

# **A Brief History of European Monetary Arrangements**

EC329 – Economics of the European Union

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# Overview

- So far, have covered three broad areas
  - EU history and institutional arrangements (lecture 1)
  - The microeconomics of European integration (lectures 2-4)
    - Effects of European integration on industrial restructuring and economic growth (lectures 2-3)
    - Labour market effects of European integration (lecture 4)
  - EU policies (lectures 5-6)
    - The Common Agricultural Policy
    - Trade Policy
    - Regional Policy
- Now turn to the ‘macroeconomics of EU integration’ (basically: monetary integration):
  - A brief history of monetary arrangements in Europe
  - The theory of optimum currency areas
  - EMU and the Stability and Growth Pact

# Plan of Talk

- Monetary arrangements and institutions in Europe before 1973 (end of the Bretton-Woods era)
- Early attempts at stabilising exchange rates after 1973
- The European Monetary System (EMS)
  - Setup and functioning
  - Problems
  - From EMS to EMU

# A Brief Monetary History of Europe Before 1973

# Before WWI

- Until the 19th century, money was almost exclusively metallic (mainly gold and silver)
- There were many more currencies than today but their value was basically determined by their metal content
- With the arrival of the modern nation-state
  - Money and countries started to be identified with each other
  - Paper money came to dominate but was fully backed by gold reserves ('full gold convertibility', gold was in effect the common currency of most of the world → an early monetary union)
  - Period 1880-1914 is called the 'Classic Gold Standard'
- Gold Standard was suspended with start of the First World War
  - Shipping of gold became too dangerous
  - Gold backing abandoned to finance war efforts by printing paper money

# The Interwar Period

- Countries attempted to revert back to the gold standard
- But no agreement on how to set conversion rates to gold (and thus exchange rates)
- Three case studies:
  - The British case: a refusal to devalue an overvalued currency breeds economic decline (loss of competitiveness, protracted deflation)
  - The French case: devaluation, under-valuation and beggar-thy-neighbour policies, until others retaliate and the currency becomes overvalued
  - The German case: hyperinflation (1922), new currency (1924), refusal to devalue in the 1930s and finally introduction of currency controls and a system of managed trade

# Lessons from the Interwar Period

- Exchange rate misalignments created huge problems (recession, beggar-thy-neighbour policies ...)
- Rigid adherence to fixed parities brought economic crisis
- Lack of international cooperation led to ‘devaluation-races’ and the collapse of international trade (together with rising tariff barriers)
- Absence of ‘lead currency’ was part of the problem

# The Post-War Years until 1973

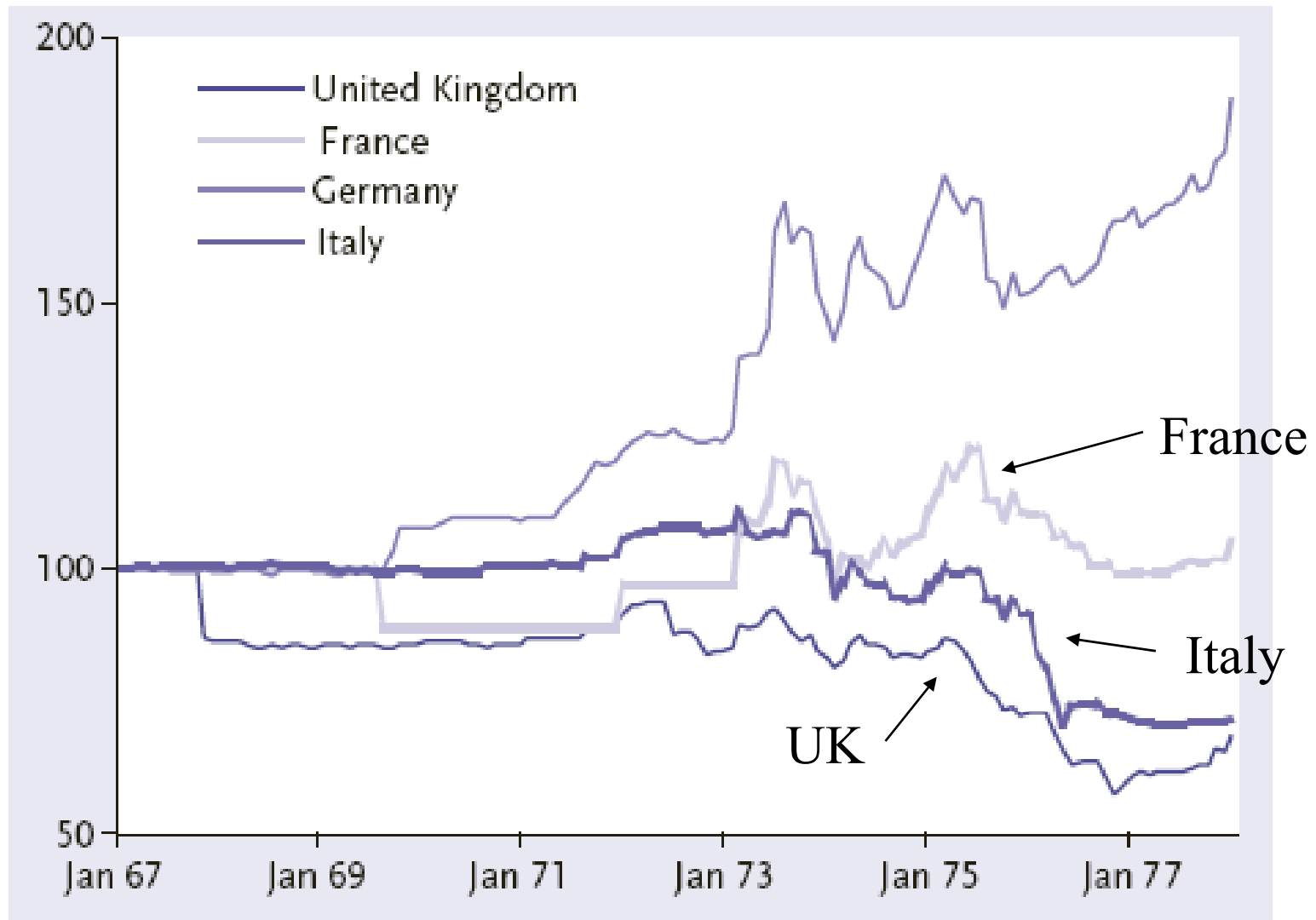
- Bretton Woods conference in 1944. Established the post-war international monetary order:
  - U.S. dollar became lead currency: dollar tied to gold at a fixed rate, all other currencies tied to the dollar
  - Exchange rates were fixed but adjustable to avoid major misalignments
  - International Monetary Fund (IMF) was guardian of this system
    - Approve exchange rate realignments
    - Provide loans to countries to fight off speculative attacks and prevent frequent devaluations
- The end of Bretton Woods came in 1973
  - Mounting US budget deficit in the 1960s (Vietnam, social security)
  - Partly financed by printing money → inflation, pressure on US dollar
  - First devaluation in 1971, followed by wave of realignments
  - Gold convertibility of USD finally abandoned in 1973, move to flexible exchange rates

# Europe after Bretton Woods

# Early Stabilisation Attempts

- Memories of the inter-war troubles led to attempts to stabilise exchange rates in Europe without Bretton Woods
- Policy makers agreed to try to limit bilateral fluctuations to a maximum of 4.5% around a fixed rate
- But inflation rate differentials across member countries in the 1970s proved to be too big to prevent devaluations
  - France, Italy and the UK had double-digit rates of inflation (UK over 20% in 1975-1980)
  - Germany, the Netherlands and Belgium had rates below 10%
  - The Franc, Lira and Pound thus became relatively less valuable and their exchange rates deteriorated ([figure](#))

# Early Stabilisation Attempts



Dollar exchange rates. Source: IMF

# The European Monetary System

- Failure of early stabilization attempts led the establishment of the European Monetary Union (EMS) in 1979
  - As before, grid of bilateral fixed exchange rates
  - But also possibility for regular realignments ...
  - ... and commitment for bilateral support (i.e. from both parties involved in a given exchange rate pair)
  - Initial members: Belgium, Denmark, France, W. Germany, Ireland, Italy, Netherlands
- But inflation differentials continued to put pressure on exchange rates (e.g. Italy – W. Germany  $>10\%$  per year)
  - Alignments therefore frequent and predictable
  - Led to speculative attacks and turmoil on currency markets around predicted devaluation dates
  - In response, members tried to reduce inflation differentials; started emulating W. Germany (largest member, lowest inflation)

# The European Monetary System

- Despite some initial successes, full convergence of inflation rates never achieved
- German Reunification triggered major crisis in 1992-93
  - Reunification followed by strong increase in inflation in Germany (1:1 conversion of East Germany's money, wage increases)
  - Bundesbank tightened monetary policy in return, raising interest rates and thus putting upward pressure on the Deutschmark
  - Other EMS members wanted to prevent depreciation vis-à-vis the Deutschmark, also tightened monetary policy
  - But inappropriate for their economic climate, deepened ongoing recession
  - Markets lose confidence in bilateral commitments, speculative attacks start on Lira and Pound (UK had only joined in 1990)
  - Initial support by other central banks but abandoned in 1992 → UK and Italy left the EMS, remaining parities widened to +/-15%

# From EMS to Monetary Union

- EMS thus substantially weakened but still alive
- In the meantime, Treaty of Maastricht had been signed and ratified (1991-1993) which foresaw establishment of a monetary union
- Why was the introduction of the Euro relatively easy?
  - End of capital controls in 1990s had severely limited power of central banks to fight speculative attacks. Full monetary union would end these problems.
  - All EMS members were following the Bundesbank, so had effectively already given up independent monetary policies
  - Germany only country which lost this independence but backed EMU on political grounds

# From EMS to Monetary Union

- EMS became entry point to the Euro
  - Membership for two years required prior to joining the EMU
  - After 1999, EMS transformed into EMS-2 (parities with the Euro rather than bilateral ones)
  - Membership in EMS-2 remains precondition for joining EMU (e.g. Denmark, Estonia, Lithuania, Cyprus, Latvia, Malta are all members)
- January 1999: EMU starts
  - Exchange rates frozen at EMS parities
  - Monetary policy transferred to ECB
  - Founding members: Belgium, France, Italy, Netherlands, Portugal, Germany, Spain, Ireland, Luxembourg, Austria, Finland
- January 2002: Introduction of Euro coins

# Learning Outcomes

- European monetary arrangements/institutions before 1973:
  - Pre-Bretton Woods
  - Bretton-Woods era
- Post-Bretton Woods arrangements:
  - Early stabilisation attempts
  - The European Monetary System (EMS): setup and functioning, problems
- From EMS to EMU
  - Why was introducing the Euro relatively unopposed?
  - The key dates
  - EMS-2

# **The Theory of Optimum Currency Areas**

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# Plan of Talk

- Optimum currency areas: Introduction
- The optimum currency area criteria
- Is Europe an optimum currency area?
- Will Europe become an optimum currency area?
- Summary and Learning Outcomes

# Optimum Currency Areas: Introduction

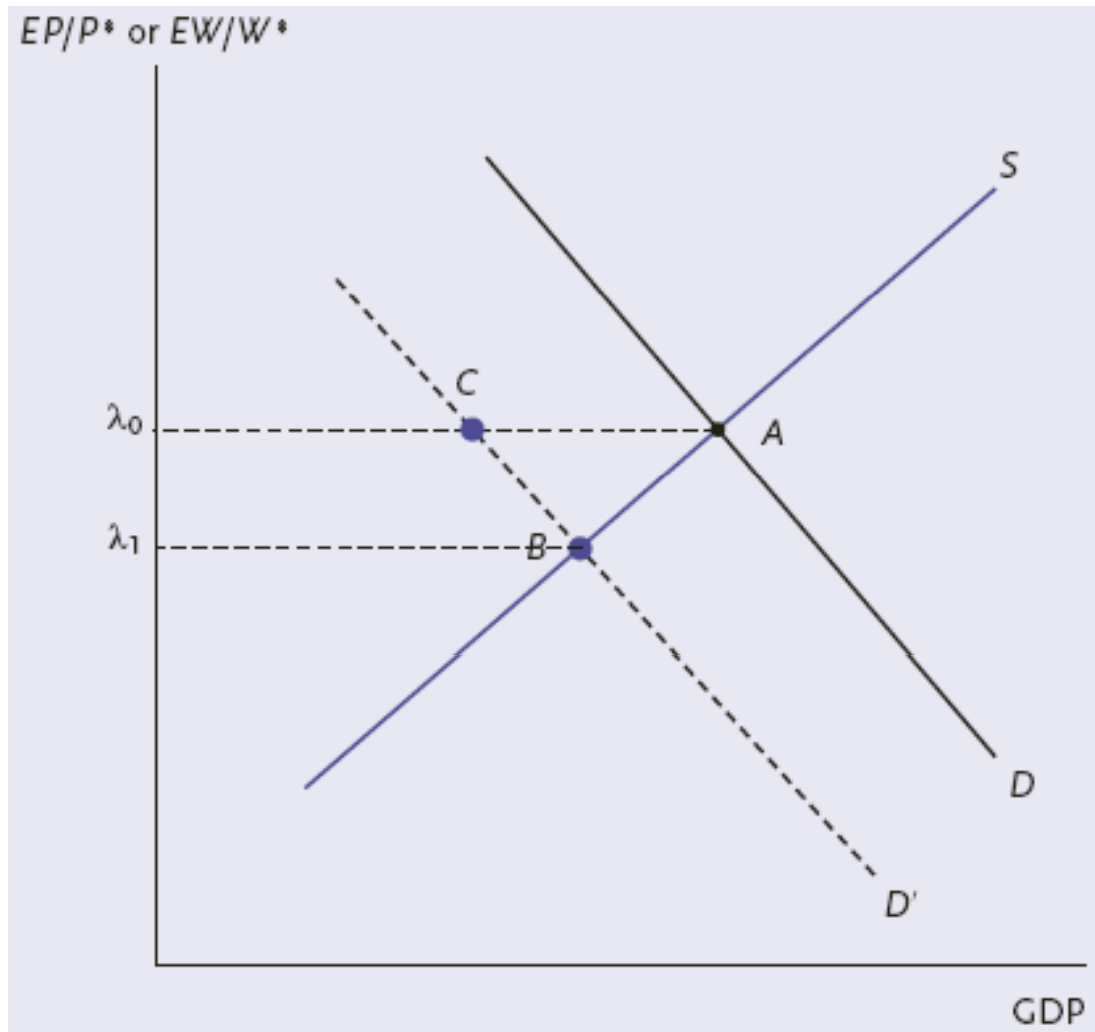
# The Basic Question

- Usually, currency area borders coincide with national borders.
- But this does not necessarily have to be the case. So how to delineate currency areas? What economic criteria should be used?
- Answer these questions by looking at
  - Benefits of joining a currency area
  - Costs of joining a currency area (asymmetric shocks)

# Benefits and Costs of Currency Unions

- The main benefits of currency unions are
  - Elimination of currency exchange costs (can be up to 10% of transaction values)
  - Elimination of risk on the evolution of exchange rates
  - Increased price transparency increases cross-border competition
  - Better monetary discipline and price stability?
  - First three benefits clearly increase with the size of the currency union
- The costs of monetary union are the loss of monetary and exchange rate instruments (two sides of the same coin)
- This matters in the presence of
  - price and wage stickiness
  - asymmetric shocks

# Adjustment to Demand Shocks

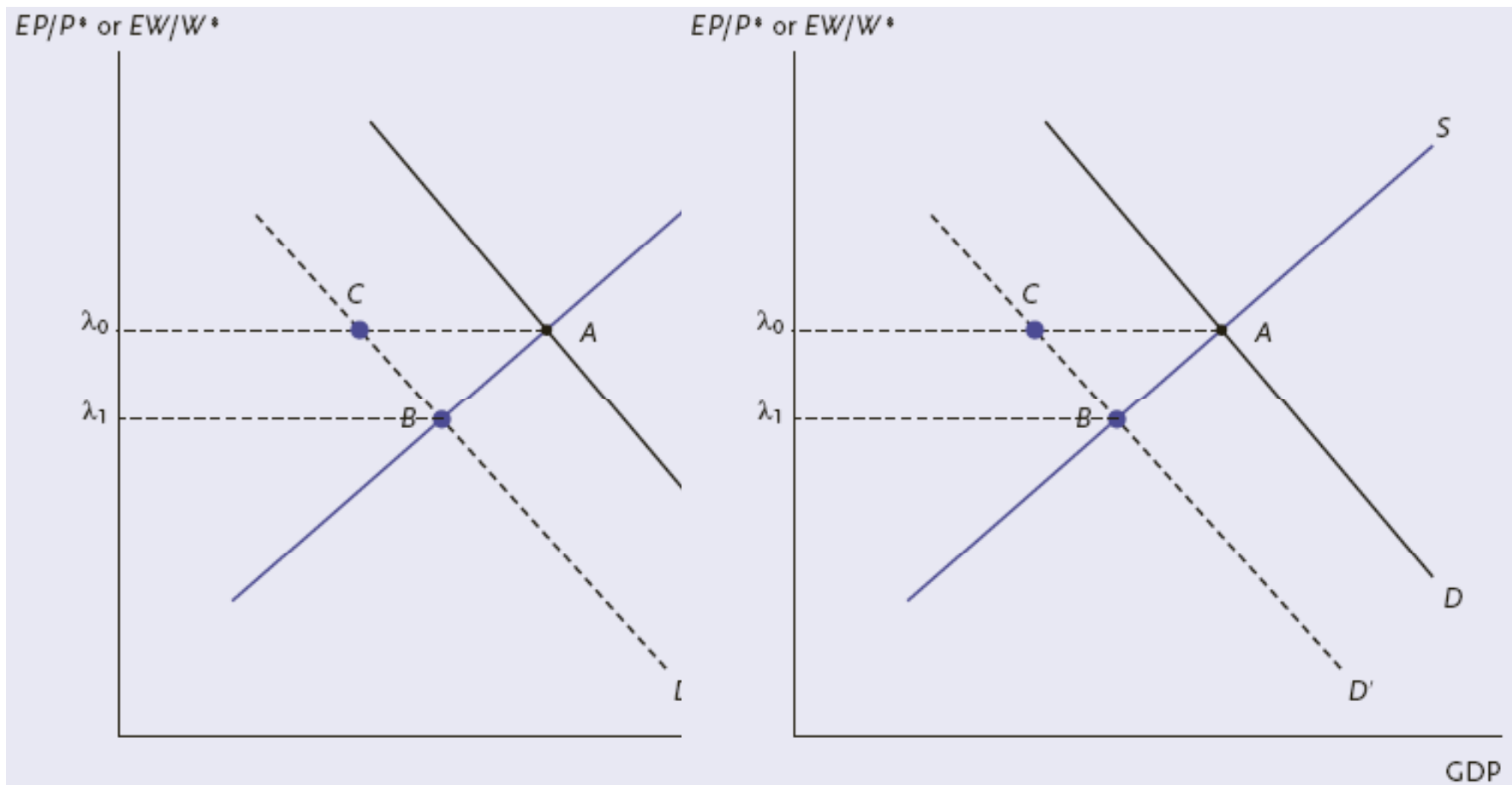


- Start with a symmetric shock
- Shifts world demand curve for domestic goods inwards
- Adjustment via
  - Prices or wages
  - Exchange rates

[Back to OCA](#)

# Symmetric Shocks

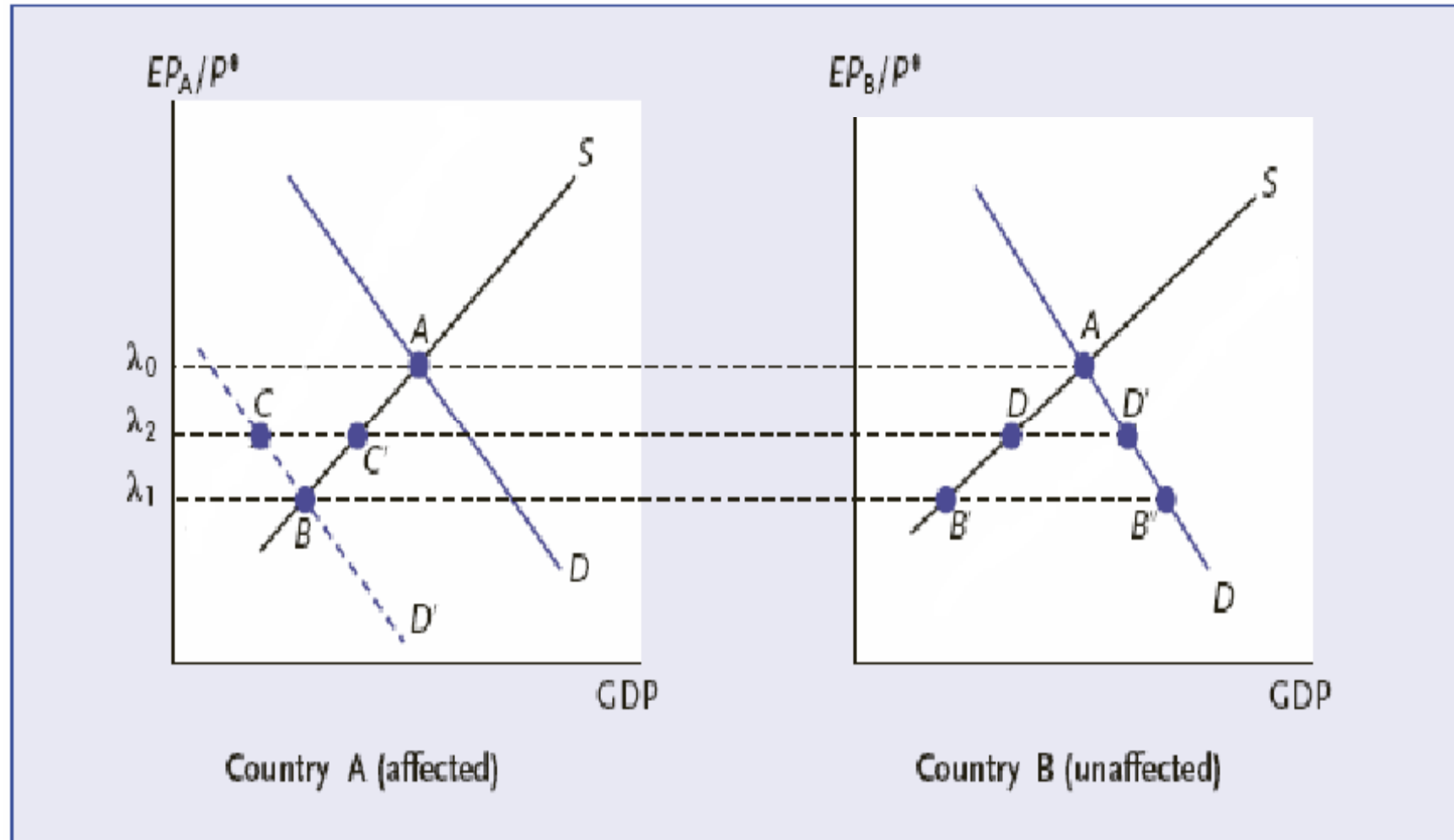
- Same demand shock in two similar countries that share the same currency and, therefore, exchange rate.



# Asymmetric Shocks

- Suppose A hit by a negative demand shock but not B
- Consequences (see [figure](#)):
  - Central bank depreciates: A okay but B faces excess demand
  - Central bank does nothing, B okay, A faces excess supply
  - Reaction in between these extremes or with floating exchange rates: might land at  $\lambda_2$
- In the long-run, will get back to equilibrium but ...
  - If no full adjustment, A will experience a recession (excess supply, reduction in output and employment, falling wages and prices)
  - Similarly, B faces period of accelerated inflation
- Note: symmetric shocks can have asymmetric effects
  - Due to differences in production structure, labour markets etc. across countries

# Asymmetric Shocks



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# The Optimum Currency Area Criteria

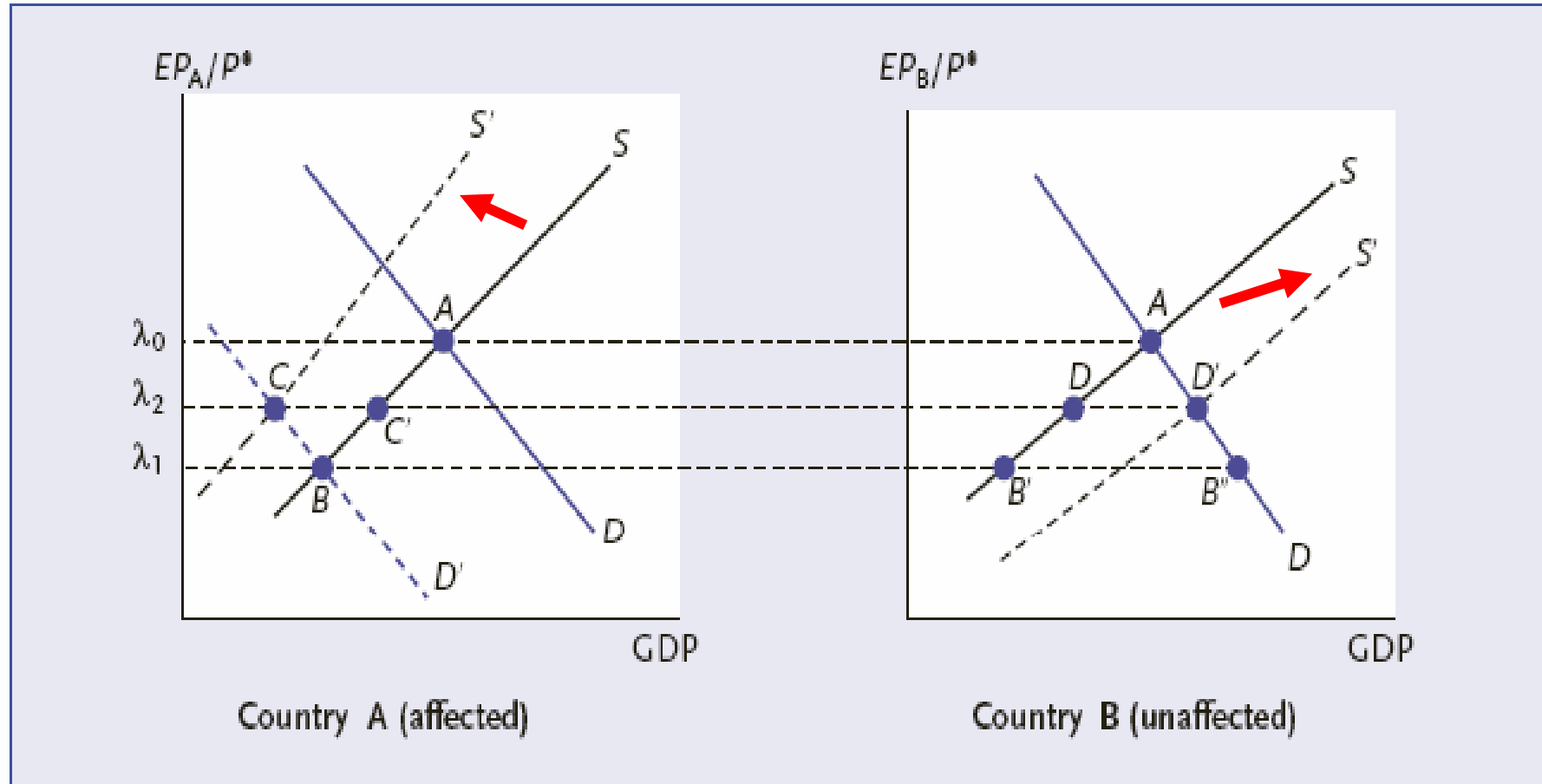
# The Optimum Currency Area Theory

- The Theory of Optimum Currency Areas (OCAs) proposes criteria which tell us about the potential *costs* of sharing a currency
- In particular, these criteria ask
  - What reduces the incidence of asymmetric shocks?
  - What makes it easier to cope with shocks when they occur?
- Six main criteria
  - Three economic criteria (labour mobility, product diversification, openness)
  - Three ‘political’ criteria (fiscal transfers, homogenous preferences, solidarity vs. nationalism)

# Labour Mobility (R. Mundell)

- Robert Mundell: OCAs are areas in which people move easily. Why?
  - Reconsider the asymmetric demand shock to country A ([figure](#))
  - If labour moves from A to B, this will equilibrate excess demand and supply (shift in the supply curves)
- Potential problems
  - Barriers to movement (legal, cultural, linguistic ...)
  - Differences in product mixes requires retraining of workers (takes time)
  - Increase in labour supply decreases labour productivity until new capital accumulates (also takes time)

# Labour Mobility (R. Mundell)



# Production Diversification (Kenen)

- Peter Kenen: Countries whose production and exports are widely diversified and of similar structure form an OCA
- Focuses on what determines frequency and severity of asymmetric shocks. Idea:
  - If countries are very similar, asymmetric shocks will be rare
  - Many shocks tend to be sector specific (e.g. a decline in world market prices for a certain good). If a country is well diversified, a shock has little aggregate consequences.

# Openness (McKinnon)

- Ronald McKinnon: Countries which are very open to trade and trade heavily with each other form an optimum currency area
- Provides another determinant for how frequent and severe asymmetric shocks will be. Idea:
  - If two countries are very well integrated and trade mostly with each other, exchange rates do not matter very much for relative prices. Why?
    - Deep integration means strong competition b/w firms
    - Tough competition means prices will adjust as soon as the exchange rate changes (e.g.  $E_A$  up implies  $P_A$  down, so  $E_A P_A$  remains unchanged)
  - In effect, integration has made prices (of traded goods) more flexible, so adjustment can happen via prices ([figure](#))

# Fiscal Transfers

- Transfer criterion: Countries that agree to compensate each other for adverse shocks form an OCA
- Idea:
  - Assume country A is hit by an asymmetric demand shock
  - If country B agrees to help A by fiscal transfers, extent of shock will be smaller (e.g. b/c of increased government spending)
  - How would this show up in our diagram? ([figure](#))
- Such transfers are actually in operation in most countries
  - Implicitly through the welfare system
  - Explicitly in many federal countries (Switzerland, Germany ...)

# Homogeneous Preferences

- Homogeneity of preferences criterion: countries that share a wide consensus on the way to deal with shocks form an OCA
- Matters primarily for symmetric shocks. Idea:
  - Many possible reactions to a given symmetric shock
  - Consensus on best reaction is important for survival of CU

# Solidarity vs. Nationalism

- Solidarity criterion: Countries that show a high degree of solidarity to each other form more stable currency unions
- A common currency will always face occasional asymmetric shocks that result in temporary conflicts of interests
  - These conflicts will often follow national lines
  - A higher degree of solidarity will lead to more tolerance towards the resulting costs (and a higher willingness to help out, e.g. via transfers)

Is Europe an Optimum  
Currency Area?

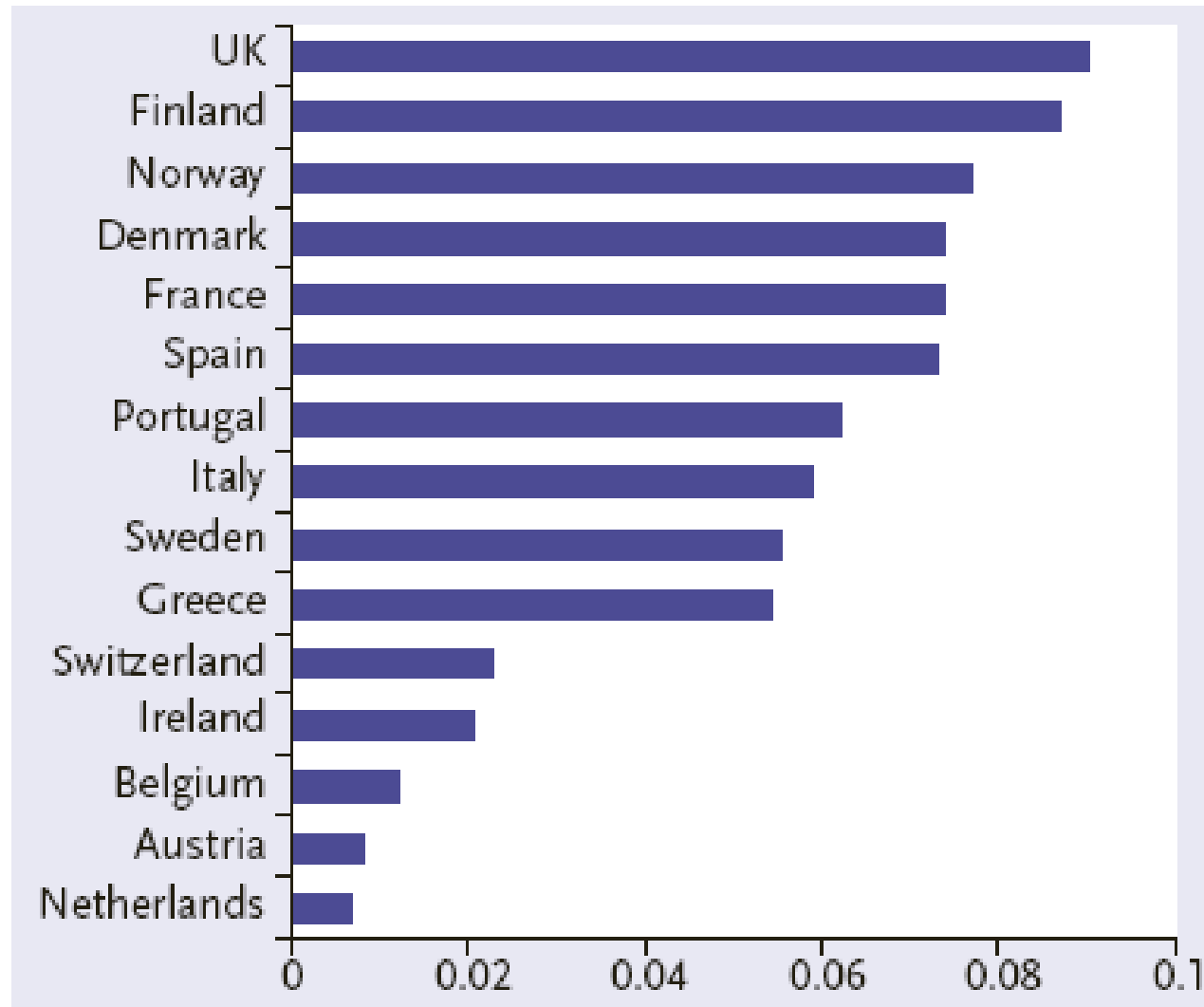
# Is Europe and Optimal Currency Area?

- OCA criteria rarely yield a black-and-white answer
  - Mostly some criteria are fulfilled and some are not
  - Not always clear whether a given criterion is met
  - Also hard to quantify the importance of the criteria. So not clear how to weight and compare them.
- Thus, careful analyses can easily come to opposite outcomes
- In the following, consider whether and to what degree Europe fulfils the OCA criteria

# Frequency of Asymmetric Shocks

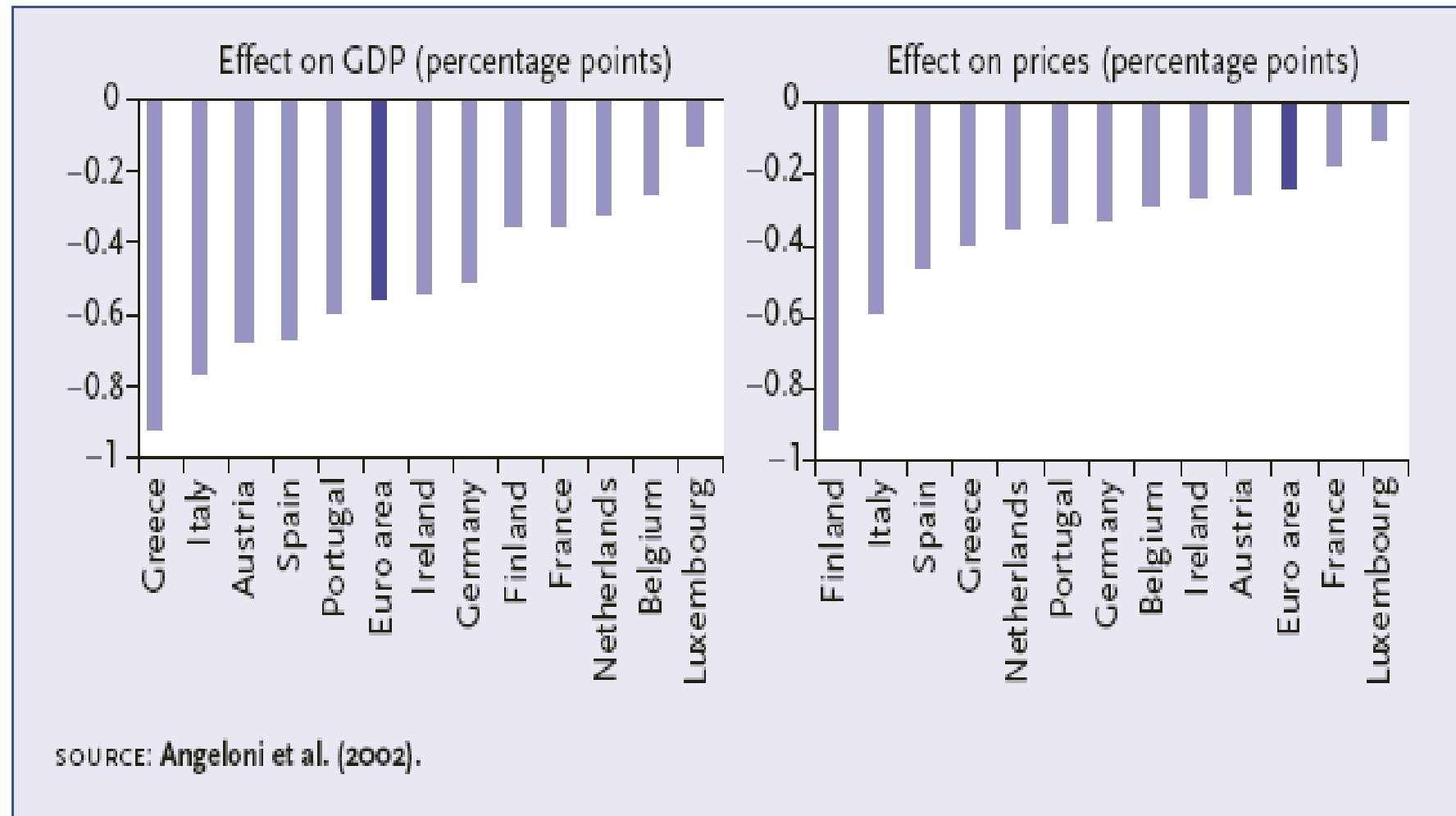
- Source of problems with OCAs are asymmetric shocks
- So how frequent are they in Europe?
  - Assume past shocks can be used as guide to future shocks
  - Use exchange rate movements against Deutschmark as indicator
    - Countries use ER to offset shocks
    - Deutschmark was the most stable currency in Europe
    - But need to control for changes due to inflation differentials
  - See BW, p.360, footnote 7 for details of index calculation
  - Substantial variation across countries ([figure](#))
- Another aspect of asymmetry are different responses to an identical shock
  - Look at monetary policy shocks (changes in the interest rate)
  - A one percentage point increase has very different effects ([figure](#))
- Overall, asymmetric shocks are a concern in the Euro area

# Frequency of Asymmetric Shocks



Based on standard deviation of exchange rates against Deutschmark.  
Source: Bayoumi and Eichengreen (1997)

# Asymmetric Response to Symmetric Shocks



# Openness

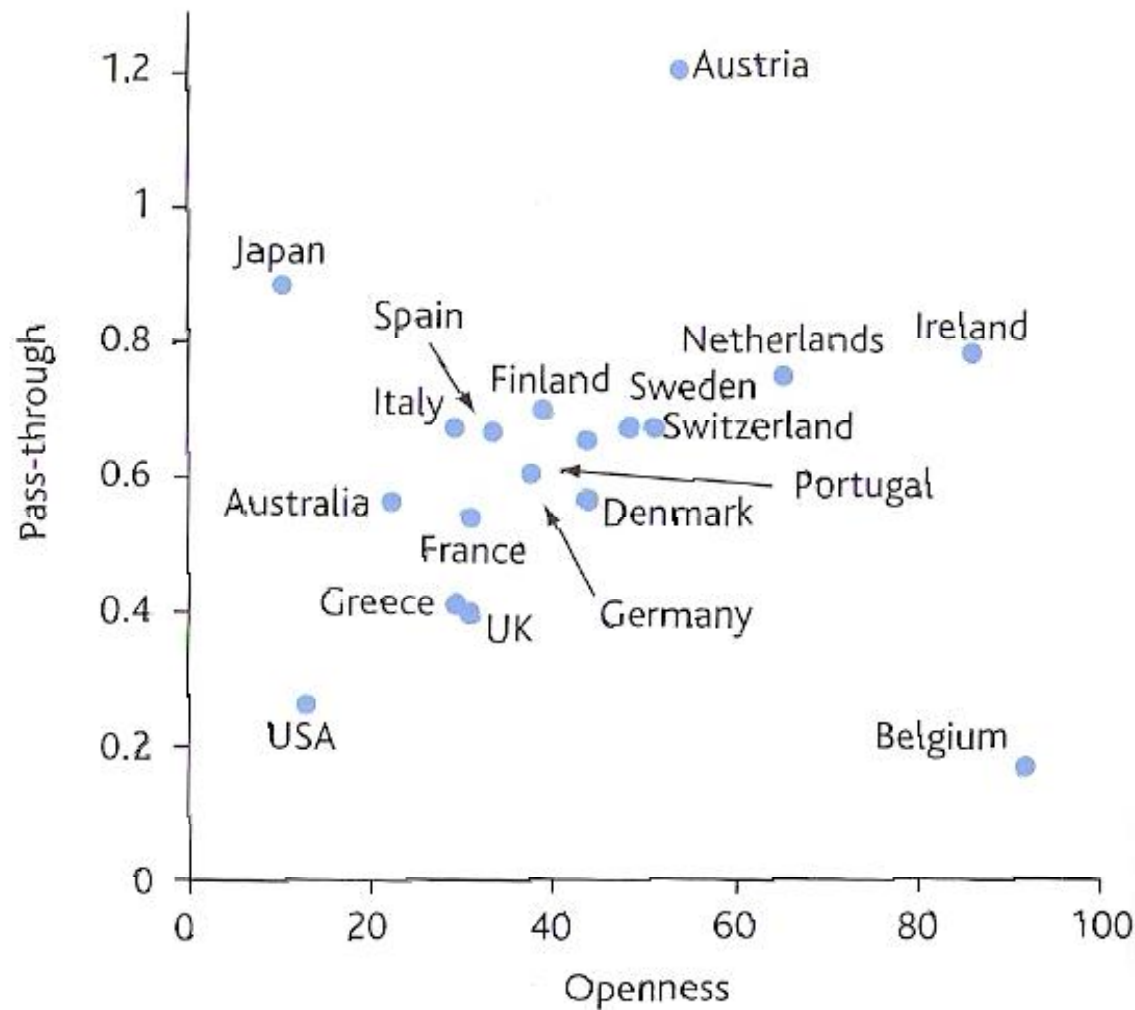
- McKinnon criterion states that independent exchange rates are less valuable for open economies
- How to measure openness? Two approaches:
  - Trade as a percentage of GDP
    - Ratio of exports to GDP or ratio of imports to GDP
    - Here: take average of the two
    - Figures indicate most European countries are relatively open ([table](#))
  - How do domestic prices respond to exchange rate movements?
    - If one-to-one pass-through, exchange rate useless for competitiveness (price change offsets exchange rate change)
    - Generally, open countries also have high pass-through ([figure](#))
- Openness criterion fulfilled in Europe

# Openness: Trade/GDP

Austria	52.3	Cyprus	48.3	Denmark	42.8
Belgium	87.2	Czech Republic	76.0	Sweden	43.9
Finland	35.4	Estonia	92.0	UK	27.9
France	27.2	Hungary	70.1		
Germany	39.9	Latvia	55.0	Bulgaria	65.9
Greece	25.5	Lithuania	56.9	Croatia	54.4
Ireland	72.6	Malta	81.8	Romania	39.3
Italy	27.9	Poland	40.9	Turkey	36.5
Luxembourg	133.3	Slovak Republic	83.6		
Netherlands	66.4	Slovenia	63.1		
Portugal	36.2			US	13.8
Spain	29.5	EU-25	10.7	Japan	13.5

Table shows average of (imports/GDP) and (exports/GDP). Source: European Economics, Spring 2005

# Openness: Exchange Rate Pass-Through

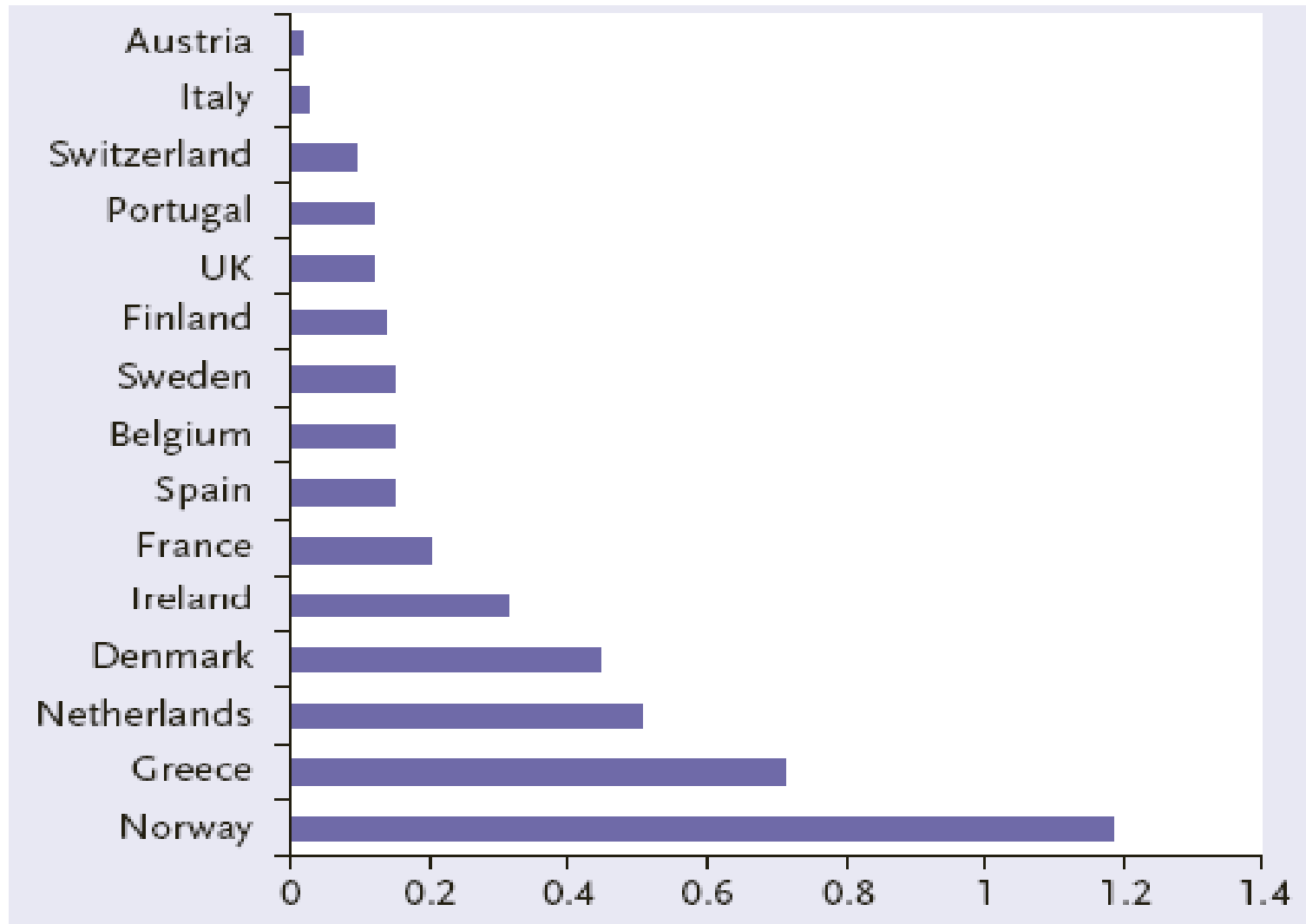


Source: European Economy, 73 (2001), Campa and Goldberg (2002)

# Diversification & Similarity

- Kenen criterion: OCA countries should be well diversified and have similar production/trade patterns
- Diversification generally high in Europe (exceptions include Norway, maybe Luxembourg)
- Similarity: look at trade similarity
  - How dissimilar is trade in agriculture, minerals and manufacturing to that of Germany (Europe's largest economy)?
  - Shows most countries are fairly similar but there are exceptions ([figure](#))
- Overall, Kenen criterion largely fulfilled

# Trade Dissimilarity

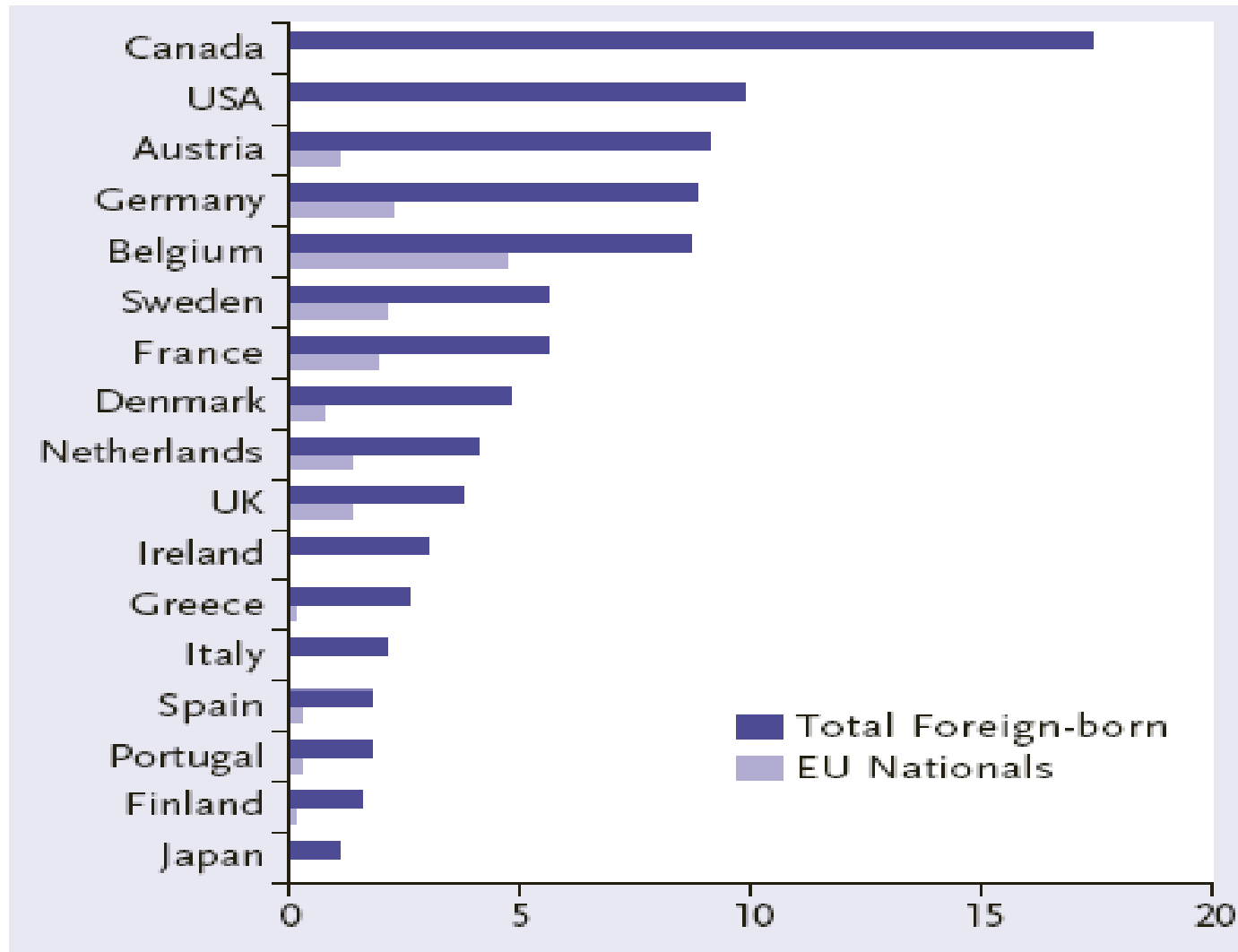


Source: Bayoumi and Eichengreen (1997)

# Labour Mobility

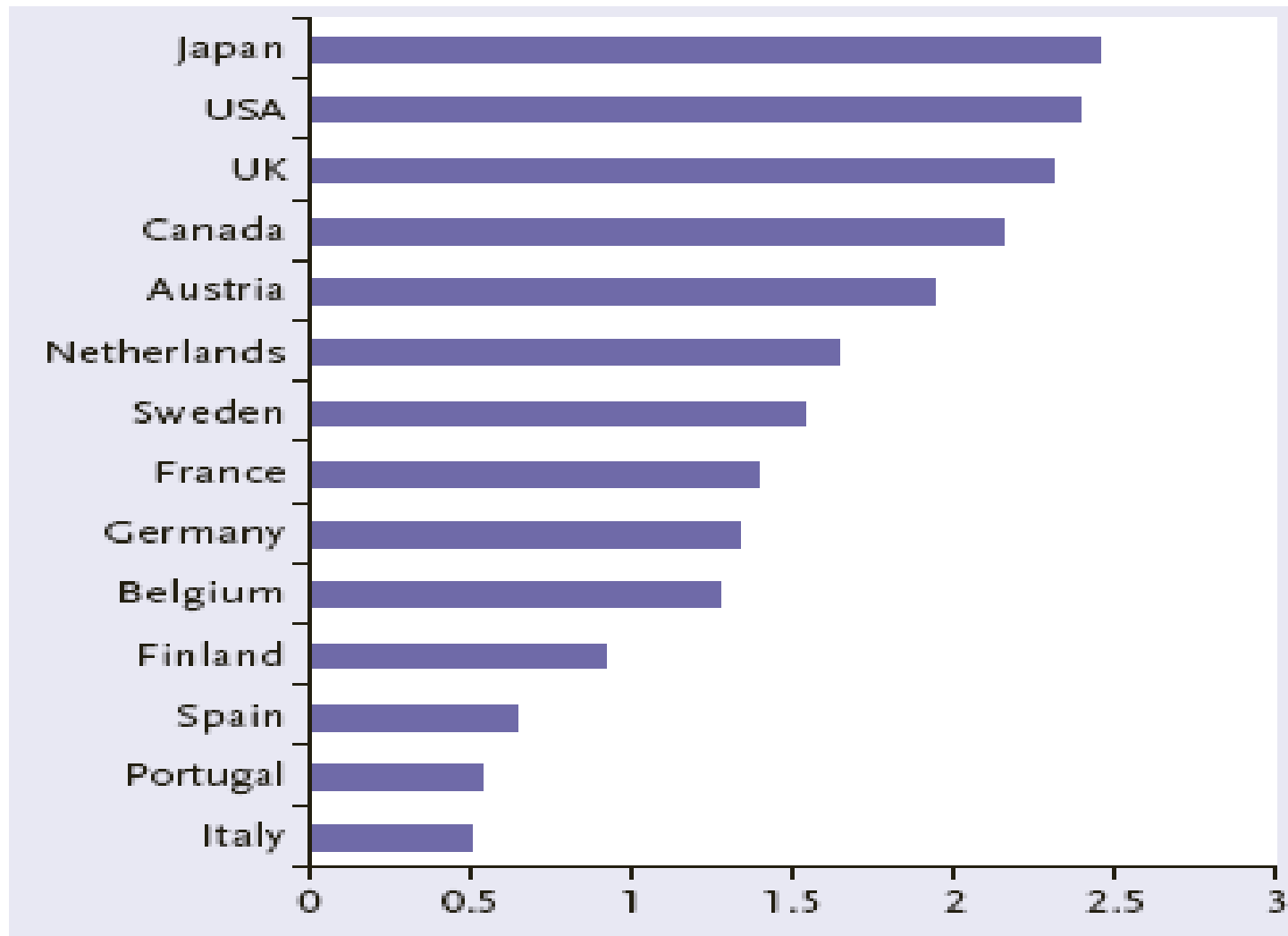
- Labour mobility hard to measure
  - Need a measure for when it would be ‘rational’ to move
  - But this depends on a host of factors (e.g. moving costs, risk of becoming unemployed, longer run career opportunities, family prospects, eligibility to welfare, cultural/linguistic differences ...)
- Feasible approach is to compare the EU to existing, well-functioning currency areas (e.g. USA, Canada)
  - Cross-country labour mobility in the EU is low, even worse for intra-EU mobility ([figure](#))
  - Even within-country (cross-regional) mobility is low in the EU ([figure](#)); and only 5% of people move for professional reasons
  - Immigration from outside the EU also lower than e.g. in USA
- In summary, EU doesn’t fulfil the labour mobility criterion

# Cross-Country Labour Mobility



Foreign-born population as percentage of total population, 1998. Source: DICE, CESifo.

# Within-Country Labour Mobility



Internal migration across regions as a percentage of total population, 1995.

Source: OECD.

# The Political Criteria

- Fiscal transfers criterion: clearly not fulfilled
  - No direct transfers to offset asymmetric shocks
  - EU budget relatively small (1% of GDP) and spending not at all linked to occurrence of shocks
- Homogeneity of preferences: partly
  - Differences in past inflation rate and budget deficits suggest very different preferences for monetary and fiscal policy
  - But EU and in particular EMU has set up institutions that embody clear preferences (price stability, fiscal prudence)
- Solidarity vs. nationalism: ???
  - Very hard to know
  - Opinion polls suggest most EU citizens (around 60%) would favour a closer political union
  - But large variation across countries (from 35% in UK to 75% in Slovenia)

Will Europe Become an Optimum  
Currency Area?

# Will Europe Become an OCA?

- As seen, Europe fulfils OCA criteria only partly
- But what about the future? Does the simple existence of monetary union make Europe increasingly an optimum currency area?
- Look at four of the six criteria
  - Trade integration (McKinnon criterion)
  - Diversification and similarity (Kenen criterion)
  - Labour mobility (Mundell criterion)
  - Fiscal transfers

# Will Europe Become an OCA?

- Do currency unions increase trade? Probably yes → McKinnon criterion improved
  - Exporters and importers save on currency exchange costs
  - Elimination of risk on the evolution of exchange rates
  - Increased price transparency increases cross-border competition and trade
- If currency unions deepen trade integration, this is likely to lead to more, not less, specialisation (see lecture 6) → Kenen criterion worsens

# Will Europe Become an OCA?

- Costs of labour market inflexibility increase with CU
  - Reforms to increase labour mobility across countries? Unlikely
  - Reforms to reduce wage rigidity? Maybe
  - Recent reforms seems to point towards more flexibility (but not clear this is linked to the Euro)
  - Effect on Mundell criterion unclear
- Fiscal transfers
  - At present no political support for increased transfers
  - But recurrent proposals to change this → fiscal transfer criterion might be better fulfilled but again uncertain
- Overall, not clear whether EMU will improve fulfilment of OCA criteria

# Learning Outcomes

- Costs and benefits of currency unions
  - What are the main costs and benefits?
  - What is the role of asymmetric shocks?
- What are the optimum currency area criteria?
- To what extent are they fulfilled in Europe?
- Europe's future as an optimum currency area
  - Why could simple EMU membership improve OCA criteria?
  - What is the evidence for Europe?