

How likely are asymmetric shocks
to happen?

Various sources of asymmetry

- Different productive structures
- Different market structures and functioning
 - Different labour market institutions
 - Centralized versus non-centralized wage bargaining
 - Symmetric shocks (e.g. oil shocks) are transmitted differently when institutions differ across countries
 - Different legal systems
 - These lead to different transmission of symmetric shocks (e.g. interest rate change from the CB)
 - Anglo-Saxon versus continental European financial markets
- Different economic policies

1. Different productive structures

How likely is that a demand shock is at the national level?

MU may exacerbate or reduce existing differences

There exist two views

- Optimistic view:
 - The trade is based on the existence of economies of scale and imperfect competition (product differentiation).
 - It leads to a structure of trade in which countries buy and sell to each other the same categories of products.
 - **Intra-industry trade** leads to similar specialization patterns and most demand shocks will affect these countries in a similar way
 - Integration leads to more equal economic structures and less asymmetric shocks
- Pessimistic view:
 - **Economies of scale** lead to agglomeration effects and clustering
 - Integration leads to more asymmetric shocks

TABLE 2.1 Regional distribution of auto production

USA	%	EU	%
Midwest	66.3	Germany	38.4
South	25.4	France	31.1
West	5.1	Italy	17.6
North-east	3.2	UK	12.9

Source: [Krugman \(1991\)](#).

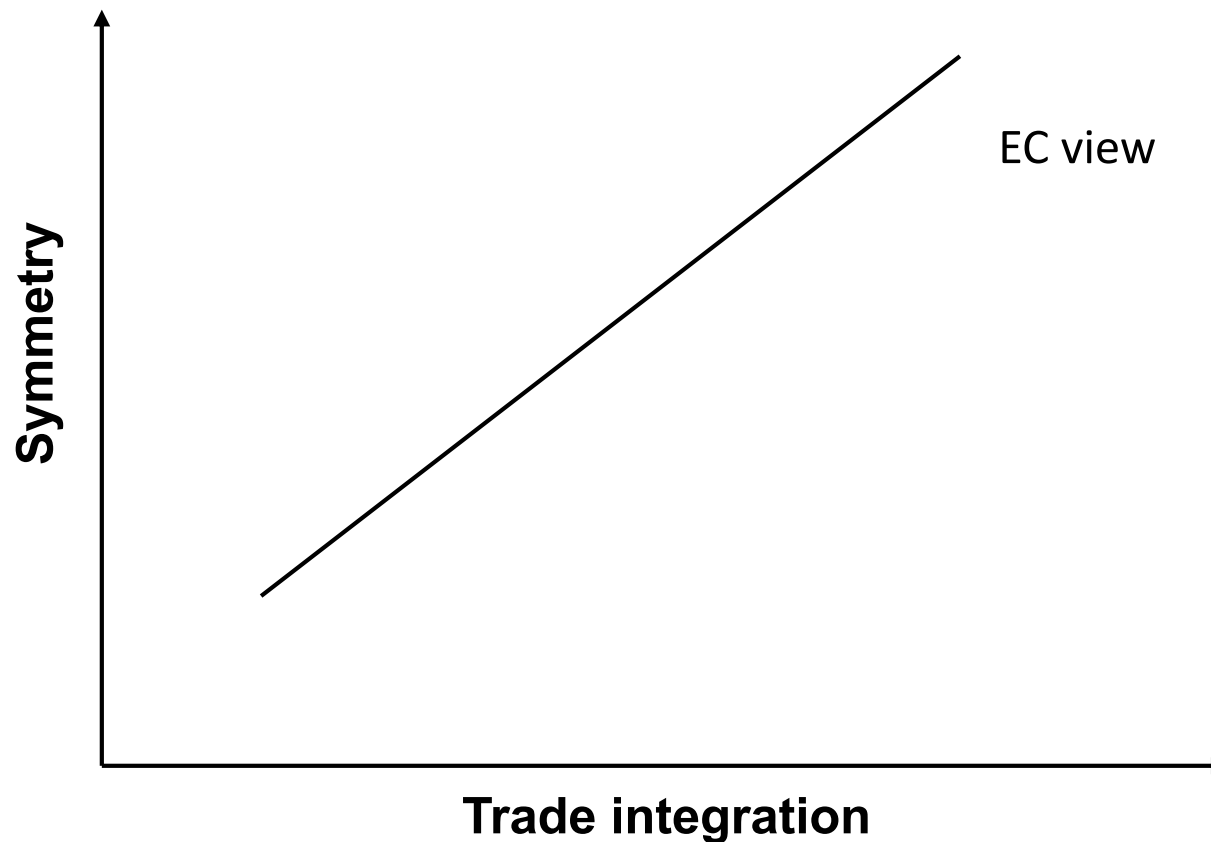
US market is more highly integrated than the EU market, i.e. there are fewer impediments to trade in the USA than in the EU.

The evidence about concentration patterns therefore suggests that when the EU moves forward in the direction of a truly integrated market, it may experience similar kinds of regional concentrations of economic activities to those observed in the USA today.

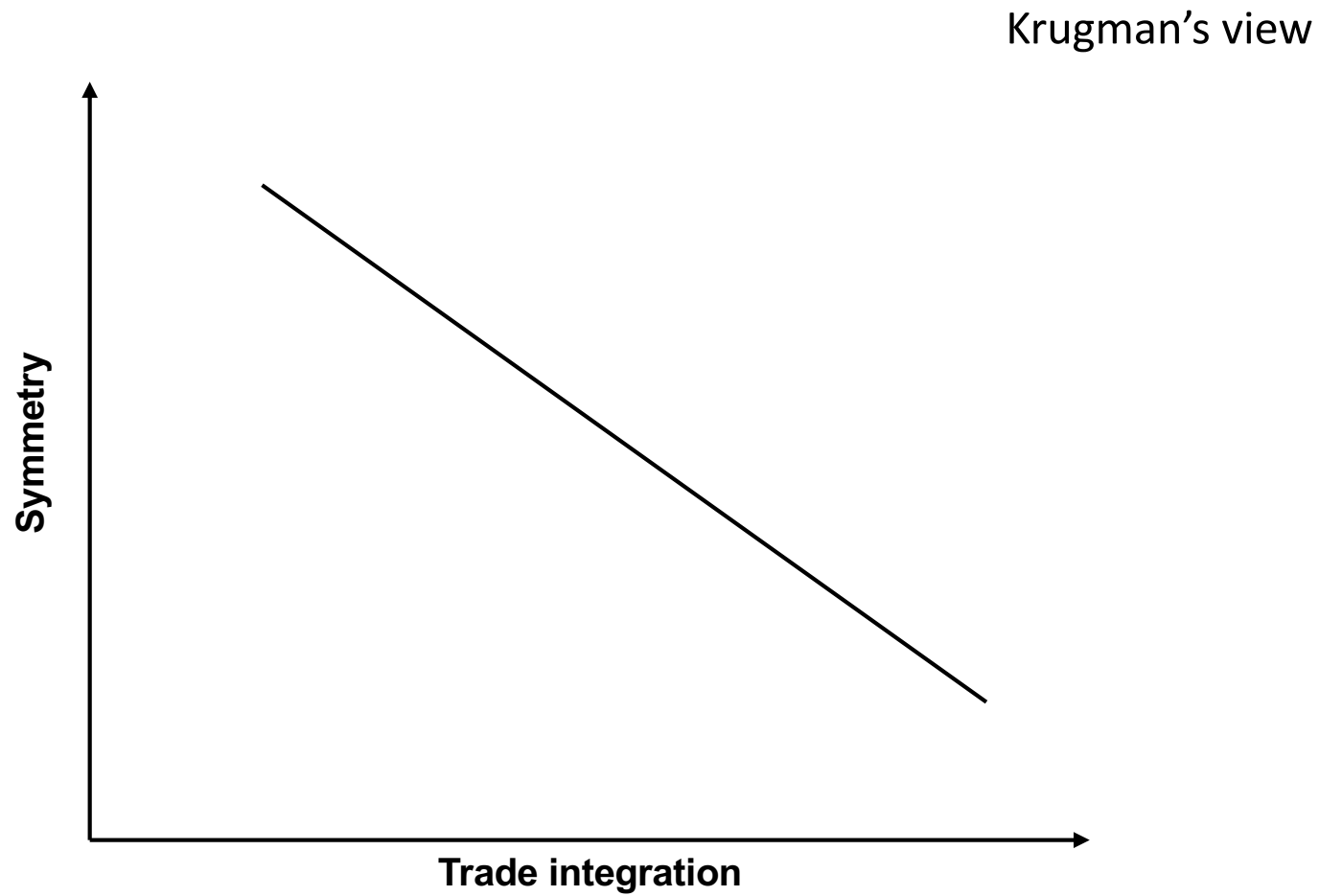
The European Commission view

How is **symmetry** measured?

degree of **statistical correlation** between economic activity
(eg: co-movements between GDP and/or employment)



The Krugman view



- Which view is likely to prevail?
 - A little bit of both
 - But even if pessimistic view prevails, agglomeration effects will be blind to national borders
 - **Industrial agglomerations cut across countries**
 - Then asymmetric shocks cannot be dealt with by national monetary policies
 - Empirical evidence
 - Rose (2000) and others favour optimistic view: panel data analysis, many countries, controlling for other variables, being part of a MU doubles trade flows between members.
 - More recent estimates: trade flows rise between 5% and 20% increase.
 - Intensity of trade is positively correlated with correlations of economic activity
 - **Role of services**: they are increasingly important, and less subject to economies of scale

2. Institutional differences in the labour market

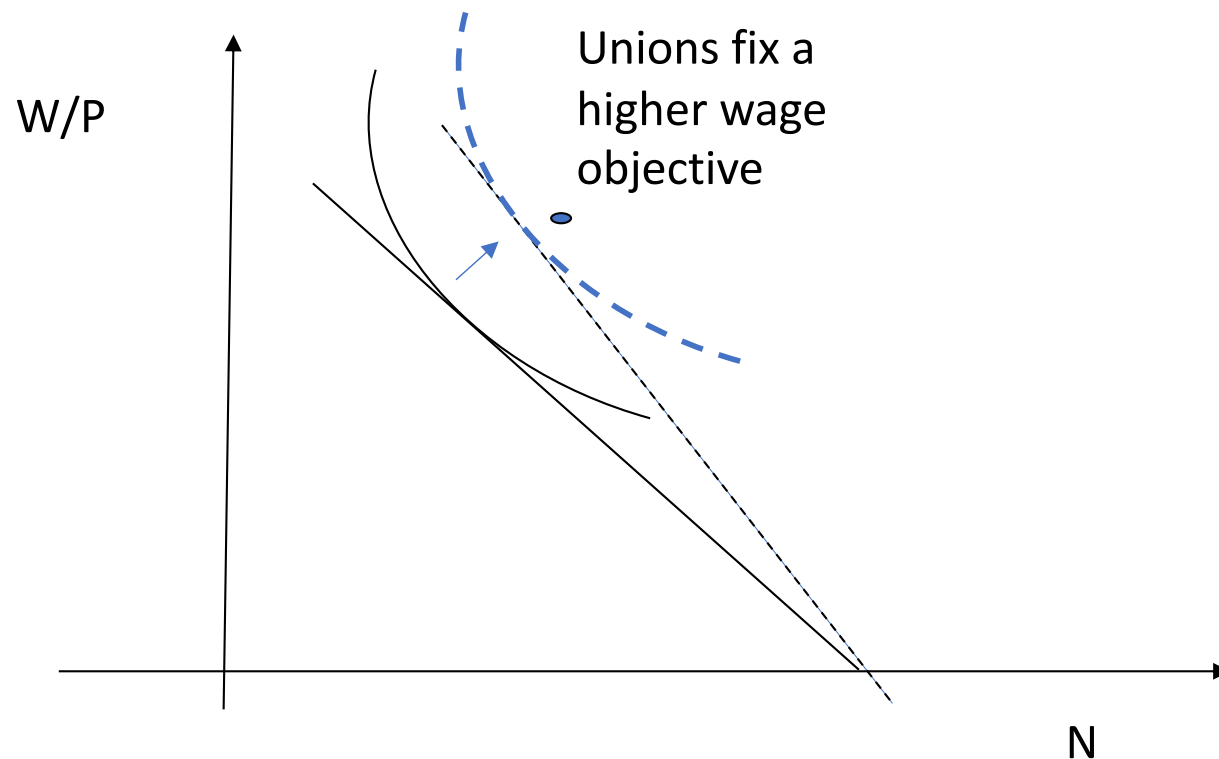
Institutional differences in labour markets create **asymmetries in the transmission of shocks**

- Some of these differences disappear in the monetary union
 - Monetary union puts pressure on trade unions claims
- Other differences will remain in place
 - EPL (Employment protection legislation)
 - Unemployment benefits
 - Active labour market policies
 - Labour taxes

2. Institutional differences in the labour market

- Some of these differences disappear in the monetary union
 - Monetary union puts pressure on trade unions claims.
 - HOW? Use Mc-Donald and Solow Model (1981) – Trade unions and bargaining
- Unions' preferences (the indifference curve: give a weight to wage growth and employment growth)
- Suppose Authorities give greater weight to employment than Unions do; then they react to a too low employment, due to high wage claims, by using expansionary policy to create new jobs and keep unemployment low.
- So, Authorities preferences affect the economy labour demand curve
- If this reaction is accounted for by the Unions, their wage claims will stay high and the final labour demand will be steeper

Use the McDonald e Solow model of monopoly Union.
The indifference curve represents the Unions' utility function and the tangency point with the employment curve the optimal solution



The economy labour demand (or employment curve for the whole economy) becomes steeper if Authorities give higher weight to employment than Unions do. The aggregate employment curve is steeper if employment level is less responsive to wage increase

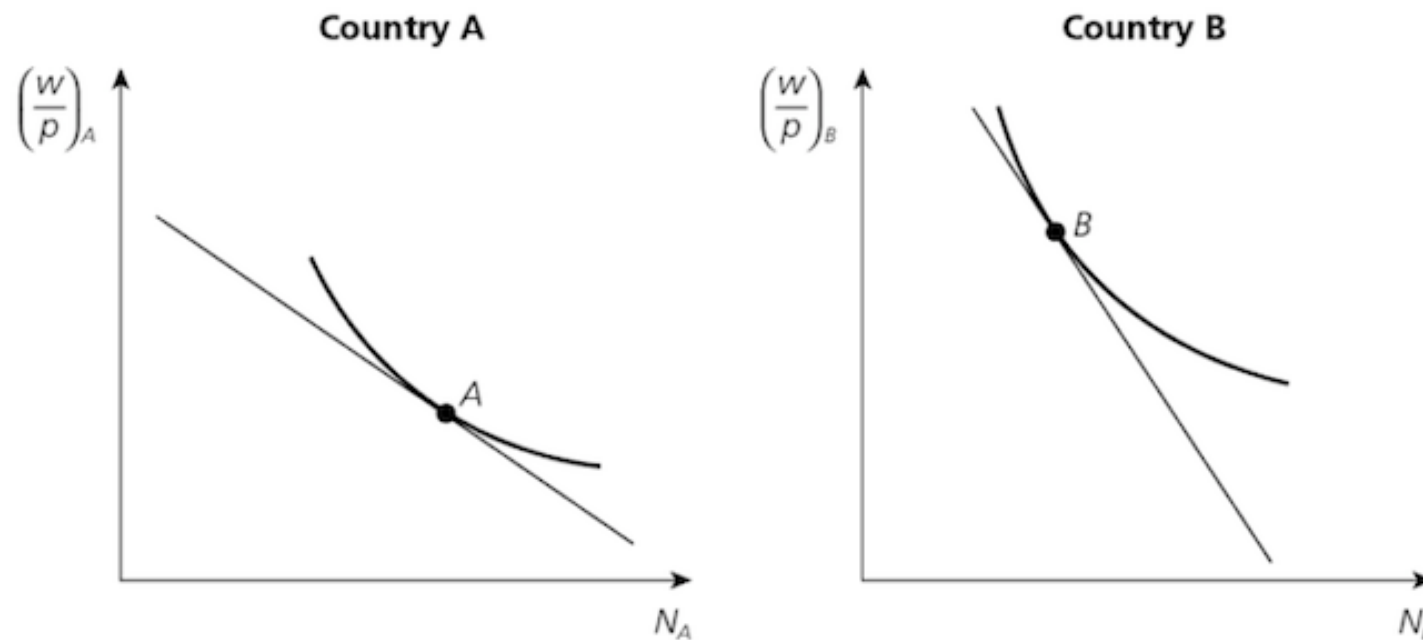


Figure 2.3 The Solow-McDonald model in two countries.

Two countries may enter the MU with different aggregate employment curves. The steeper, the less increases in wage affect employment.

In a MU monetary authorities are not independent and cannot react with expansionary monetary policy → these differences tend to disappear. Fiscal authorities however may still behave differently, supporting employment even in face of wage increases larger than productivity growth

- Other differences will remain in place
 - Extent of public employment
 - Normative differences concerning:
 - EPL (Employment Protection Legislation)
 - Unemployment benefits
 - Active labour market policies
 - Labour taxes
- A symmetric shock can propagate differently and become asymmetric depending on labour market institutions

3. Different legal systems and financial markets

- Financial markets continue to work differently across the EU, creating the risk that the same monetary shocks are transmitted very differently.
- This is mainly due to different legal systems in the member states. Legal systems remain very different creating 'deep' differences in financial systems
 - Cfr. Difference between Anglo-Saxon and Continental European financing of firms and between Continental and Mediterranean relative to bank-firm relationship
- Taxes on financial and housing wealth
- Incentive/disincentives wrt housing property
- Mortgage rules

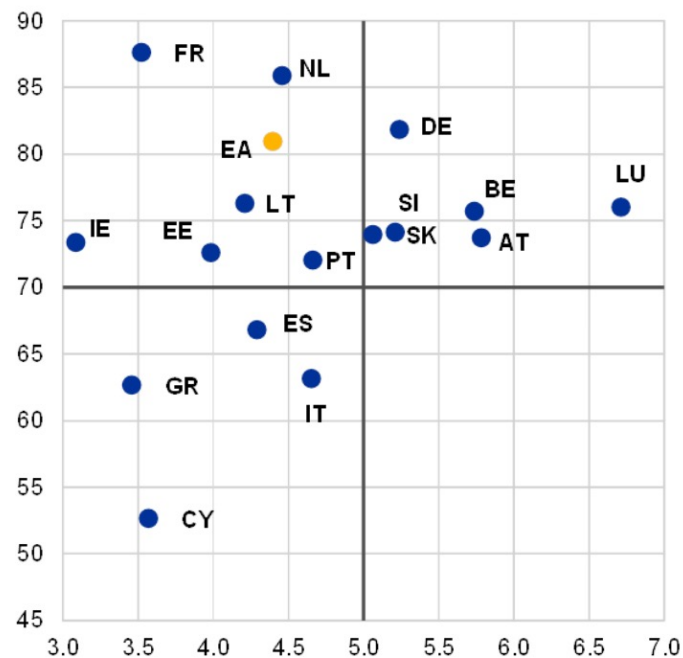
Examples: LTV and LTI in EZ

Chart A.2

Lending standards and their dynamics differ widely across euro area countries

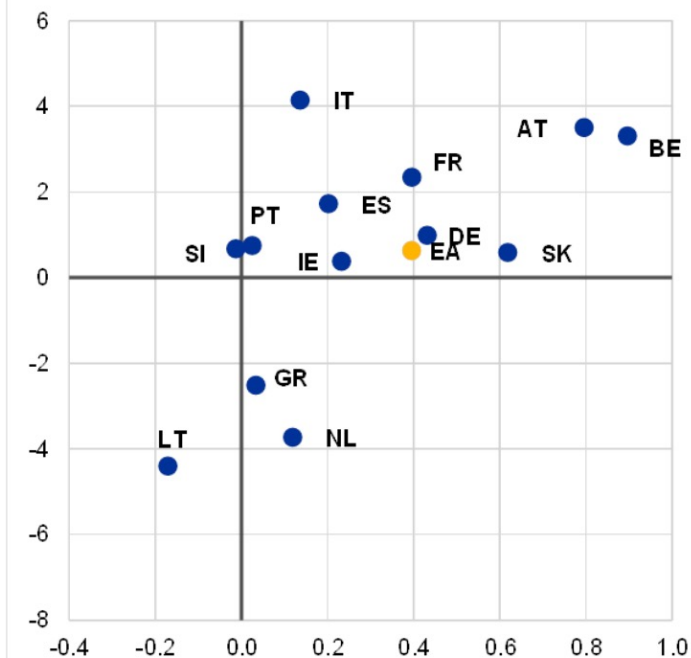
Average LTV and LTI ratios across countries over the period 2016-2018

(y-axis: average LTV ratio in %; x-axis: average LTI ratio as a multiple)



Changes in average LTV and LTI ratios in the 2016-18 period

(y-axis: p.p. change in LTV ratio; x-axis: p.p. change in LTI ratio)



Source: SSM credit underwriting data collection exercise in 2019.

Not all the differences in the workings of financial markets, however, are due to different legal systems. Some of them have arisen over time because countries followed different monetary policies.

Example: inflation and bond maturity

TABLE 2.2 Maturity distribution of government bonds (% of total), 1998

	Short term (<1 year)	Medium and long term (>1 year)	Of which long term (>5 years)
Italy	49.4	50.6	24.8
Germany	18.5	81.5	–
Netherlands	6.7	93.3	63.0

Source: [OECD \(1999b\)](#).

Before the MU, the different inflation levels called for different maturities of government debt. The higher the inflation, the shorter the debt maturity and the higher the deficit reaction to changes in the interest rate.

This imposed a high dependence of deficit and debt on inflation.

The differences in the distribution of debt by maturity declines in the MU

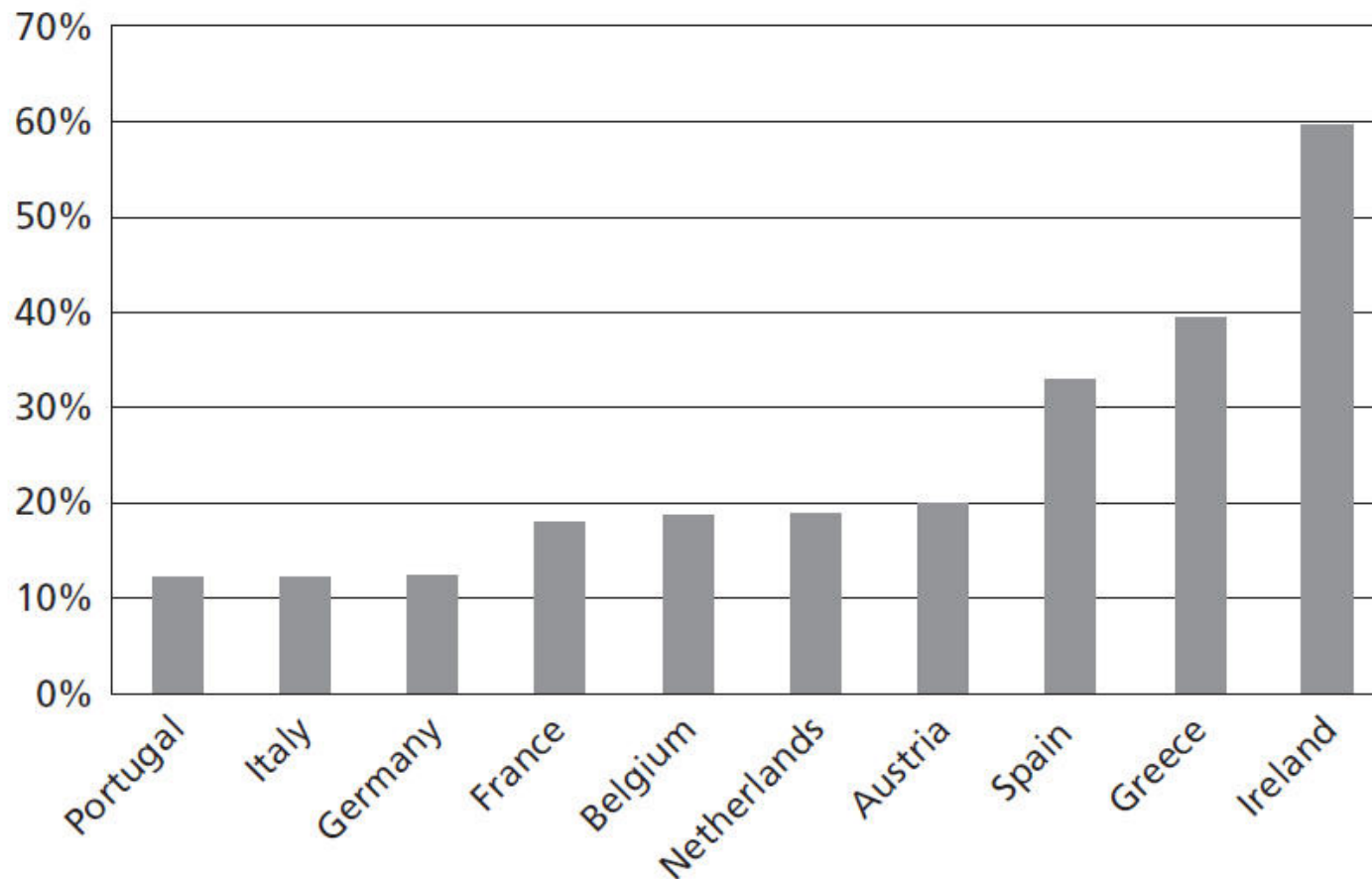
4. Asymmetric shocks and the nation-state

- Existence of nation-states is a source of asymmetric shocks
 - Taxation and spending remains in realm of national sovereignty
 - Social policies are national
 - Wage policies
- These differences can lead to very strong divergences in growth of economic activity in member countries
- Some shocks are therefore the result of endogenous booms and busts
- These have continued to work and to lead to great divergences in economic trends

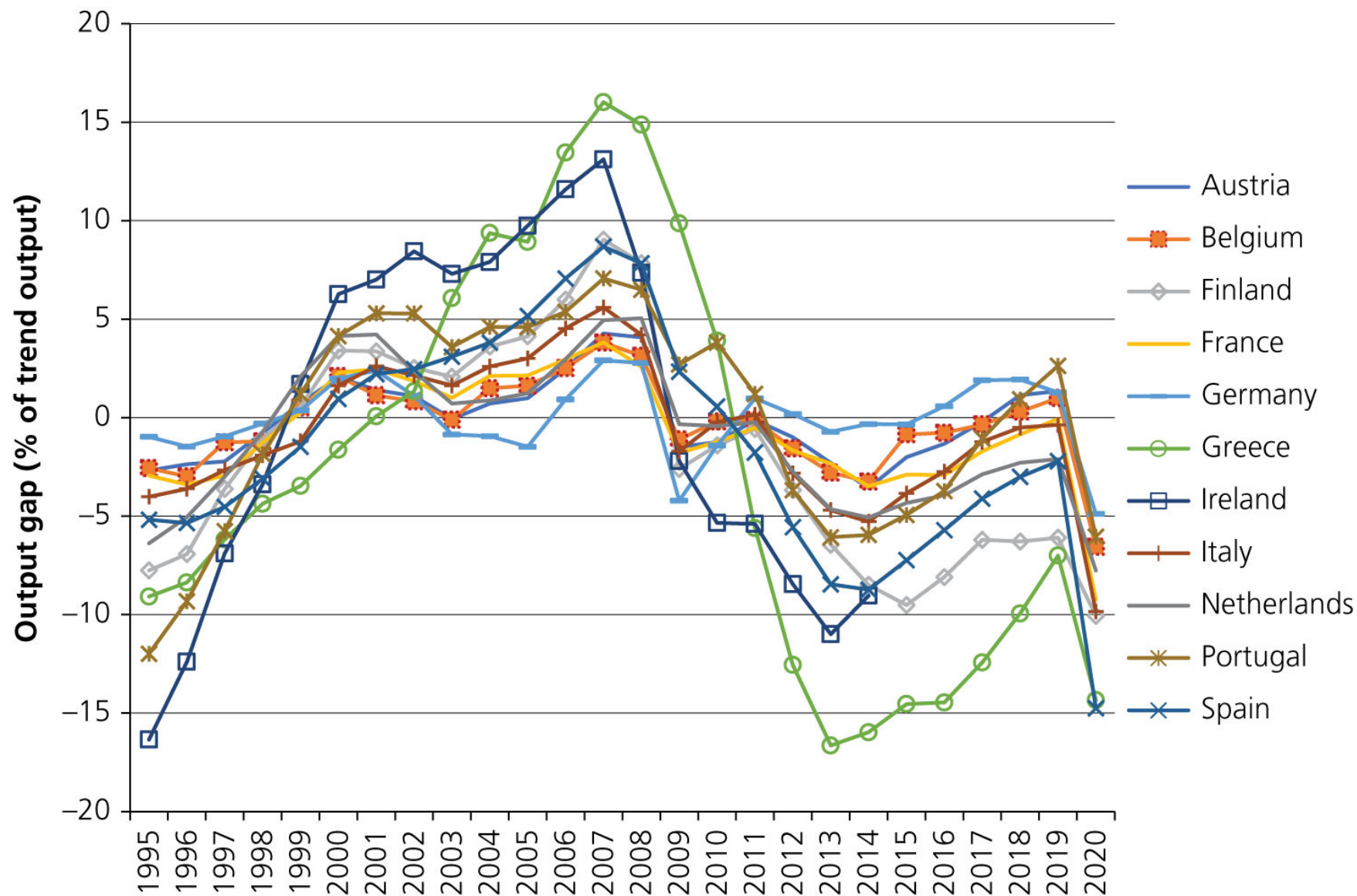
Divergence in growth prior to financial crisis

Fig. 2.4 Cumulative growth of GDP (1999–2007).

Source: European Commission, AMECO databank.



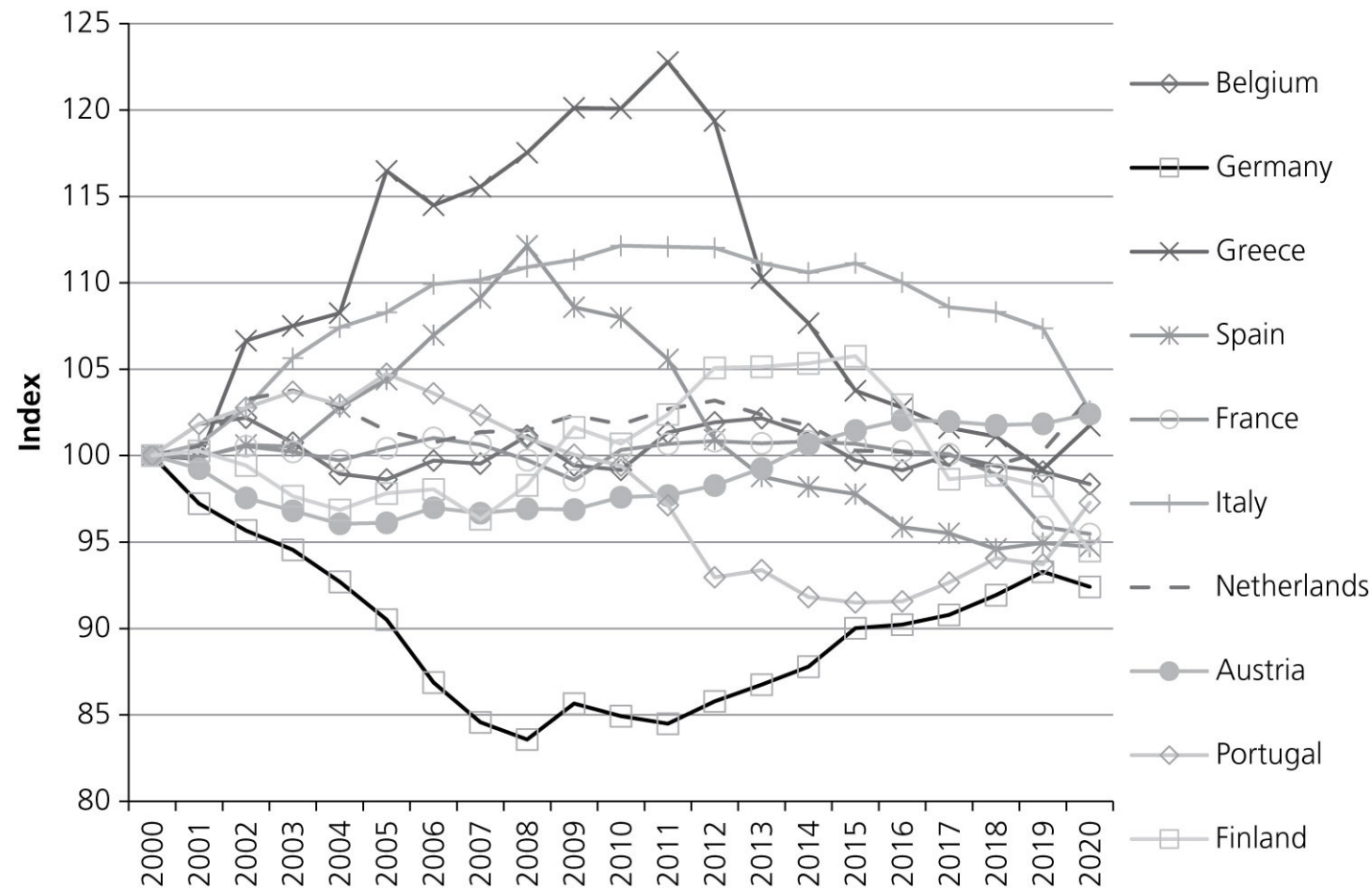
Business cycle component of the GDP



- Business cycles have been synchronized.
- Asymmetries have been in the amplitude of these business cycles.
 - Periphery countries experienced strong booms followed by deep recessions.
 - This is less pronounced in core countries.
- Effects of these asymmetries:
 - periphery countries experienced strong increases in wages during boom; most was not supported by increases in productivity, which meant loss of competitiveness.
 - Remember: price determination → competitiveness

These lead to divergences in competitive positions

Relative unit labour costs in the Eurozone countries (2000–18).



Source: European Commission, AMECO databank.

Conclusion on effect of integration

- Economic integration can produce economic structures that lead to more convergence.
- However, the continued existence of the nation states can set in motion macroeconomic dynamics in monetary unions that lead to strong divergences.
- Thus, despite the fact that at the **microeconomic level trade integration** may lead to less asymmetric shocks, the **absence of a political union** may set in motion **macroeconomic dynamics leading to large asymmetric shocks**.
- There is therefore a need to embed a monetary union in a stronger **political union**.

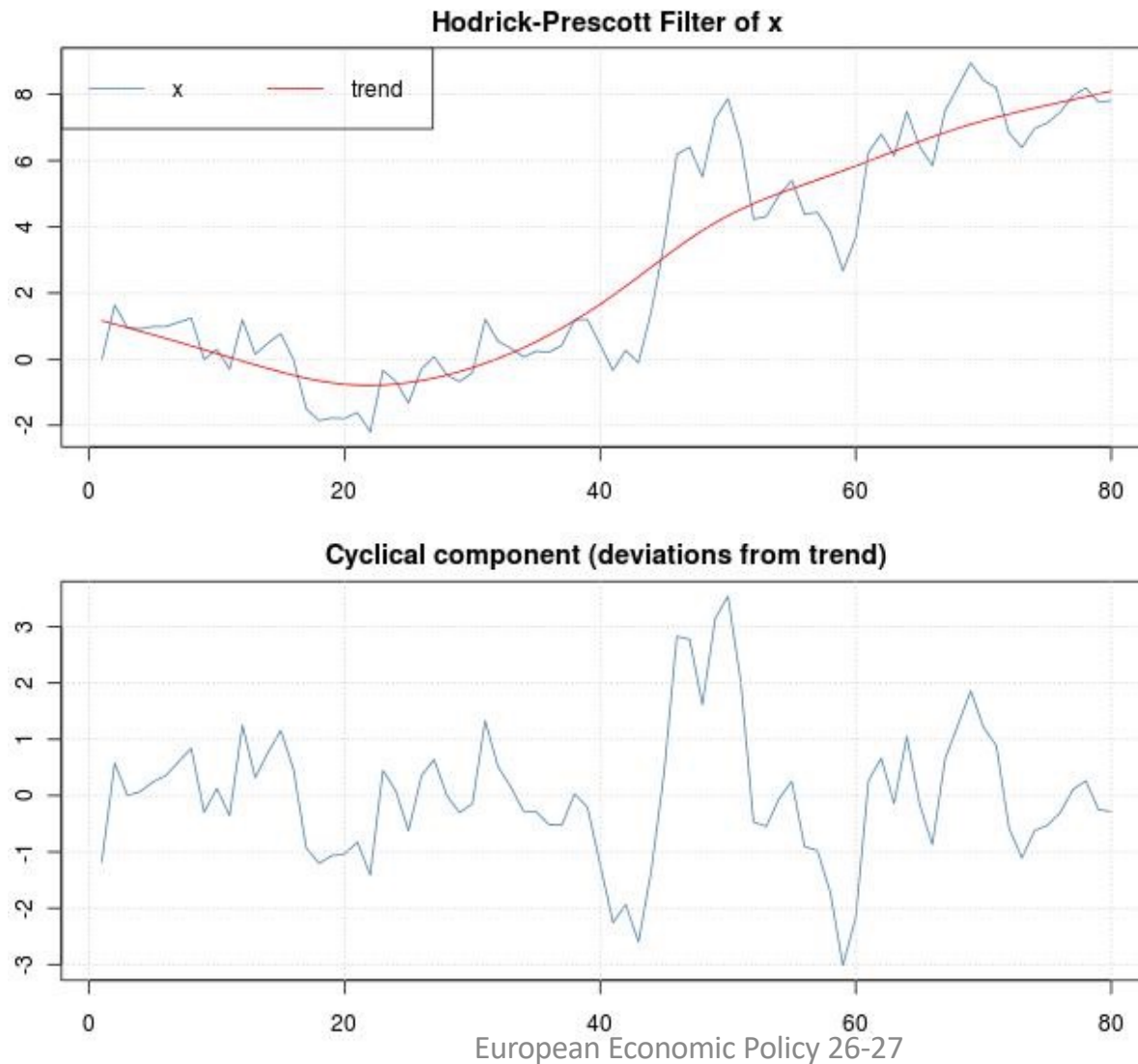
Co-movements of the business cycles across EU member states

Empirical evidence about nature of shocks

- Compute trend and cyclical components of GDP of each Eurozone member country using Hodrick-Prescott-filter (HP)
- Use these components to obtain information on:
 - Extent of cycle synchronization: compute cross-country correlations of cyclical components
 - Relative variance of cyclical and trend component

Example of HP

HP filter: a mathematical tool to decompose trend from cyclical component:
 $y(t) = \text{trend}(t) + \text{cycle}(t) + \text{residual}(t)$



On HP filter: a trend removing technique

- Given T observations on a variable y_t , Hodrick and Prescott (1981, 1997) propose interpreting the trend component g_t as a very smooth series that does not differ too much from the observed y_t
- The smoothness of the implicit trend is governed by the smoothness penalty λ .
- When $\lambda \rightarrow 0$, g_t would just be the series y_t itself, whereas when $\lambda \rightarrow \infty$ g_t is a linear time trend.
- The common practice is to use a value of $\lambda = 1600$ for quarterly time series.

- See HP do file

Mean (absolute) trend growth and mean (absolute) business cycle change in GDP (in percent) during 1999-2014

	Mean cycle	Mean trend	ratio
Austria	1,79%	1,77%	1,01
Belgium	1,72%	1,67%	1,03
Germany	1,55%	1,23%	1,26
France	2,15%	1,49%	1,44
Netherlands	2,66%	1,66%	1,60
Finland	4,35%	2,02%	2,15
Spain	4,58%	2,07%	2,21
Ireland	8,01%	3,35%	2,39
Portugal	3,67%	0,81%	4,53
Italy	2,86%	0,41%	7,05
Greece	9,09%	0,90%	10,11

Cyclical (temporary) movements have been the dominant factor behind growth variations in GDP. This is especially the case in those peripheral countries where cyclical movements in economic growth are many times higher than the long-term growth rates. Thus, booms and bust in economic activity seems to be the overwhelming characteristic of movements in GDP in the countries of the periphery.

Asymmetry between Eurozone countries not so much to be found in a lack of correlation in growth rates but in the **intensity** of the boom and bust dynamics of growth rates.

Cross-country correlation coefficients of cyclical components GDP

	Austria	Belgium	Finland	France	Germany	Greece	Ireland	Italy	Netherl	Port
Austria										
Belgium	0,97									
Finland	0,97	0,98								
France	0,93	0,95	0,97							
Germany	0,69	0,57	0,55	0,59						
Greece	0,73	0,82	0,84	0,74	0,09					
Ireland	0,85	0,89	0,92	0,95	0,41	0,81				
Italy	0,91	0,96	0,98	0,96	0,50	0,86	0,93			
Netherlands	0,93	0,94	0,93	0,91	0,60	0,75	0,86	0,90		
Portugal	0,98	0,89	0,89	0,87	0,37	0,82	0,87	0,90	0,94	
Spain	0,85	0,91	0,94	0,87	0,27	0,97	0,90	0,95	0,86	0,90

The cyclical movements of GDP are highly correlated in the eurozone.
German correlation coefficients are positive but are the lowest

Benefits from budgetary union

- Centralized budget works as insurance mechanism
 - if asymmetric shock occurs
 - the centralized European budget automatically redistributes income across countries
 - there is risk sharing
- Centralized budget reduces fragility
 - Centralization implies that the European government issues common bonds
 - This is situation of “stand-alone” countries which issue their in currency over which they have full control
- Insurance fails if countries are pushed in bad equilibrium
 - Loss of welfare
 - Issue of sustainability

Temporary vs permanent shock

- Note that an insurance system (should **only** be used to take care of **temporary shocks**
 - When asymmetric shocks occur as a result of unsynchronized business cycles insurance mechanism provided by a central budget is the answer
- In contrast, when the asymmetric shocks are exogenous the focus should be on **flexibility**
 - Insurance can only be used as a temporary device to alleviate the cost of adjustment