Paul De Grauwe

# Economics of Monetary Union

## Introduction

- Economics is a science of thinking in terms of models jointed to the art of choosing models (which are relevant to the world)

Keynes to Harrod (1938)

# Outline of the course

- Part I: The theory of optimal currency areas (OCA)
  - The costs of a monetary union
  - The benefits of a monetary union
  - Costs and benefits compared

# Outline of the course

- Part II: Monetary Union
  - The fragility of incomplete monetary unions
  - How to complete a monetary union
  - Transition towards a monetary union
  - Political economy of 'deconstructing' the Eurozone
  - The European Central Bank: institutional features
  - Monetary Policies in the Eurozone
  - Fiscal Policies in a monetary union
  - The euro and financial markets

Paul De Grauwe

# Chapter 1: The Costs of a Common Currency

OXFORD
UNIVERSITY PRESS

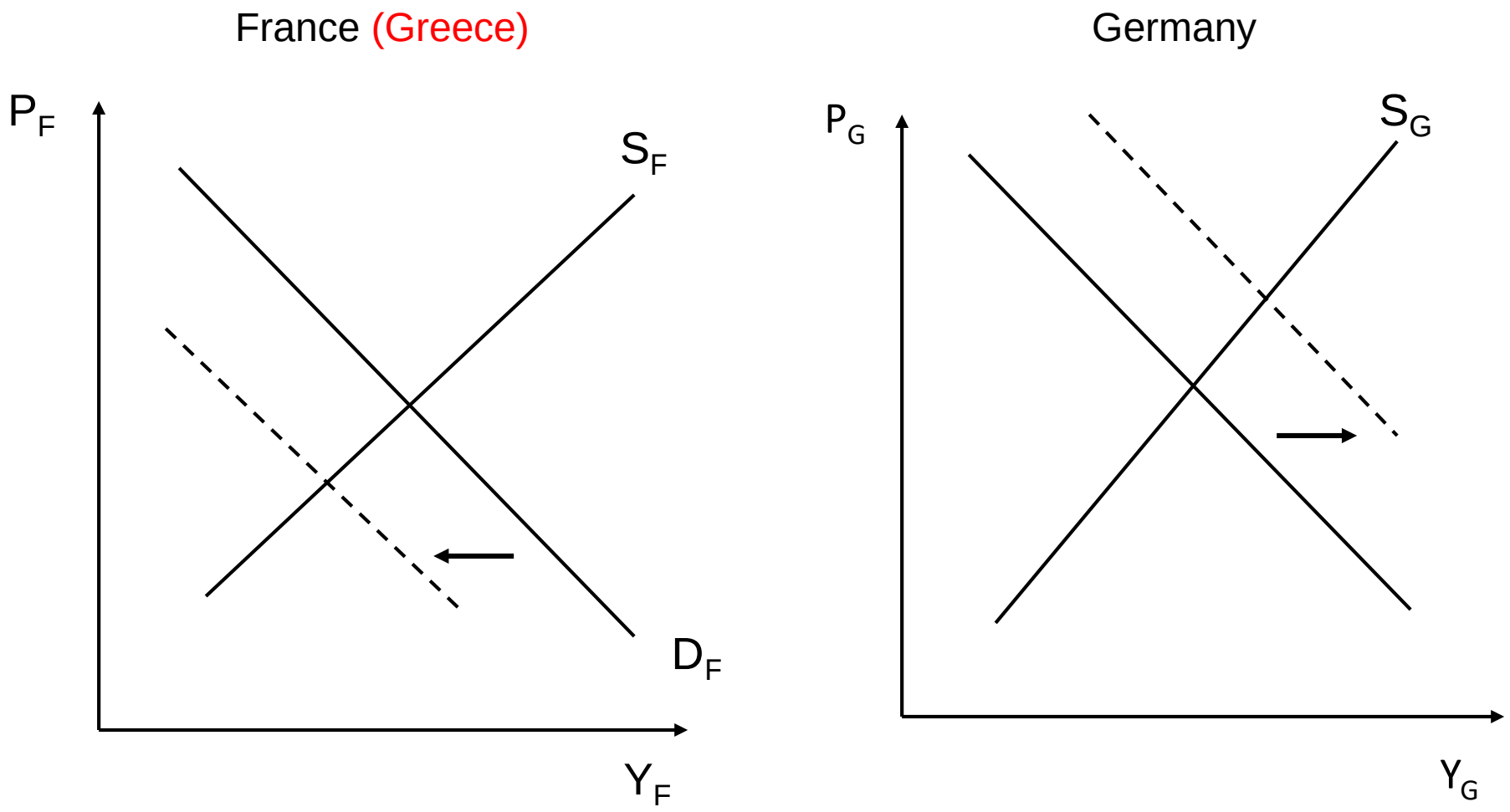
# Introduction

- Costs arise because, when joining monetary union, a country loses monetary policy instrument (e.g. exchange rate)
- This is costly when asymmetric shocks occur
- In this chapter we analyze different sources of asymmetry

# 1. Shifts in Demand (Mundell)

- Analysis is based on celebrated contribution of Robert Mundell (1961)
- Assume two countries, France and Germany
- Asymmetric shock in demand
  - Decline in aggregate demand in France
  - Increase in aggregate demand in Germany
  - Need to distinguish between permanent and temporary shock
- We will analyze this shock in two regimes
  - Monetary union
  - Monetary independence

# Figure 1.1 Aggregate demand and supply in France and Germany

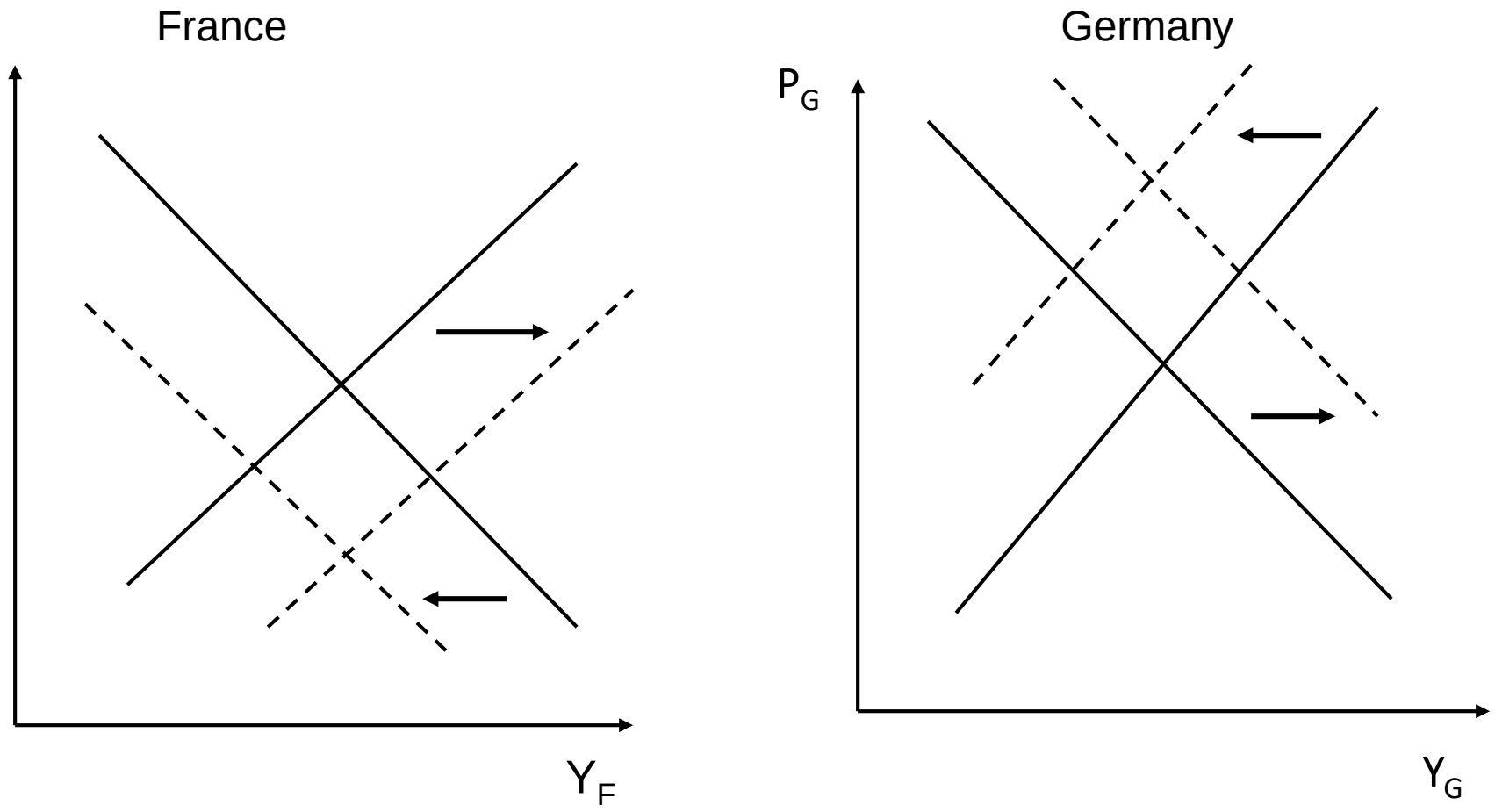


# First regime: monetary union

- Definition of monetary union
  - Common currency
  - Common central bank setting one interest rate
- How can France and Germany deal with this shock if they form a monetary union?
- Thus France cannot stimulate demand using monetary policy; nor can Germany restrict aggregate demand using monetary policy
- Do there exist alternative adjustment mechanisms in monetary union?

- Wage flexibility
  - Aggregate supply in France shifts downwards
  - Aggregate supply in Germany shifts upwards

# Figure 1.2 The automatic adjustment process



# Additional adjustment mechanism

Labour mobility

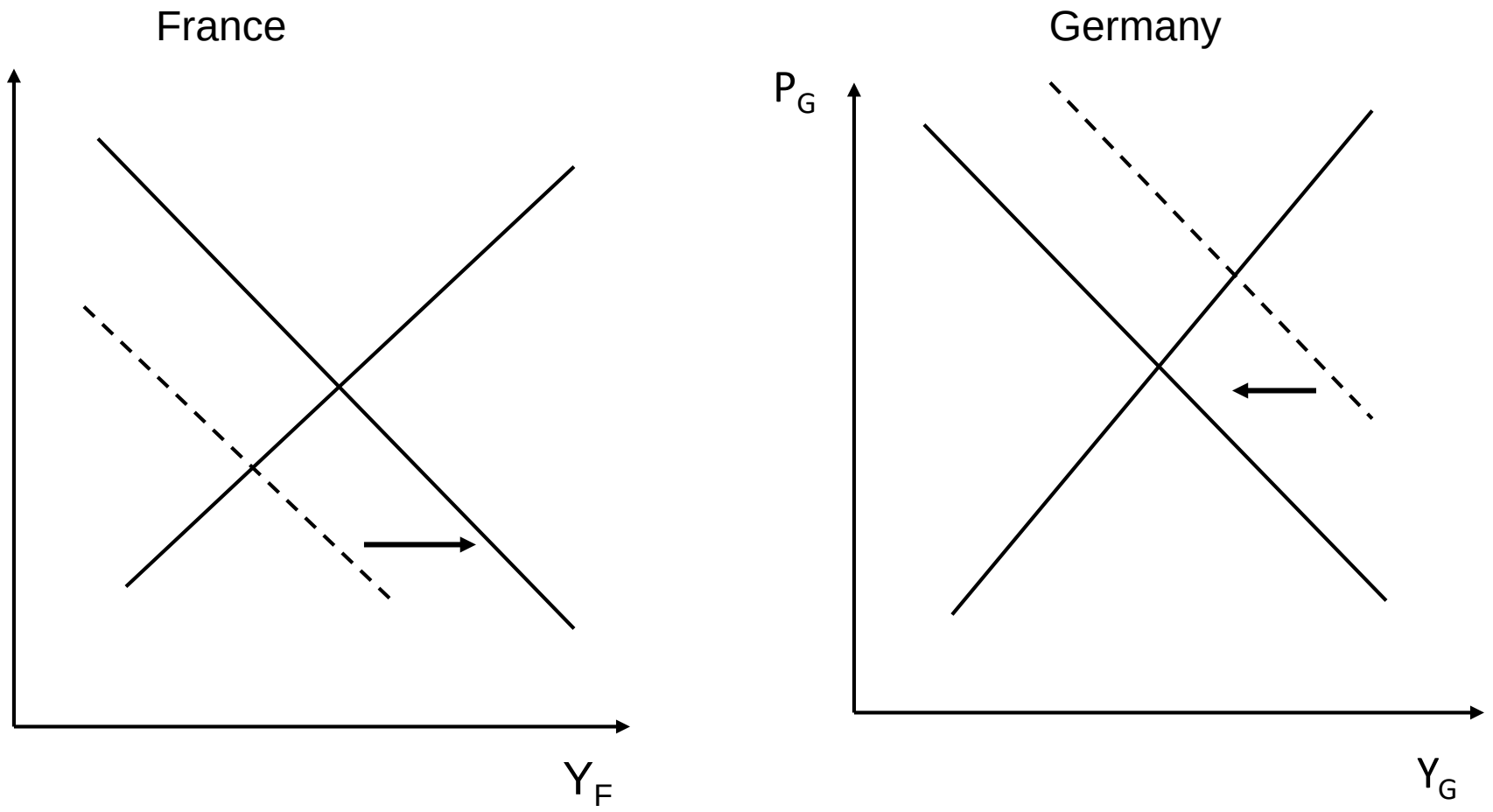
- Is very limited in Europe
- Especially for low skilled workers
- Main reason: social security systems

- Monetary union will be costly, if
  - Wages and prices are not flexible
  - If labour is not mobile
- France and Germany may then regret being in a union

# Second regime: monetary independence

- What if France and Germany had maintained their own currency and national central bank?
- Then national interest rate and/or exchange rate can be used

# Figure 1.3 Effects of monetary expansion in France and monetary restriction in Germany



- Thus when asymmetric shocks occur
- And when there are a lot of rigidities
- Monetary union may be more costly than not being in a monetary union

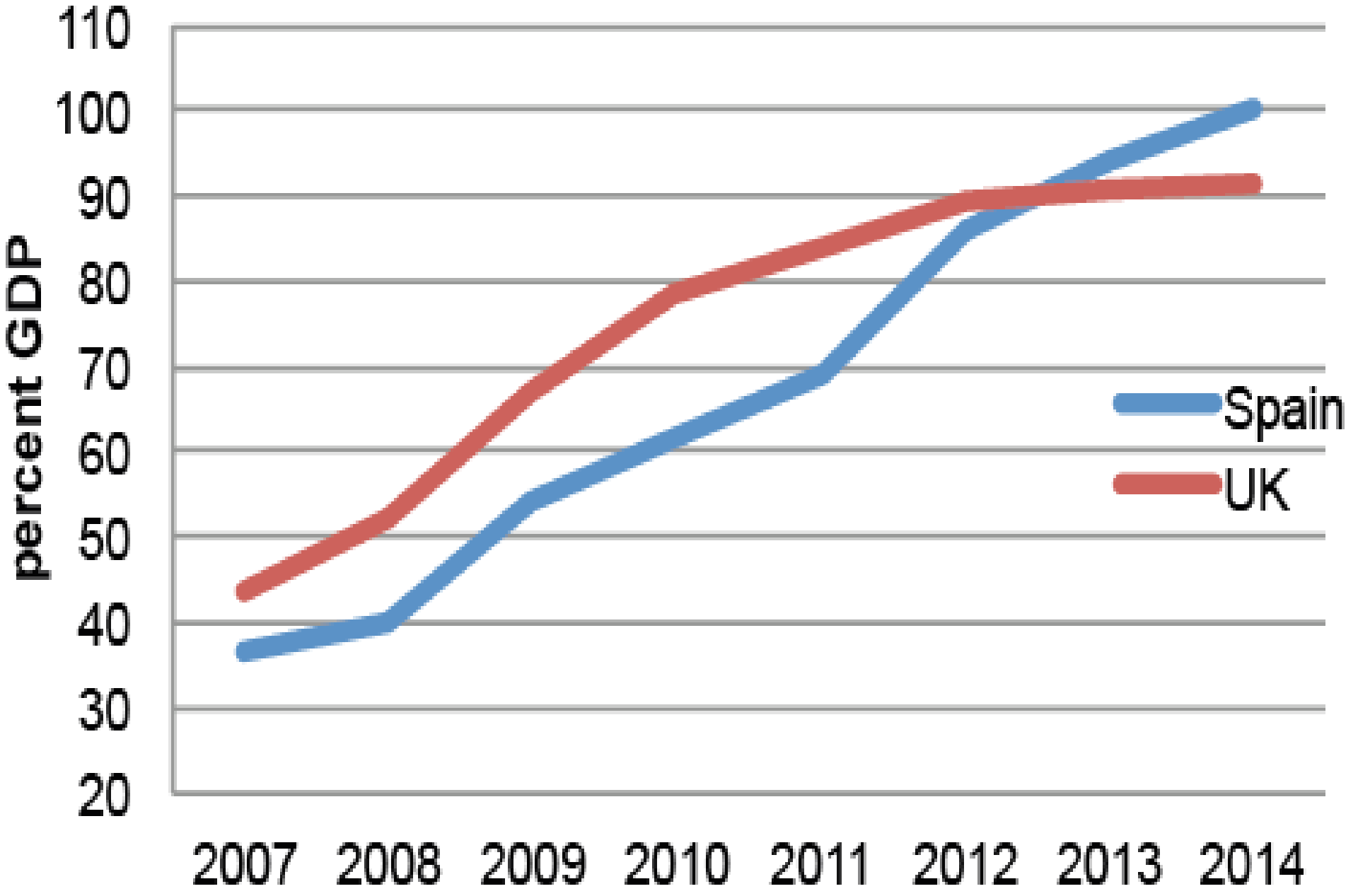
# 1.2 Monetary Independence and government budgets

- When countries join a monetary union they lose their monetary independence
- That affects their capacity to deal with asymmetric shocks
- The loss of monetary independence has another major implication:

  - it fundamentally changes the capacity of governments to finance their budget deficits

  - Let us develop this point further

- Members of monetary union issue debt in currency over which they have no control.
- It follows that: financial markets acquire power to force default on these countries
- This is not so in countries that are not part of monetary union, and have kept control over the currency in which they issue debt.
- Consider the case of UK (a “stand-alone” country) and Spain (a member of monetary union)



# UK Case

- Suppose investors fear default of UK government
  - They sell UK govt bonds (yields increase)
  - Proceeds of sales are presented in forex market
  - Sterling drops
  - UK money stock remains unchanged
  - maintaining pool of liquidity that will be reinvested in UK govt securities
  - If not Bank of England can be forced to buy UK govt bonds
- Investors cannot trigger liquidity crisis for UK government and thus cannot force default (Bank of England is superior force)
- Investors know this: thus they will not try to force default.

# Spanish Case

- Suppose investors fear default of Spanish government
  - They sell Spanish govt bonds (yields increase)
  - Proceeds of these sales are used to invest in other eurozone assets
  - No foreign exchange market and floating exchange rate to stop this
  - Spanish money stock declines; pool of liquidity for investing in Spanish govt bonds shrinks
  - No Spanish central bank that can be forced to buy Spanish government bonds
  - Liquidity crisis possible: Spanish government cannot fund bond issues at reasonable interest rate
  - Can be forced to default
  - Investors know this and will be tempted to try

- The situation of Spain is reminiscent of the situation of emerging economies that have to borrow in a foreign currency
- These emerging economies face the same problem:
  - they can suddenly be confronted with a "sudden stop" when capital inflows suddenly stop
  - leading to a liquidity crisis (see Calvo, et al. (2006), Eichengreen and Hausmann: Original Sin).

# Monetary union is fragile

- When investors distrust a particular member government:
  - they will sell the bonds,
  - thereby raising the interest rate and triggering a liquidity crisis.
- This may in turn set in motion a solvency problem:
  - with a higher interest rate the government debt burden increases,
  - forcing the government to reduce spending and increase taxation

- Such a forced budgetary austerity is politically costly,
- And may lead the government
  - to stop servicing the debt,
  - and to declare a default.
- By entering a monetary union:
  - member countries become vulnerable to movements of distrust by investors.

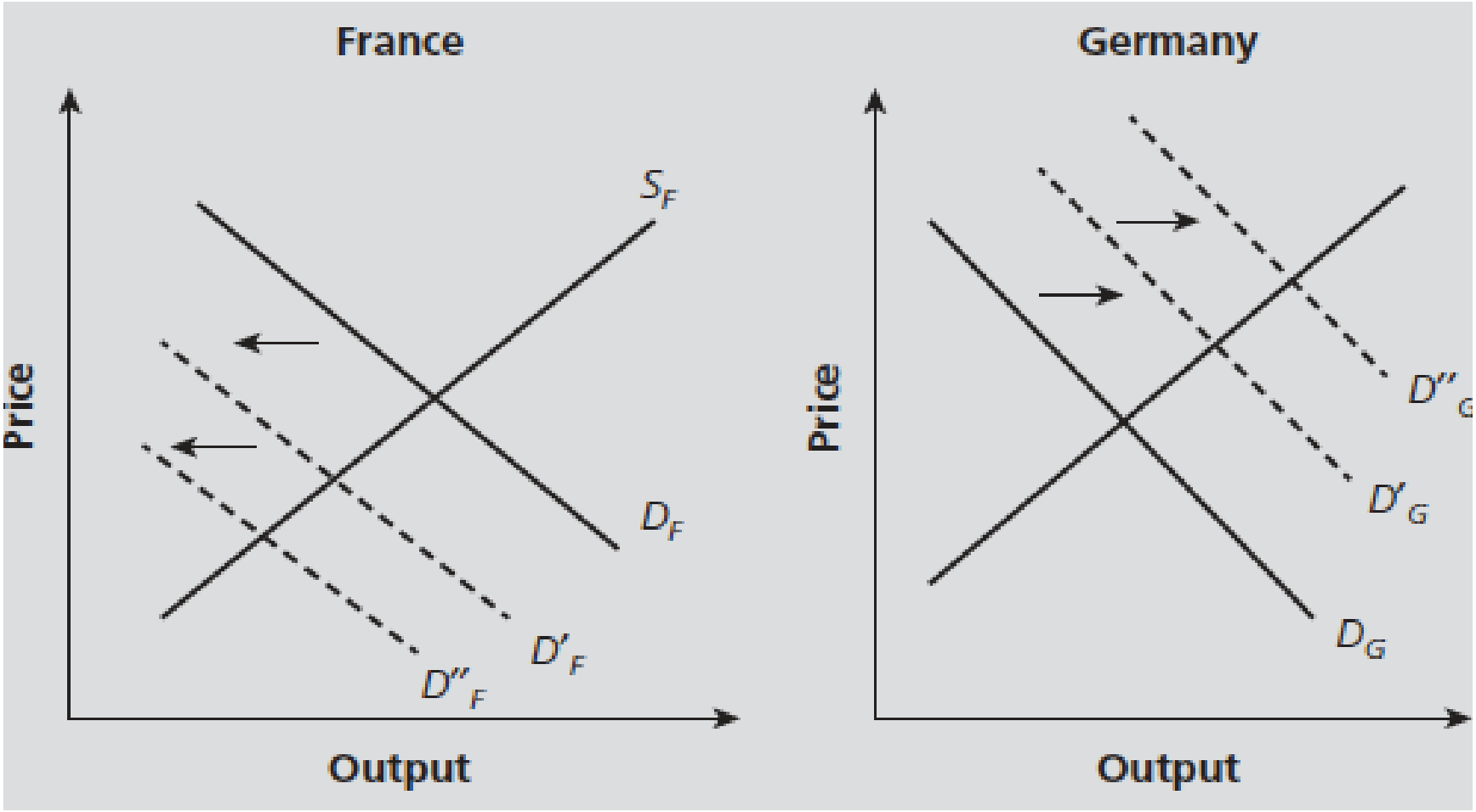
# Self-fulfilling Prophecy

- When financial markets start distrusting a particular government's ability (or willingness) to service its debt:
  - Investors sell the government bonds
  - This makes it more likely that the government will stop servicing the debt
- We come back to this feature of government debt crises in a later chapter

# 1.3 Asymmetric shocks and debt dynamics

- There is important interaction between asymmetric shocks and debt dynamics:
  - Negative shock in France increases budget deficit in France (due to automatic stabilizers)
  - If financial markets maintain trust in French government's solvency, same analysis as before
  - If markets lose trust in French government then asymmetric shock is amplified in France and in Germany

# Figure 1.5: Amplification of asymmetric shocks



# Negative amplification in France

- Investors sell French government bonds,
- leading to an increase in the interest rate and a liquidity crisis
- aggregate demand curve in France shifts further to the left,
  - i.e. with a higher interest rate in France, French residents will spend less on consumption and investment goods
- Debt crisis adds to the negative demand shock by further shifting the demand curve to $D''_F$

# Positive amplification in Germany

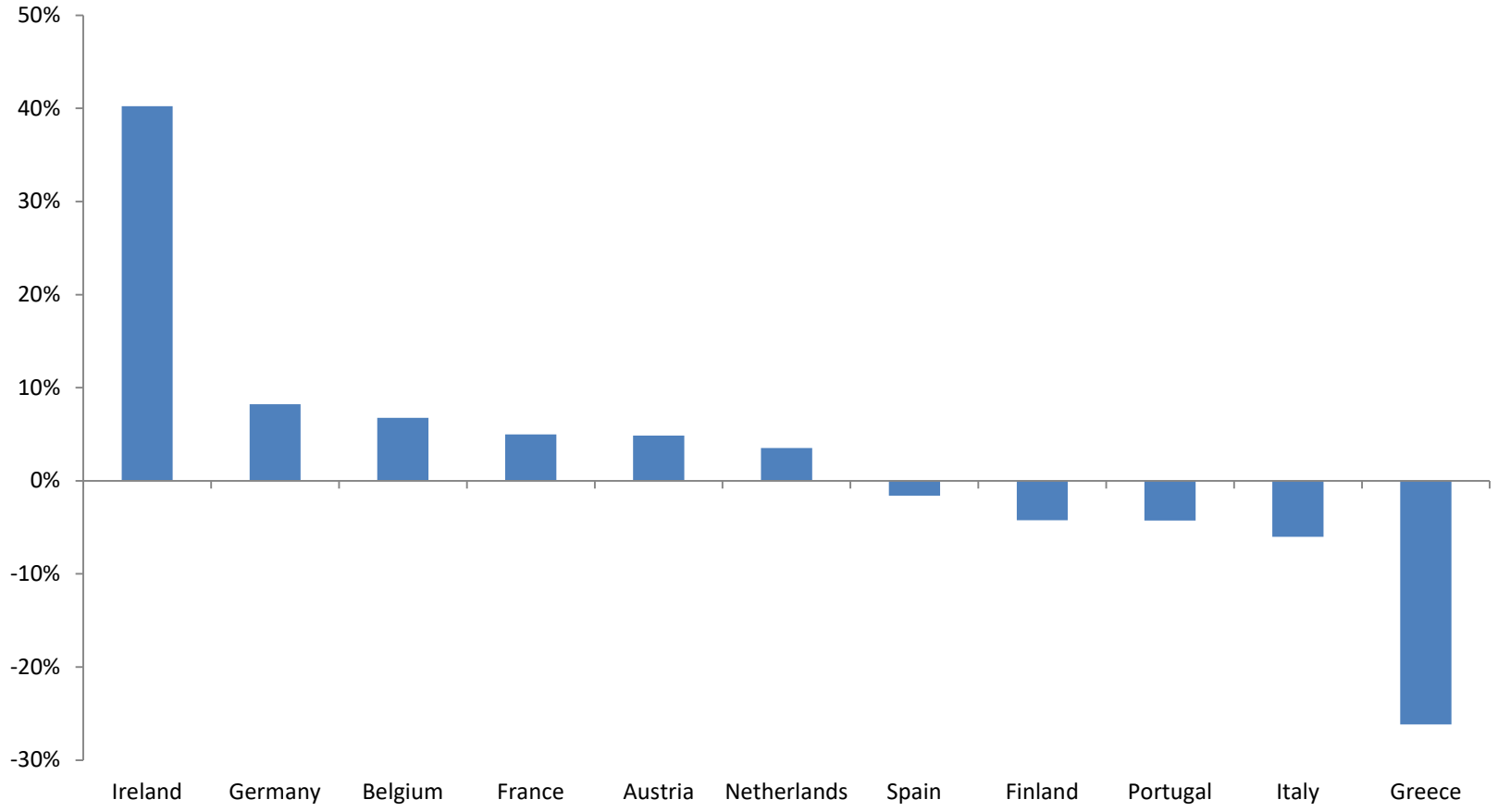
- When investors sell French bonds they are likely to buy German government bonds that they trust
- German government bond rate declines
- Aggregate demand curve shifts upwards in Germany
- Intensifying the boom
- Interest rate changes, instead of stabilizing the system, tend to destabilize it
- All this intensifies the adjustment problems of both countries

# Note on diverging interest rates in MU

- Shouldn't interest rates be the same in MU?
  - Yes for short term interest rate: this is the interest rate the common central bank sets for the whole union
  - No for long term government bond rates
  - These diverge if investors attach different risks of holding the different government bonds
- In example of France and Germany investors perceive a higher risk of default on French than on German government bonds

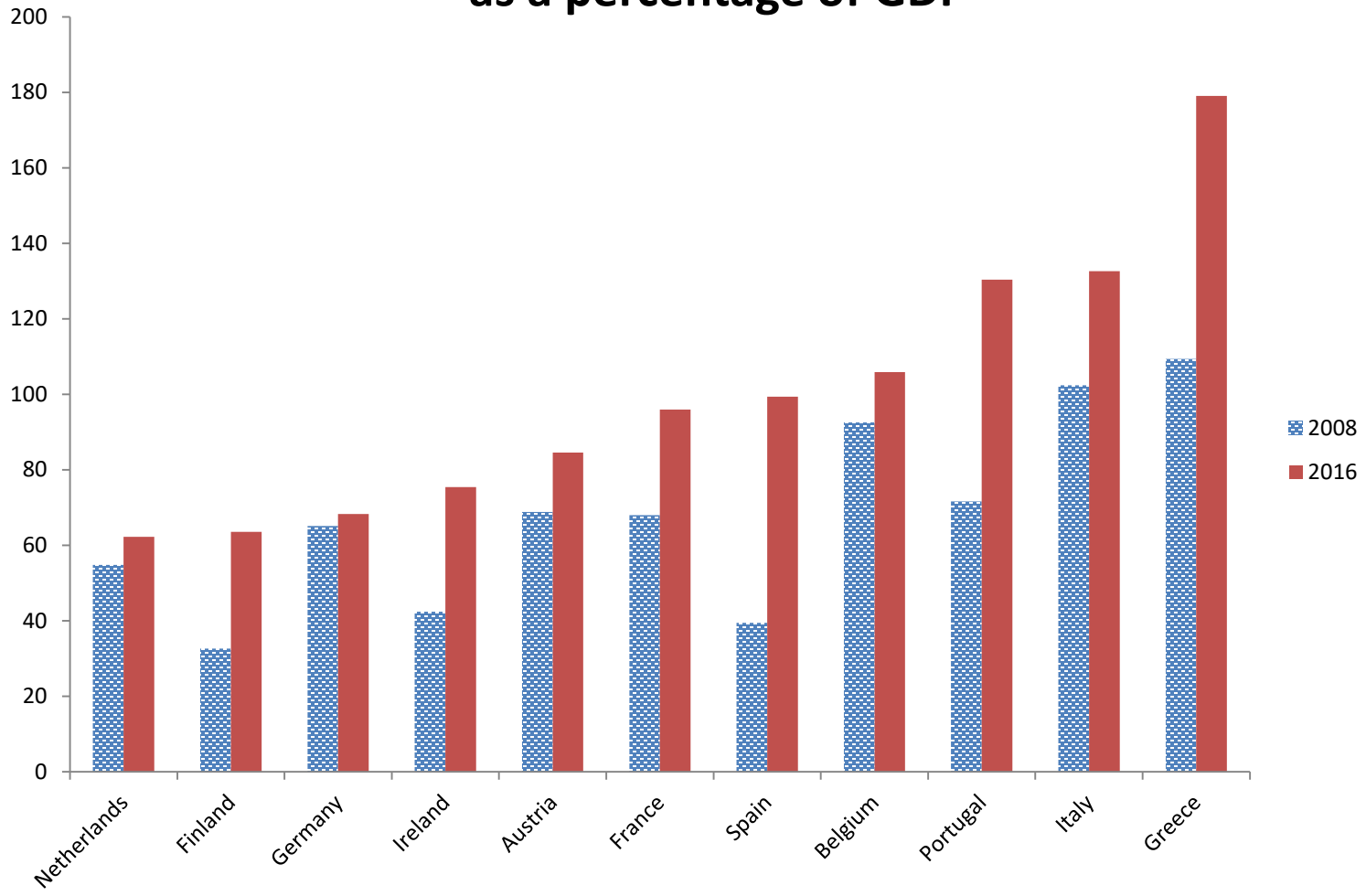
# Asymmetric shocks and debt accumulation in Eurozone 2008-2016

**Figure 1.6: Cumulative Growth 2008-2016**



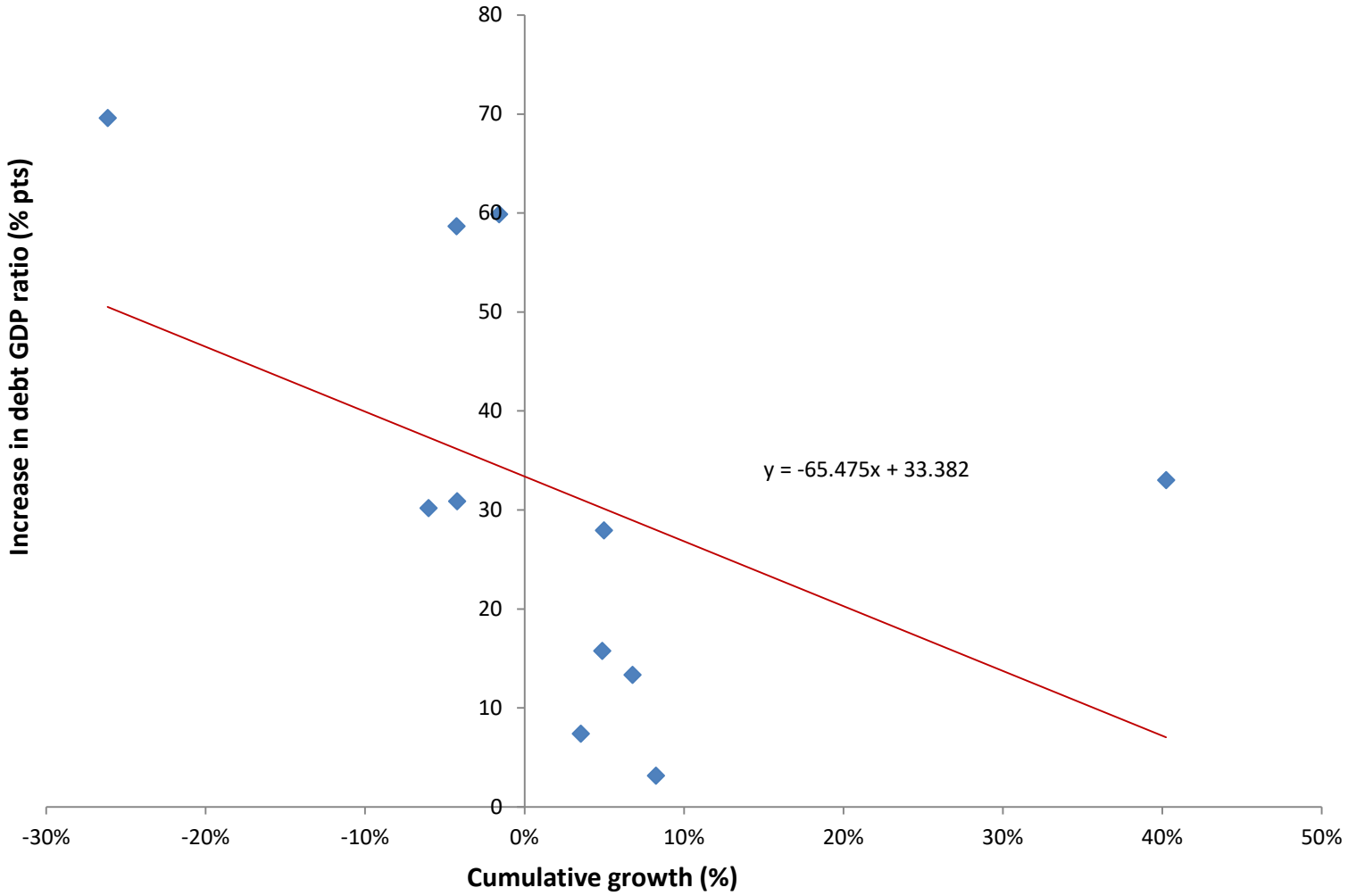

Source: European Commission, AMECO databank

# Figure 1.7 Government debt as a percentage of GDP



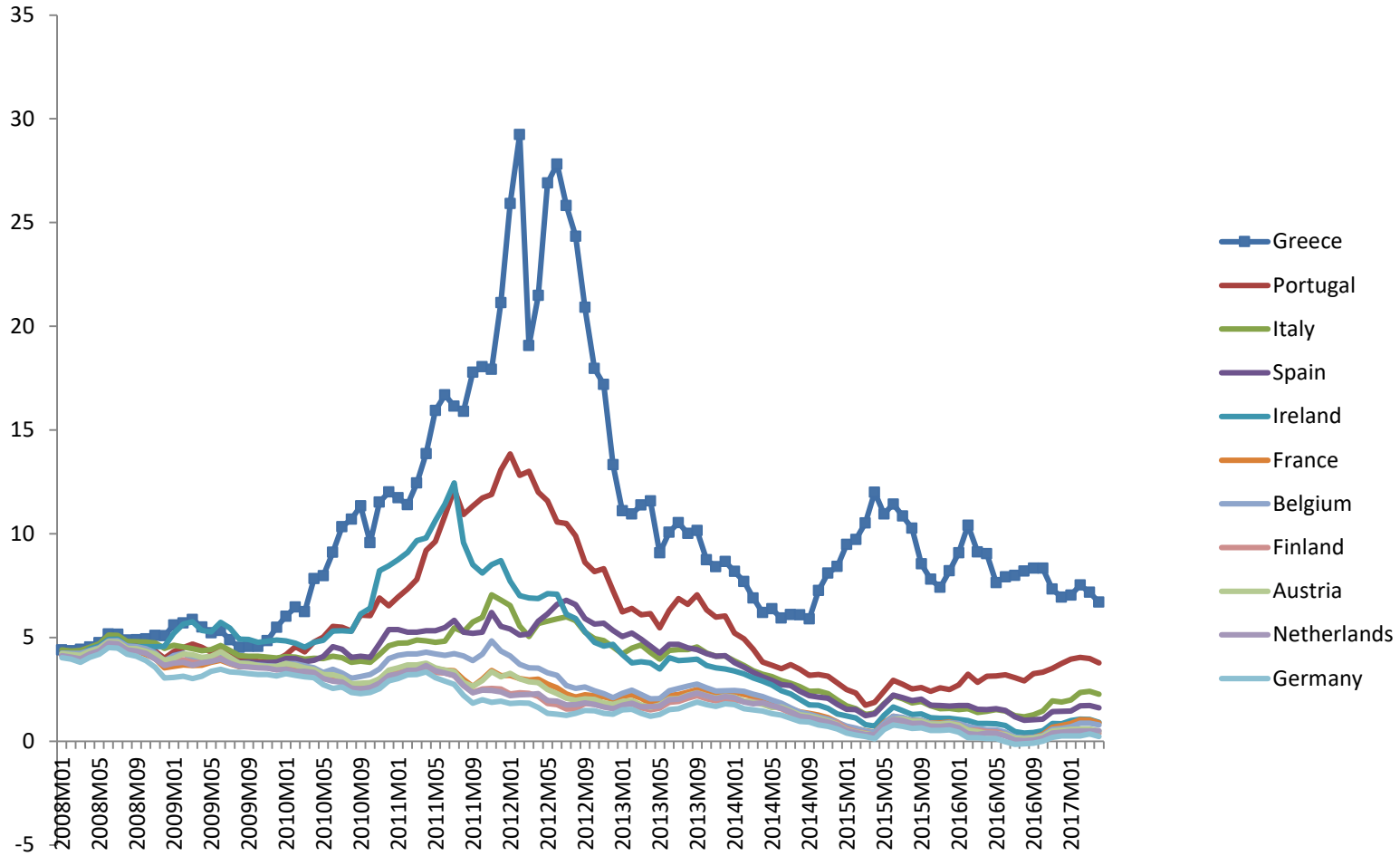

Source: European Commission, AMECO databank

# Figure 1.8 Cumulative growth and increase in debt ratios (2008-16)




Source: European Commission, AMECO databank

# Figure 1.9 Ten-year government bond yields




Source: European Commission, AMECO databank

# 1.4 Monetary union and budgetary union

- Monetary union can be very fragile
  - When hit by large asymmetric shocks, member states of the union face difficult adjustment problems.
  - negative asymmetric demand shocks lead to increasing budget deficits
  - financial markets may force a liquidity crisis on these countries
  - thereby amplifying the asymmetric shocks
- Can one design a mechanism that will alleviate these problems and thereby reduce the costs of a monetary union?

# There is such a mechanism: budgetary union

- This consists in centralizing a significant part of the national budgets into a common union budget
- This is a monetary union with a budgetary union
- Such a budgetary union achieves two things:
  1. It creates an insurance mechanism triggering income transfers from the country experiencing good times to the countries hit by bad luck
  2. It allows consolidating part of national government debts and deficits, thereby protecting its members from liquidity crises and forced defaults

# A budgetary union as an insurance mechanism.

- Centralized budget allows for automatic transfers between countries of monetary union
  - Can offset asymmetric shocks
  - Is largely absent at European level (European budget only 1% of EU-GDP
  - Exists at national level
  - Creates problems of moral hazard

# A budgetary union as a protection mechanism

- In a budgetary union, national government debts are centralized into a union government debt (or at least a significant part)
  - This creates a union government capable of forcing common central bank into providing liquidity in moments of crisis
  - The union government acquires the characteristics of a "stand alone" government, i.e. it issues debt in a currency over which it has full control
  - The union government cannot be confronted with a liquidity crisis (at least if the union maintains a flexible exchange rate with the rest of the word)

- Is there any prospect that Europe could move into such a budgetary union?
  - European Union's budget amounts to only 1.1% of EU GDP, while national budgets typically absorb 40% to 50% of GDP
  - There is little prospect for centralization of national budgets at the European level
  - Such a centralization would require a far-reaching degree of political unification

# Incomplete monetary unions

- Monetary union without a budgetary union functions in a very different way from a monetary union that is coupled with a budgetary union
- The former can be labeled an “incomplete monetary union, the latter a “full monetary union”
- We come back to this distinction in chapter 6:
  - We will analyze the fragility of incomplete monetary unions, and in particular of the Eurozone that is an incomplete monetary union

# Private insurance systems

- Integrated capital markets allow for automatic insurance against shocks
- Example: stock market
- Insurance mainly for the wealthy

# Other sources of asymmetry:

- 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)
  - Anglo-Saxon versus continental European financial markets

# Symmetric and asymmetric shocks compared

- When shocks are asymmetric
  - Monetary union creates costs compared to monetary independence
  - Common central bank cannot deal with these shocks

- When shocks are symmetric :
  - Monetary union  becomes more attractive compared to monetary independence
  - Common central bank can deal with these shocks
  - Monetary independence can then lead to conflicts and ‘beggar-my-neighbour’ policies

# Figure 1.4 Symmetric shocks