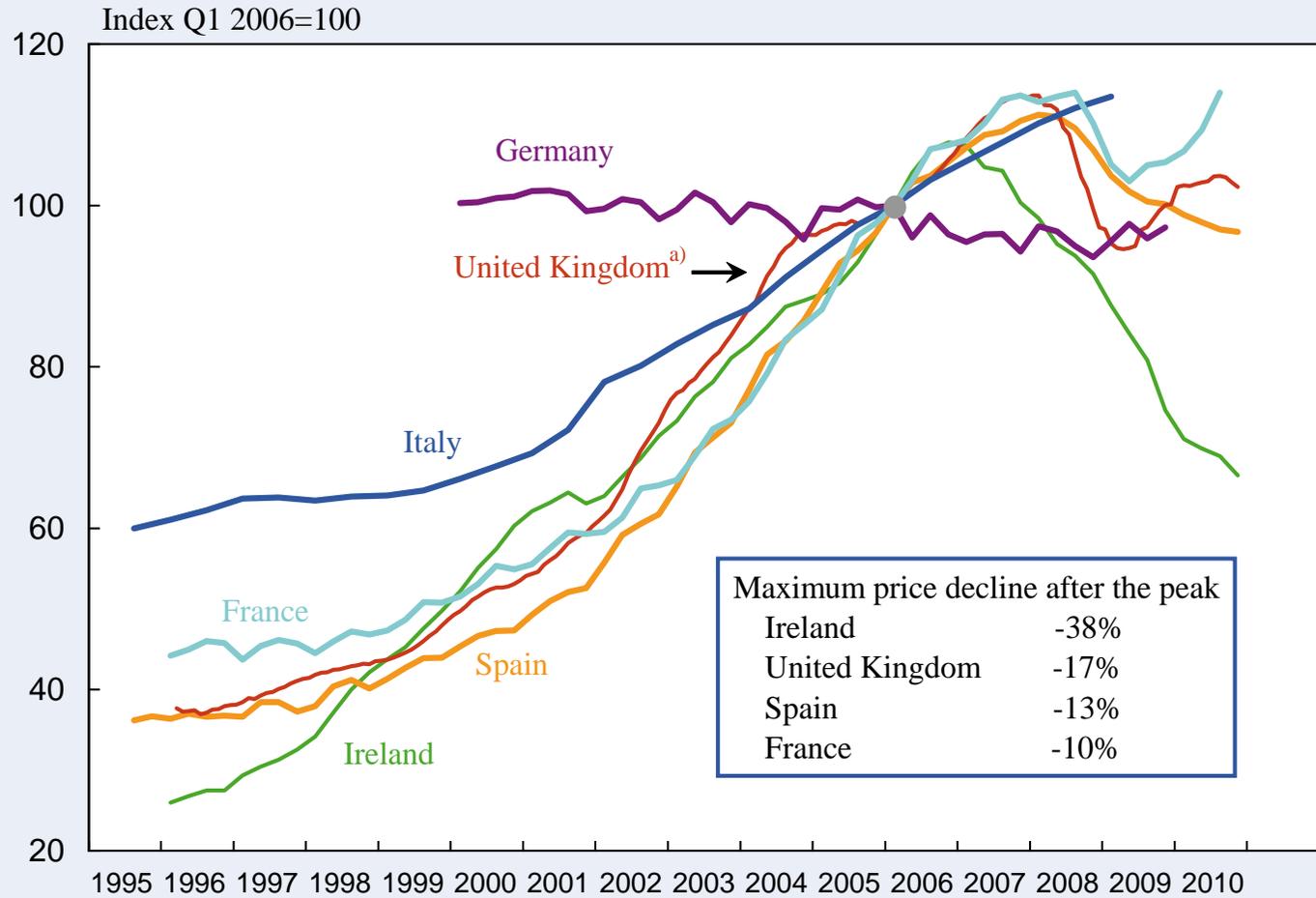


Source: European Central Bank; Consensus Economics Inc.; EEAG calculations and estimates.

Gigantic asymmetric shock when the euro was introduced

- Large interest rate fall in PIGS countries
- Excessive borrowing in the public sector in Greece and Portugal
- Excessive borrowing in the private sector in Ireland and Spain

House prices



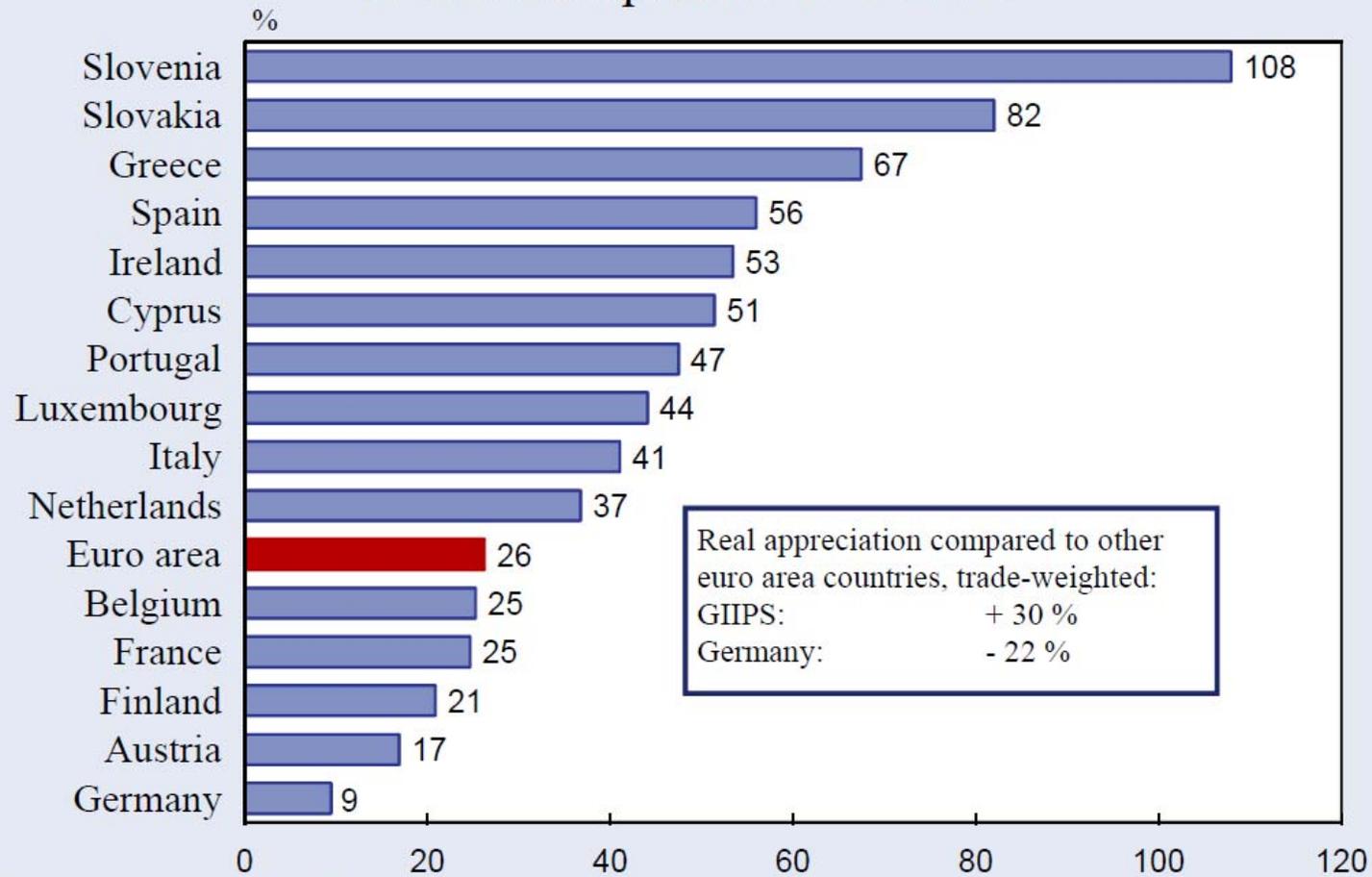
^{a)} England and Wales.

Source: Land Registry, *House Price Index*; The Economic and Social Research Institute; Irish Economy, *Permanent TSB/ESRI House Price Index*; European Central Bank, *Statistical Data Warehouse - Residential property price indicator*; Federal Statistical Office, *GENESIS database* (Wiesbaden 2010); Banca d'Italia, *Statistical Appendix - Economic Bulletin no. 53*, July 2009; INSEE France, loaded with EcoWin, 20 January 2011.

Overheatings before the crisis

	Increase in mortgage debt 1998-2007 (per cent of GDP)	Increase in employment in the building sector 1998-2007 (per cent of total employment)	Real appreciation 1998-2007 (per cent)	Current account deficit (per cent of GDP)
Ireland	46.8	5.6	11.3	5.4
Spain	37.7	3.0	9.6	10.1
Euro area	12.4	0	0	0.7

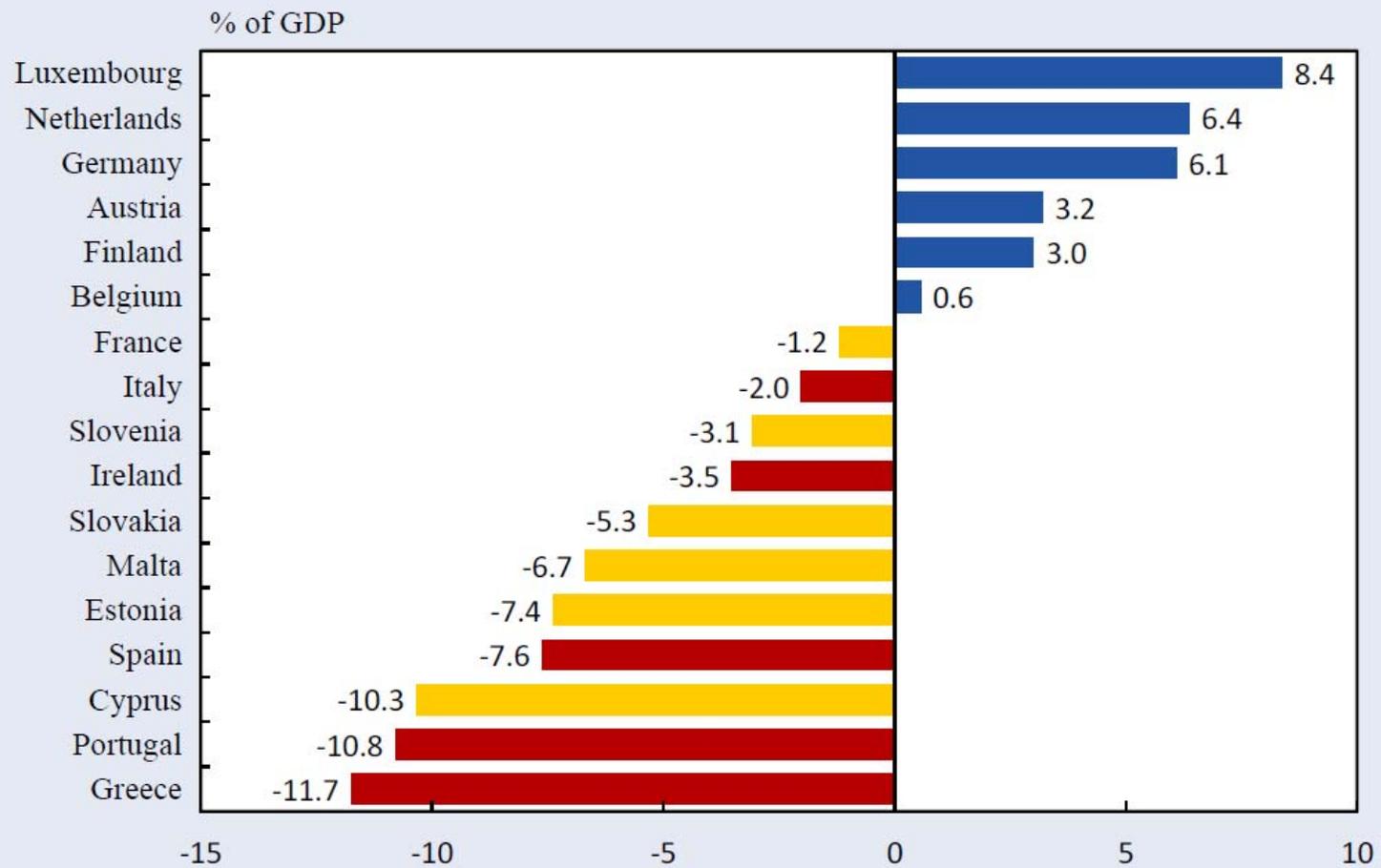
Price developments 1995-2008



Note: Price change and exchange rate realignments (before May 1998).

Source: Eurostat, Database, *Economy and Finance, National accounts, GDP and main components - Price indices*; Ifo Institute calculations.

Current account balances 2005-2010



Source: Eurostat, Ifo Institute calculations.

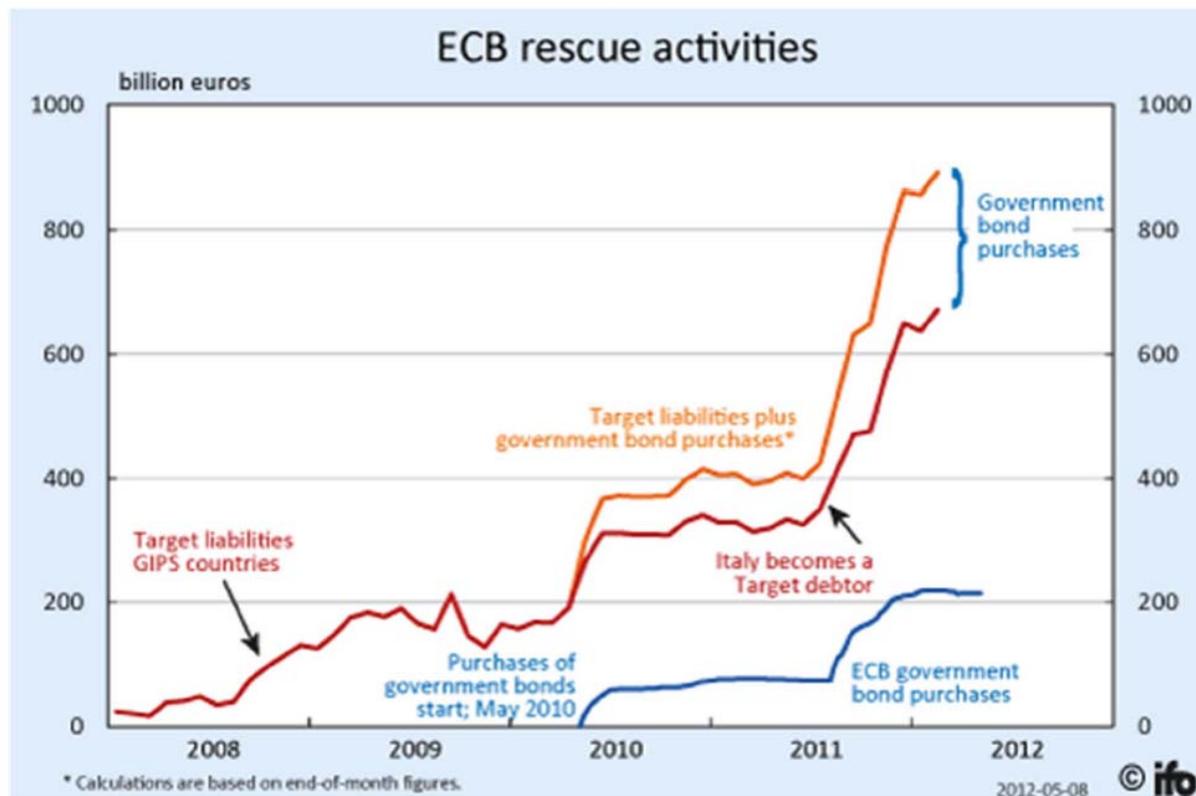
Current government debt crisis in the Euro area

- **Large government budget deficits and rapidly increasing government debt in many Eurozone countries**
- **Acute problems with access to capital markets for Greece, Ireland, Portugal, Spain, Italy and Cyprus.**
- **Financial rescue programmes have been initiated for Greece, Ireland and Portugal. Such programmes are underway for Spain and Cyprus.**
- **Financial assistance is given with strong *conditionality*: aid-receiving countries must implement harsh fiscal austerity programmes involving cuts in government expenditure and tax rises (as well as structural reforms to promote growth in the long run)**
- **Fiscal restraint does improve the budget balance, but improvements are small because fiscal restraint reduces aggregate demand, output and employment with negative repercussions on tax revenues**

Public finances 2011		
	Government net lending (per cent of GDP)	Consolidated government gross debt (per cent of GDP)
Greece	-9,1	165,3
Ireland	-13,1	108,2
Italy	-3,9	120,1
Portugal	-4,2	107,8
Spain	-8,5	69,6
Cyprus	-6,3	71,6
Belgium	-3,7	98,0
France	-5,2	85,8
Germany	-1,0	81,2
Sweden	0,3	38,4

The largest support to the crisis countries has come via the Eurosystem (ECB and national central banks)

- Private capital flow financing the current account deficits of PIGS countries dried up - transfer of liquidity from PIGS countries to Germany
- In a fixed-exchange-rate system the outcome would have been **balance-of-payments crisis** and **devaluations**
- Instead liquidity support from national central banks in PIGS countries (against low-quality collateral)
- National central banks in PIGS countries have acquired debt against ECB in the **Target system**
- Bundesbank has instead acquired claims on ECB in the **Target System**
- ECB purchases of government bonds from crisis countries (Securities Market Programme)
- Now unlimited ECB purchases of government bonds (bills) with up to three years' maturity (Outright Monetary Transactions)



GDP growth (per cent)			
	2010	2011	2012
Greece	-3,5	-6,9	-4,7
Ireland	-0,4	0,7	0,5
Portugal	1,4	-1,6	-3,3
Spain	-0,1	0,7	-1,8
Italy	1,8	0,4	-1,4
Cyprus	1,1	0,5	-0,8
Germany	3,7	3,0	0,7
Eurozone	1,9	1,5	-0,3
Sweden	6,1	3,9	0,3

Unemployment 2012 (per cent)	
Greece	19,7
Ireland	14,3
Portugal	15,5
Spain	24,4
Italy	9,5
Cyprus	9,8
Belgium	7,6
France	10,2
Germany	5,5
Eurozone	11,0
Sweden	7,7

Need for real depreciation in crisis countries

- **Lowering of prices relative to competitors**
- **Not enough with external depreciation of the euro as most of foreign trade is with the rest of the Eurozone**
- **Prices must be reduced relative to the rest of the Eurozone**
- **Need for rise of net exports in order to stimulate growth and increase tax revenues**
- **But without a national currency that can depreciate real depreciations are a time-consuming process which can only be achieved in a situation of high unemployment**

In practice real exchange rates are usually measured as relative unit labour costs (RULC).

ULC = Unit labour cost = Cost per unit produced

ULC = $WL/Q = W/(Q/L)$

W = Wage cost per employee

L = Number of employees

Q = Output

ULC = Total wage costs divided by output = Wage cost/Productivity

Use * to denote foreign variables. Unstarred variables refer to the domestic economy.

E = exchange rate (units of domestic currency per unit of foreign currency)

Then $RULC = ULC/ULC^* = (WL/Q)/(EW^*L^*/Q^*) = E \times (W/W^*) \times (Q^*/L^*)/(Q/L)$.

Change in RULC can be decomposed into three components:

- 1. Change in nominal exchange rate**
- 2. Change in relative wage cost per employee**
- 3. Change in relative productivity per employee**

Within the eurozone $E=1$, so then:

$RULC = ULC/ULC^* = (WL/Q)/(EW^*L^*/Q^*) = (W/W^*) \times (Q^*/L^*)/(Q/L)$.

Grexit with reintroduction of national currency

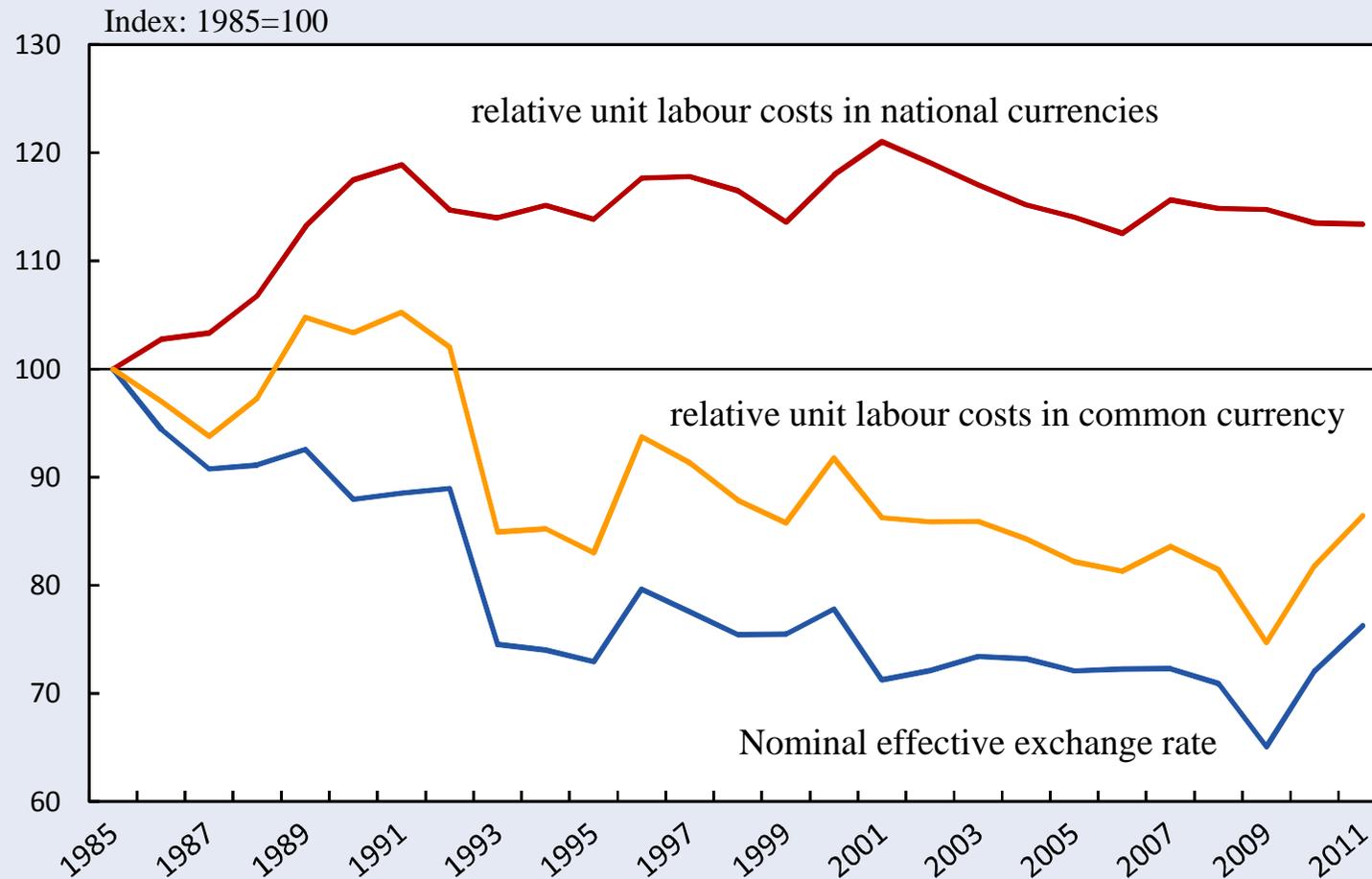
Advantages

- Easier to make real depreciation
- Faster adjustment process

Disadvantages

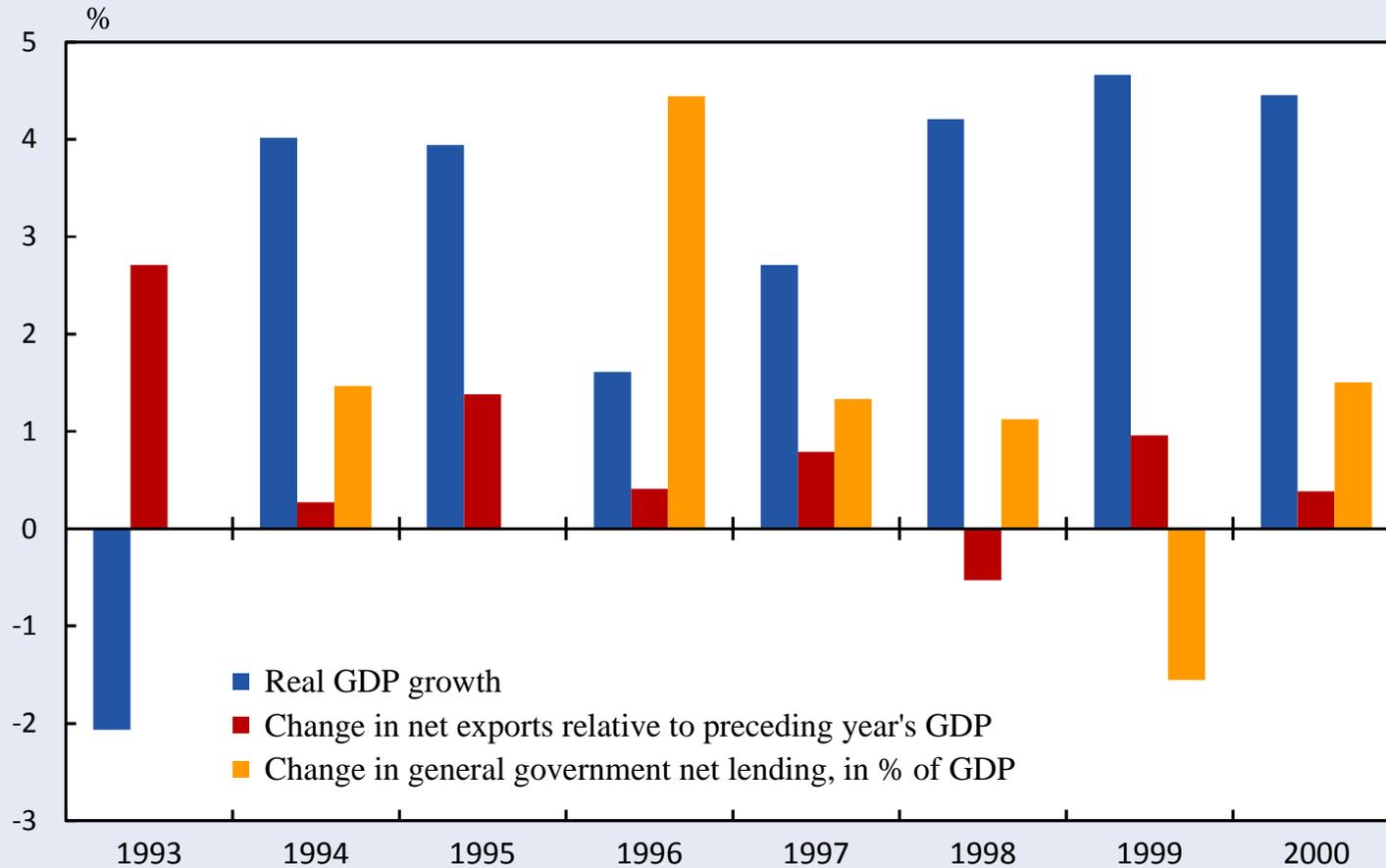
- Technically difficult process
- Bank runs that must be handled with frozen bank accounts and foreign exchange controls
- Deeper crisis in the short run because of increased uncertainty about currency denomination of various contracts
- All internal claims and liabilities under Greek law can be converted into new Greek currency
- But foreign debt under foreign law will still be in euro – rise in value of debt relative to domestic incomes
- Private-sector bankruptcies
- Contagion effects to other eurozone countries
 - Higher interest rates there (because of greater probability of similar developments there – reintroduction of national currency that will fall in value)
 - Bank runs there too

Nominal exchange rate and relative unit labour costs vis-à-vis EU-15 for Sweden



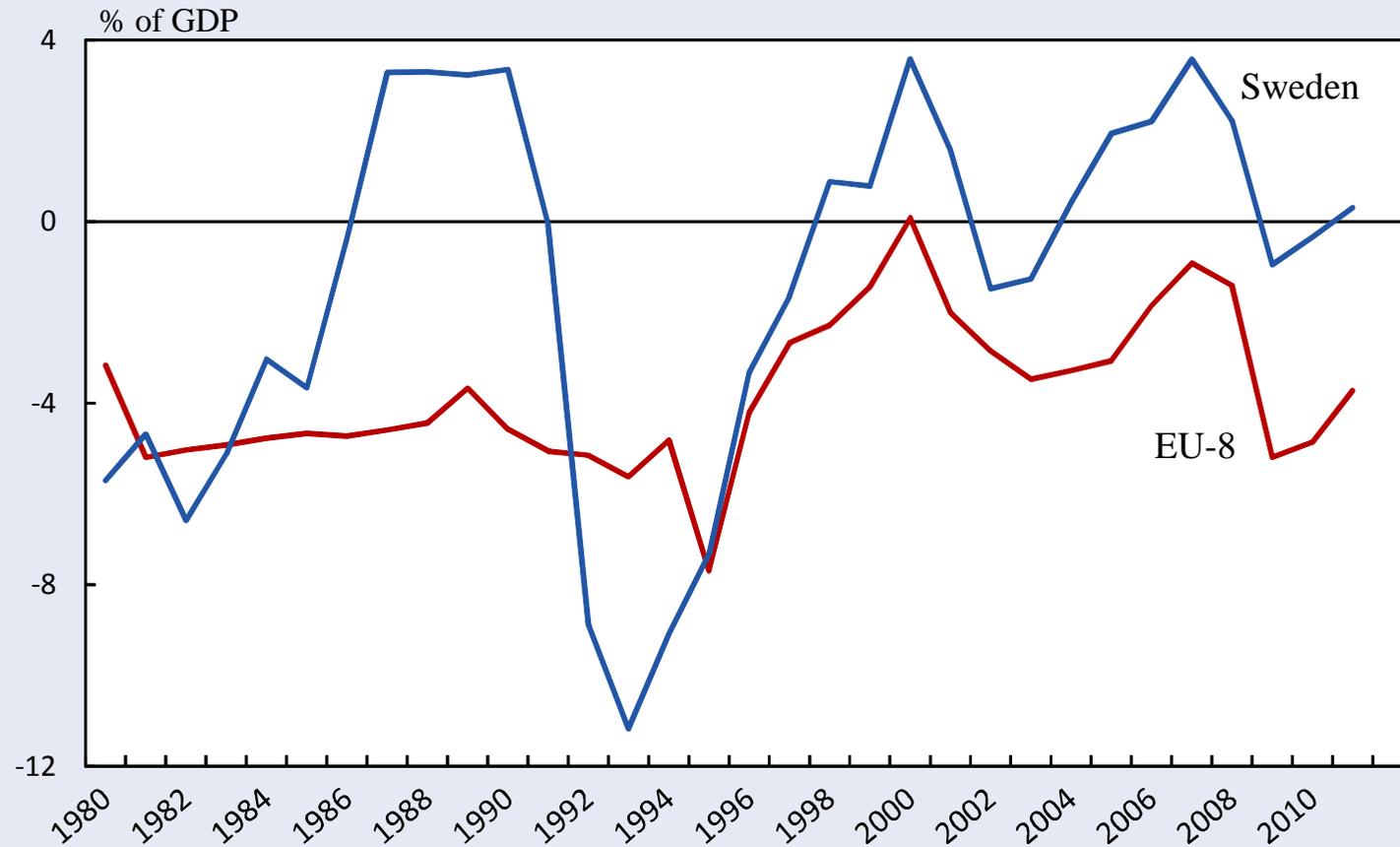
Sources: Ameco and own calculations.

Fiscal consolidation, GDP growth and change in net exports in Sweden, 1993-2000



Sources: Ameco and own calculations.

General government net lending in Sweden and the euro area



Note: EU-8 is a weighted average for Austria, Belgium, Finland, France, (West) Germany, Italy, the Netherlands and Portugal.

Sources: OECD Economic Outlook No. 89 (Sweden); and Ameco and own calculations (EU-8).

**Cumulative change 2009-2011 relative to Euro area
(absolute values in paranthesis)**

	Relative wage cost	Relative productivity	Relative unit labour cost
Greece	-8,1 (-2,3)	-5,8 (-4,5)	-2,3
Ireland	-10,4 (-4,6)	7,2 (8,5)	-17,6
Italy	-0,1 (5,7)	-1,0 (0,3)	0,9
Portugal	-0,7 (5,1)	1,0 (2,3)	1,7
Spain	-0,6 (5,2)	6,1 (7,4)	-6,7

Factors that determine the magnitude of stabilisation policy costs of a common currency

- **Extent of trade**
 - **Rose & Frenkel: more trade means that cyclical shocks are transmitted among countries to a larger extent and increases the synchronisation of business cycles among countries: common shocks thus become more frequent**
 - **Krugman: more trade causes more specialisation and therefore imply less synchronisation of business cycles across countries if shocks are sector specific**
 - **much stronger empirical support for the first hypothesis**
- **How diversified is the economy?**
 - **a well diversified economy reduces the impact on the economy of sectoral shocks**
- **Mobility of labour between countries**
 - **unemployed in one country can move to a country with excess demand for labour**
 - **prime example: Ireland (but also Spain)**

Factors that determine the magnitude of stabilisation policy costs of a common currency (cont.)

- **To what extent can the real exchange rate, $q = EP^*/P$, change through relative price changes (in P/P^*) instead of through nominal exchange rate changes (in E)?**
 - **the scope for relative price changes is determined by the flexibility of nominal wages**
 - **in the case of an asymmetric recession nominal wages must fall relative to other eurozone countries if the real exchange rate is to depreciate**
 - **strong resistance to reductions of the *nominal wage level***
 - **adjustments through nominal wage restraint worked in Germany but not in Italy**

- **National fiscal policy instead of national monetary policy**
 - **but fiscal policy is a less appropriate stabilisation policy tool (longer decision lags, distributional concerns in addition to stabilisation motives, risks of too large budget deficits as is the current problem)**

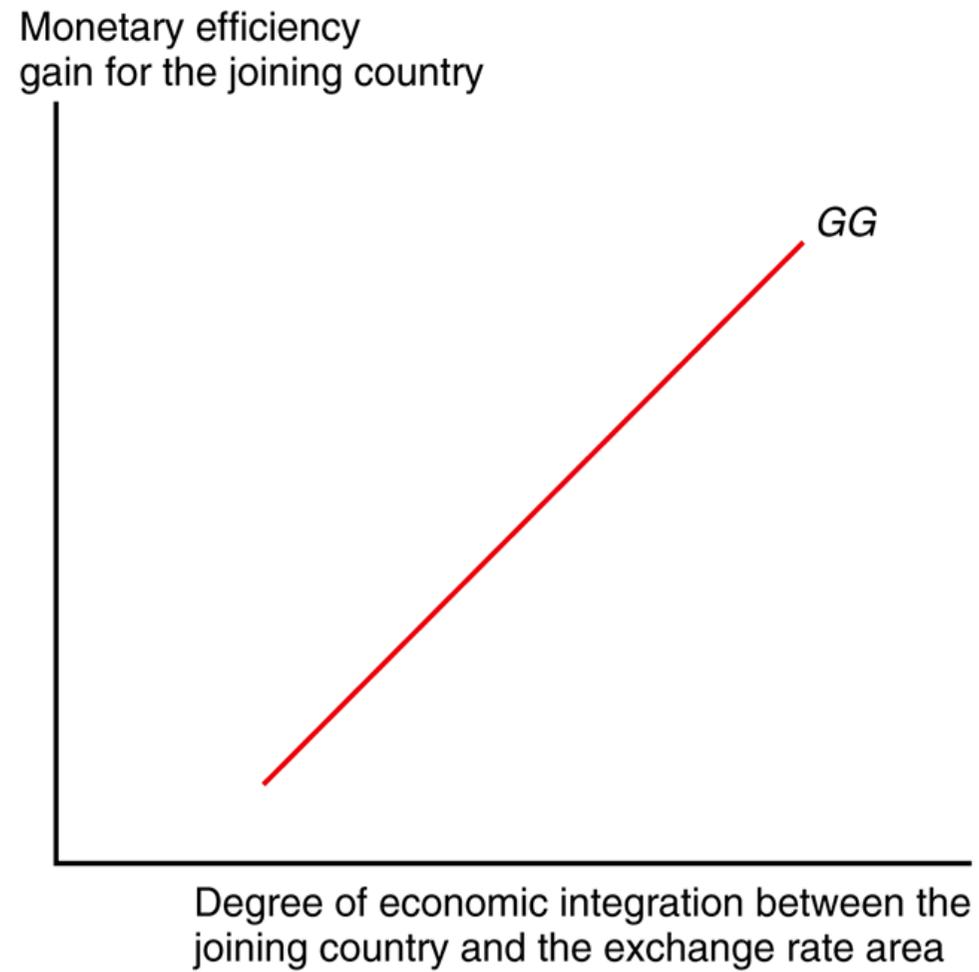
**Factors that determine the magnitude of stabilisation
policy costs of a common currency (cont.)**

- **Fiscal transfers from other EMU members**
 - **fiscal federalism**
 - **other "currency areas" (large countries like the US and Canada) have a large federal budget which works like an automatic stabiliser (20 – 40 % dampening of cyclical swings in output)**
 - **the EU budget (around 1.1 % of GDP) is too small to be an automatic stabiliser and its composition makes it unsuitable for that purpose (agricultural and regional support)**
 - **Need for discretionary rescue programmes like the loans from the current rescue funds (EFSF and ESM)**

The theory of Optimal Currency Areas (cont.)

- **Costs and benefits for countries deciding whether to join a monetary union**
- **Monetary efficiency gain: eliminate exchange rate uncertainty and international transaction costs involved in floating exchange rates (the GG-schedule)**
- **Economic stability loss: loss of independent monetary policy, ability to stabilise the economy limited with a common currency (the LL-schedule)**

Fig. 20-3: The GG Schedule



Stabilisation policy cost and the degree of integration

More integration tends to reduce the stabilisation policy cost

- **Larger labour mobility**
- **With a larger volume of trade, a given effect on domestic GDP can be achieved via a smaller change in the real exchange rate**
- **Larger trade means that a nominal exchange rate depreciation is a less efficient means of depreciating the real exchange rate:**
 - **if imports have a large weight in the CPI, the import price rises following from a nominal depreciation cause large rises in the CPI and are likely to trigger large compensating wage increases that increase domestic producer prices: if so a nominal depreciation has only a small effect on the real exchange rate**
 - **$q = EP^*/P$. Both $E \uparrow$ and $P \uparrow$.**

Fig. 20-4: The *LL* Schedule

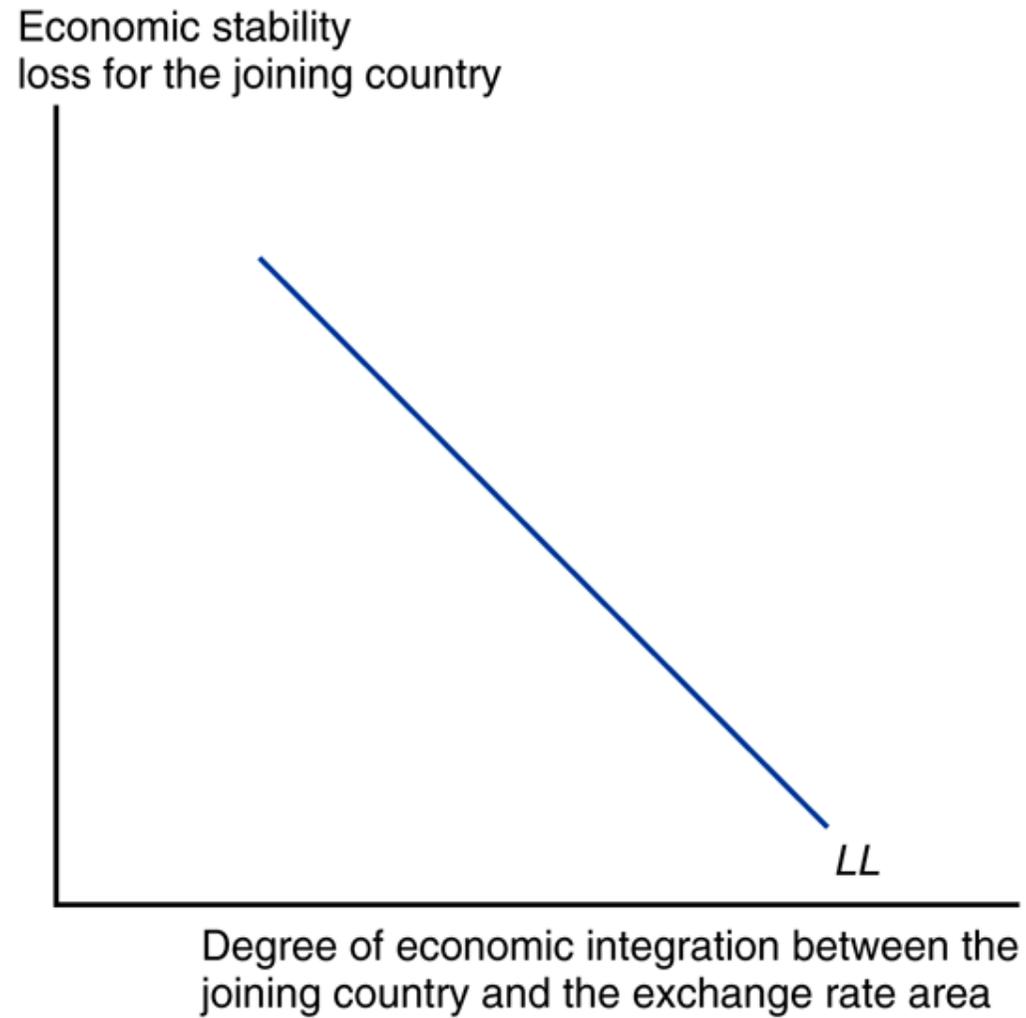


Fig. 20-5: Deciding When to Join a Monetary Union

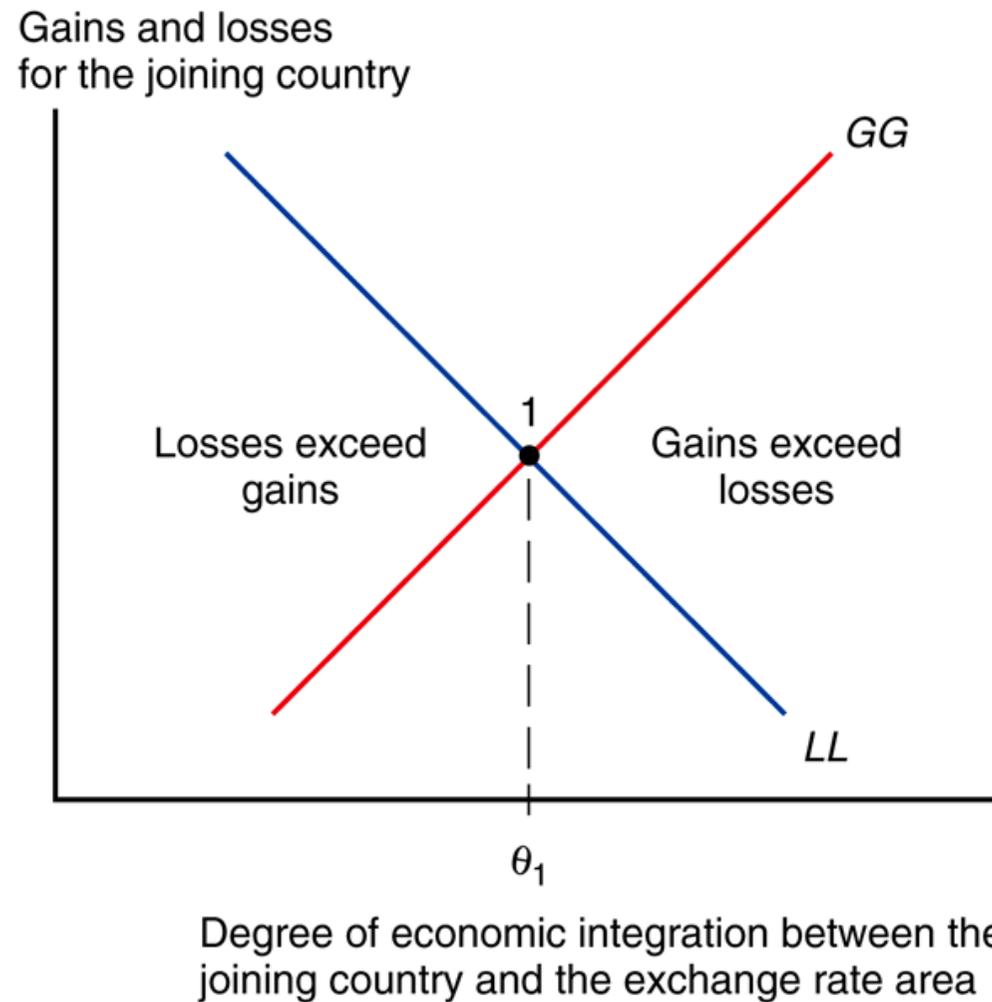
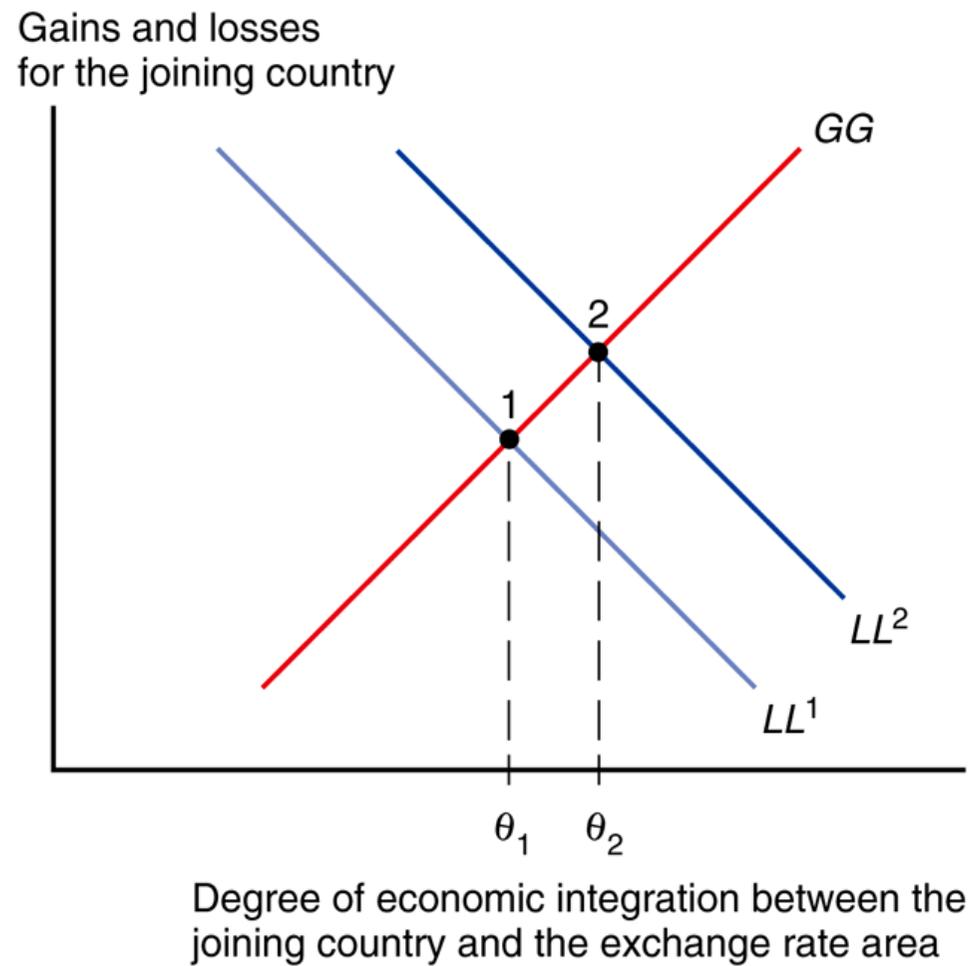


Fig. 20-6: An Increase in Output Market Variability



Sweden and the EMU? – the Calmfors Commission in 1996

- **No in the short term, yes in the long term**
- **Stabilisation policy costs were deemed to be large**
 - **high unemployment in the wake of the 1990s crisis: awkward if new asymmetric shocks would raise unemployment further, thus need for own monetary policy**
 - **fiscal policy could not be used to raise aggregate demand in recession because of large public debt: unconditional fiscal consolidation was judged to be necessary**
- **Trade effects deemed to be small**

Evaluation today

- **Lower stabilisation policy costs than in the 1990s**
 - **employment rose again (but is now falling)**
 - **fiscal consolidation has reduced government debt:**
larger scope to use fiscal policy to raise aggregate demand in recession
- **New research has found larger trade effects than believed earlier**
- **We have been helped by exchange rate depreciations in international downturns (symmetric shocks)**
 - **Asian crisis (late 1990s)**
 - **bursting of IT bubble (early 2000s)**
 - **global crisis 2008-10**
 - **but currently strong appreciation of the Swedish krona**
- **Uncertainty regarding size of fiscal transfers in the euro area**
- **Great uncertainty regarding how future cooperation and integration in the Eurozone will develop (how far will joint decision-making regarding fiscal and other policies develop?)**
- **Not clear that the euro will survive**

Växelkurser

Kronor per valutaenhet, månadsvärden



Kronans effektiva växelkurs - KIX

Index 1992-11-18=100, månadsvärden

