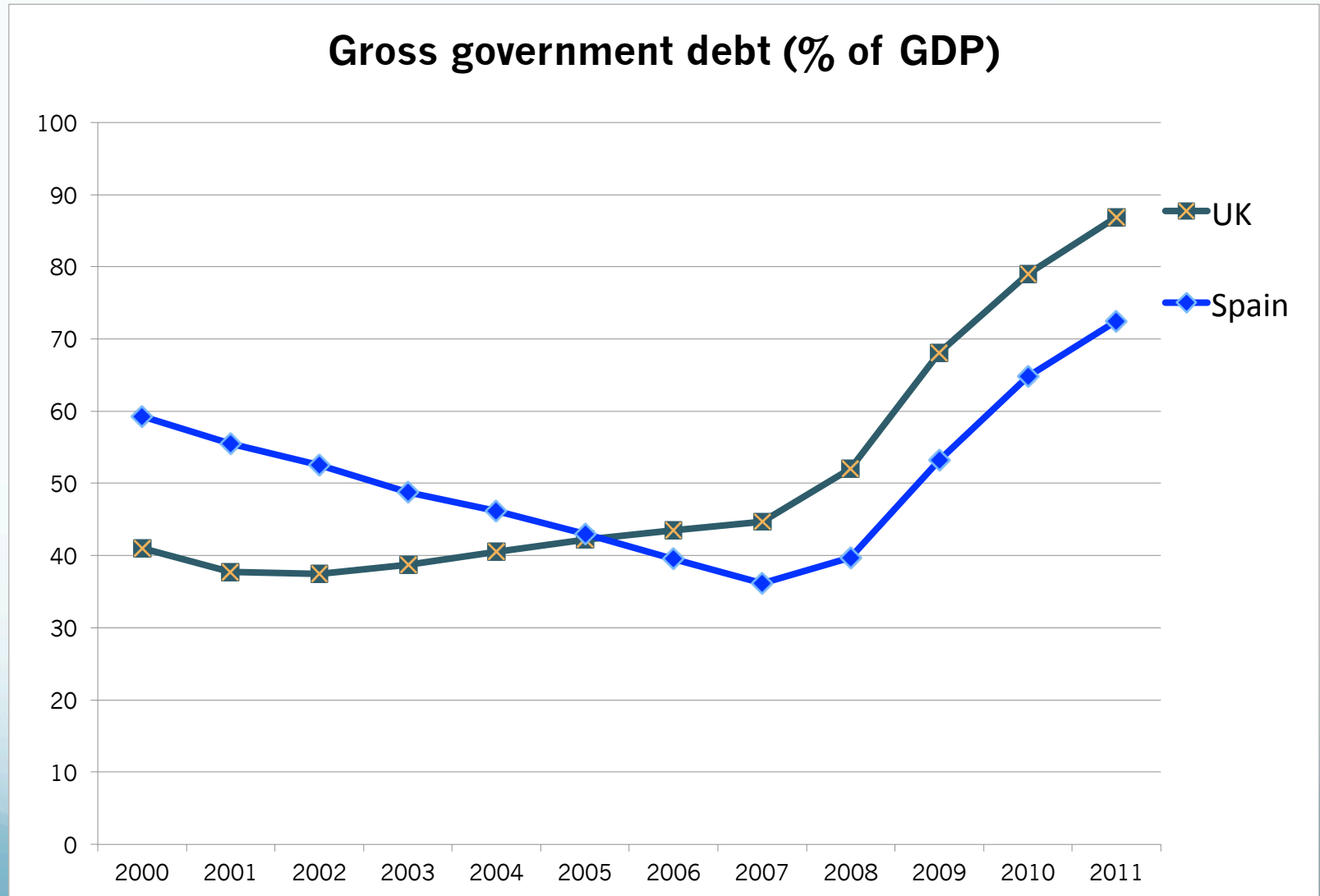


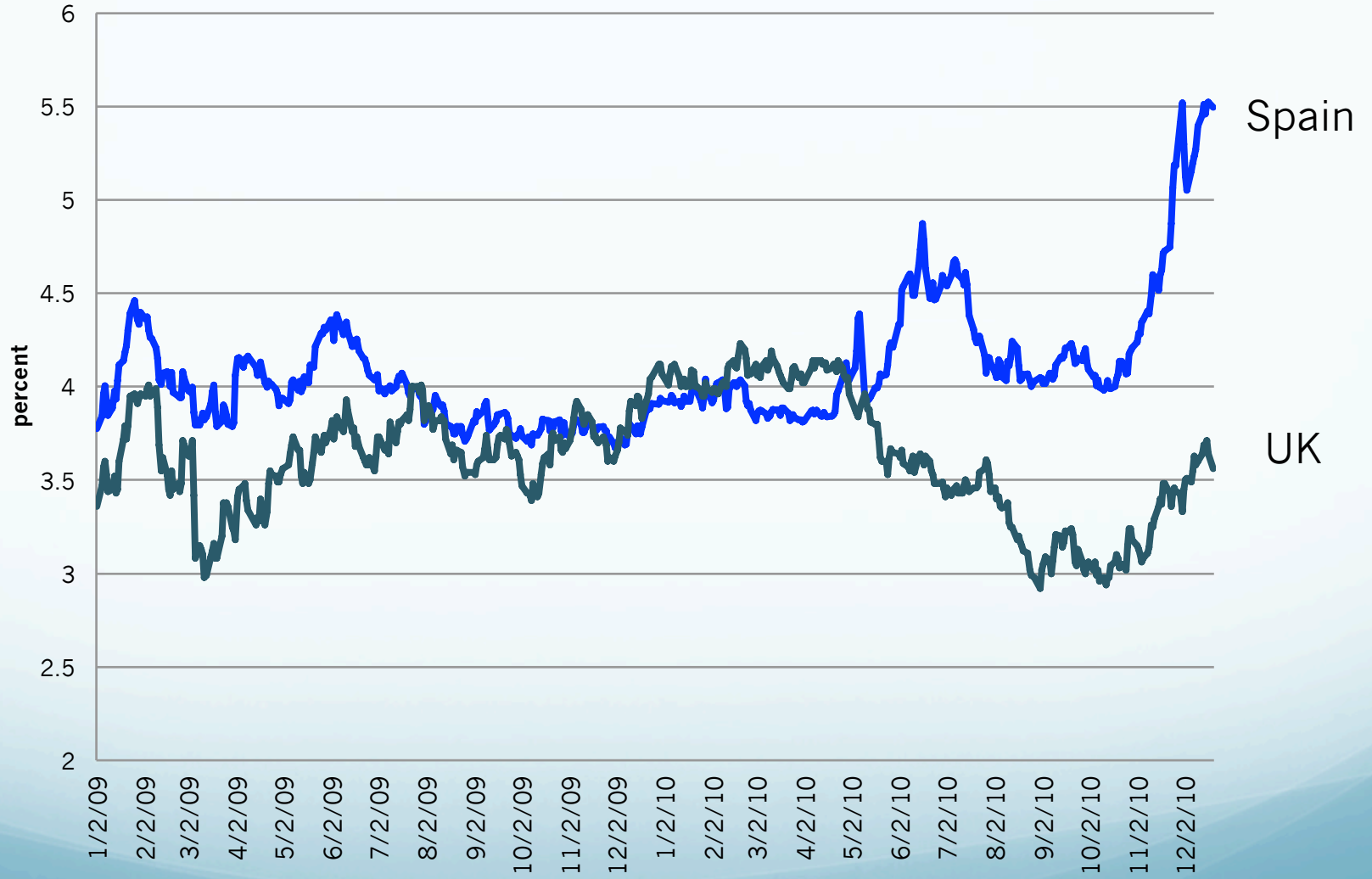
# The Sovereign Debt Crisis and the Future of the Eurozone

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# Paradox



10-year government bond rates Spain and UK



# Nature of monetary union

- 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
- Not so in countries that are not part of monetary union, and have kept control over the currency in which they issue debt.
- Consider case of UK and Spain

# 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

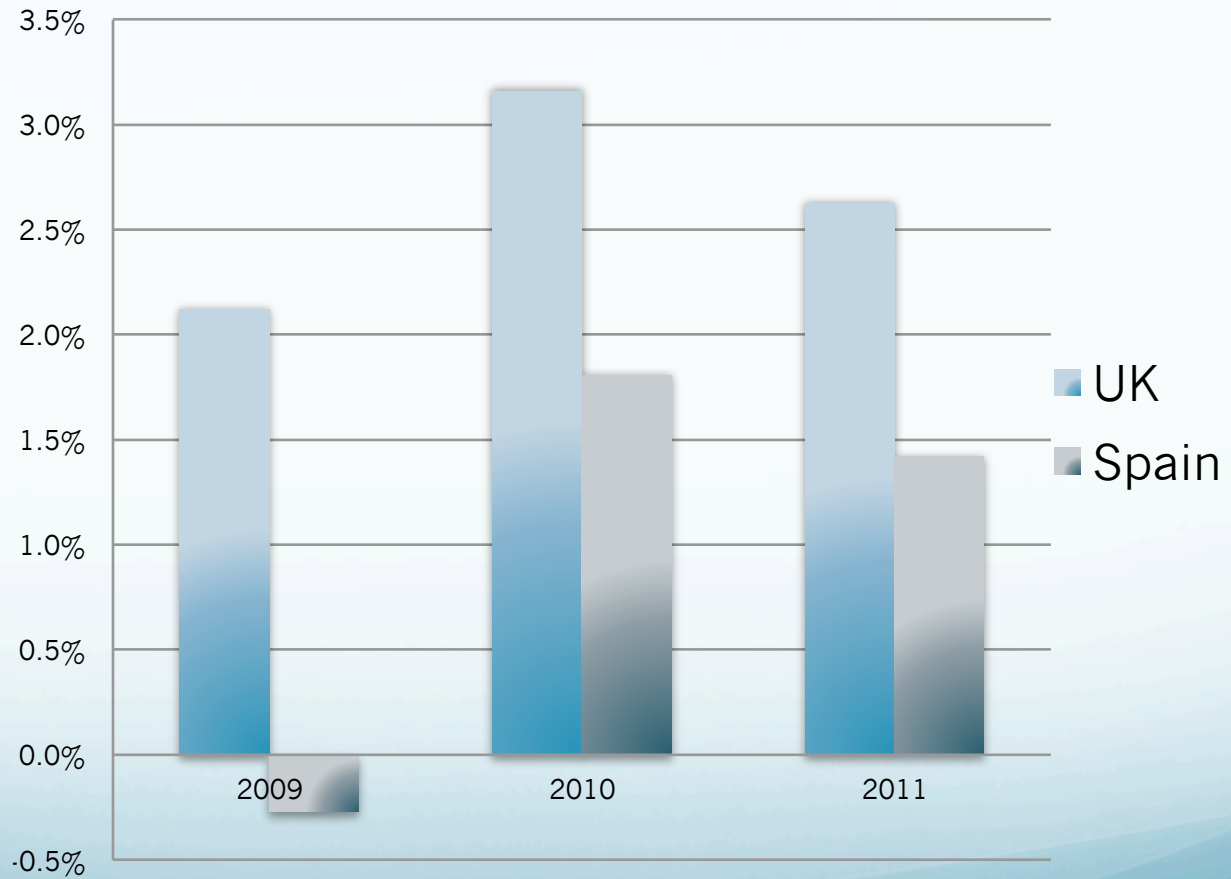
- Suppose investors fear default of Spanish government
  - They sell Spanish govt bonds (yields increase)
  - Proceeds of these sales are used to invest in other eurozone assets
  - No foreign exchange market and floating exchange rate to stop this
  - Spanish money stock declines; pool of liquidity 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

- Situation of Spain is reminiscent of situation of emerging economies that have to borrow in a foreign currency.
- These emerging economies face the same problem, i.e. 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).

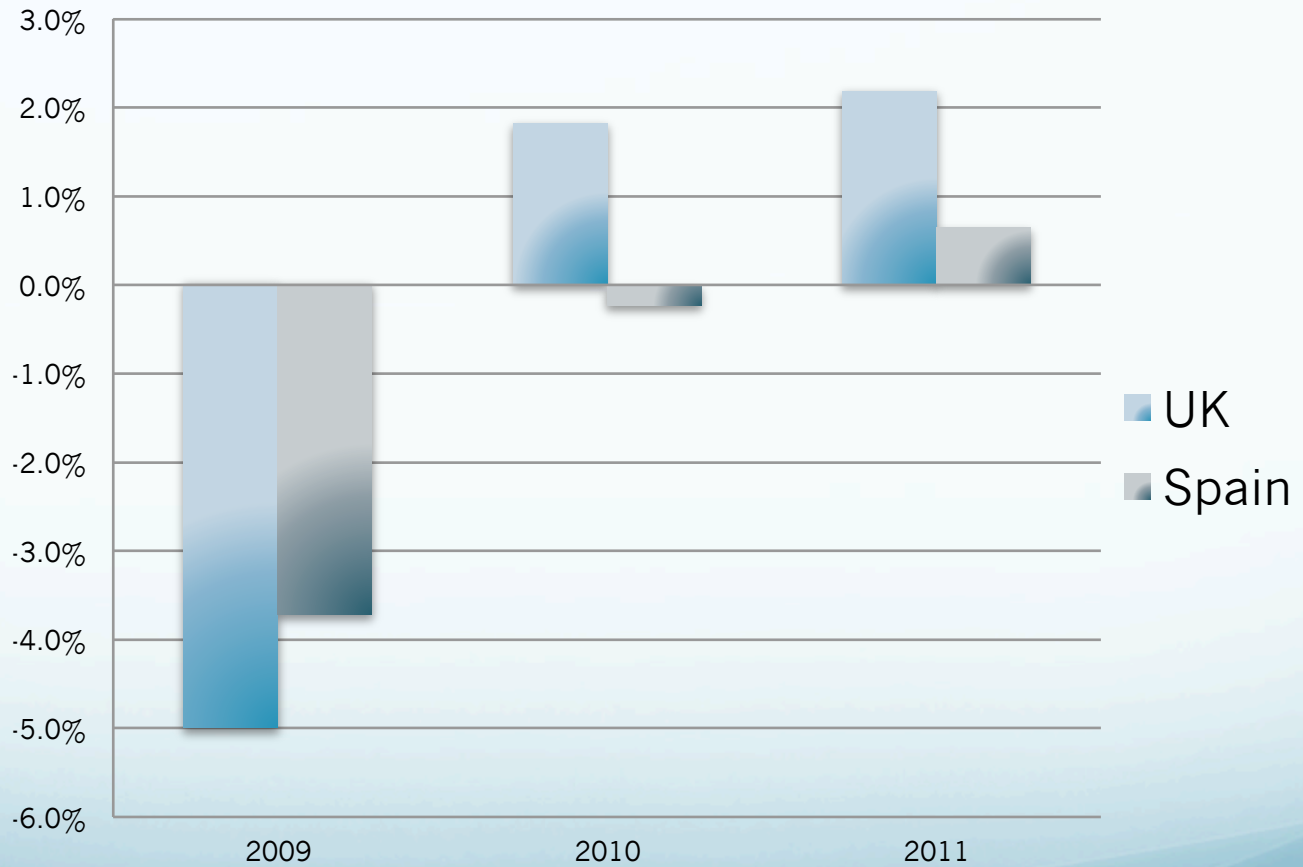
# Additional difference in the debt dynamics

- In UK case: currency depreciates
  - Increase in inflation
  - Stimulus to output growth
- In Spanish case: no currency depreciation
  - No increases in inflation or growth
- This has profound effect on debt dynamics

**Figure 3: Inflation in UK and Spain**



**Figure 4: Growth GDP in UK and Spain**



# Solvency calculation is affected

Primary surplus needed to stabilize debt ratio:

$$S \geq (r - g)D ,$$

$S$  = primary budget surplus,

$r$  = nominal interest rate on the government debt,

$g$  = nominal growth rate of the economy

$D$  = government debt to GDP ratio.

UK	-1,21
Spain	2,30

- Previous analysis illustrates important potentially destructive dynamics in a monetary union.
- Members of a monetary union are very susceptible to liquidity movements.
- When investors fear some payment difficulty (e.g. triggered by a recession), liquidity is withdrawn from the national market (a “sudden stop”).

- This can set in motion a devilish interaction between liquidity and solvency crises.
  - Once a member-country gets entangled in a liquidity crisis, interest rates are pushed up. Thus the liquidity crisis turns into a solvency crisis.
  - Investors can then claim that it was right to pull out the money from a particular national market.
- It is a self-fulfilling prophecy: the country has become insolvent only because investors fear insolvency.

- I am not arguing that all solvency problems in the Eurozone are of this nature.
  - In the case of Greece, for example, one can argue that the Greek government was insolvent before investors made their moves and triggered a liquidity crisis in May 2010.
- What I am arguing is that in a monetary union countries become vulnerable to self-fulfilling movements of distrust that set in motion a devilish interaction between liquidity and solvency crises.

# Implications

- Financial markets acquire great power in monetary union.
- Will this power be beneficial for the union?
- Believers in market efficiency say yes: it will be a disciplining force.
- Doubtful, given that financial markets are often driven by extreme sentiments of either euphoria or panic
- More fundamentally: potential for multiple equilibria (good and bad ones) arise in a monetary union

# Multiple equilibria

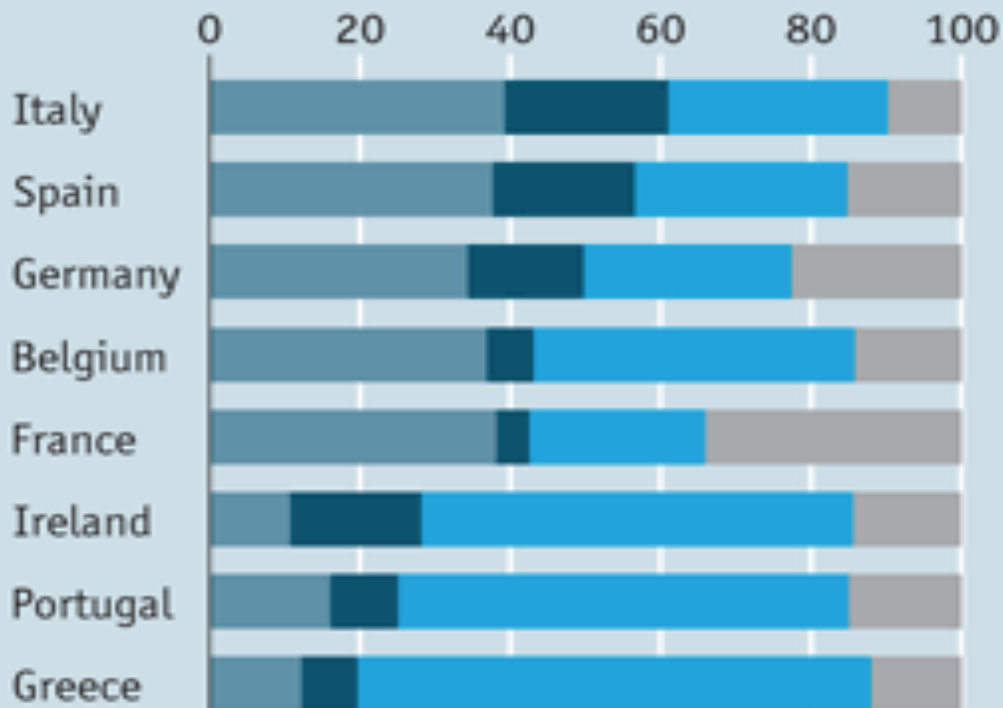
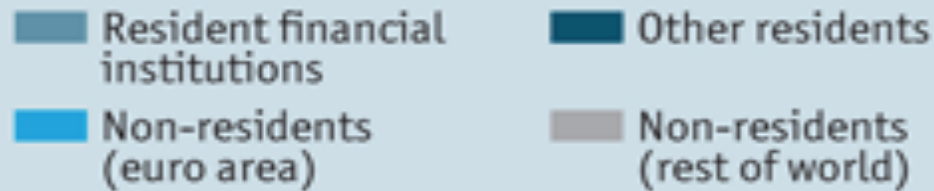
- Multiple equilibria arise because of self-fulfilling prophecies inherent in market outcomes
- Suppose markets trust government A: willingness to buy bonds at low interest rate; risk of default is low; market was right to trust that government;  
**good equilibrium**

- Suppose market distrusts government B. Bonds are sold, raising yield; as a result, probability of default increases; markets were right to distrust government B; **bad equilibrium**
- This effect is amplified when government B belongs to monetary union: in that case the distrust leads to liquidity squeeze making it impossible for government B to fund its bond issues at reasonable interest rate
- This can lead to forced default

# Additional complication: contagion

## Outside pressure

Government-debt holders, latest, % of total



Source: Barclays Capital

Monetary union increases financial integration dramatically

# Contagion and externalities

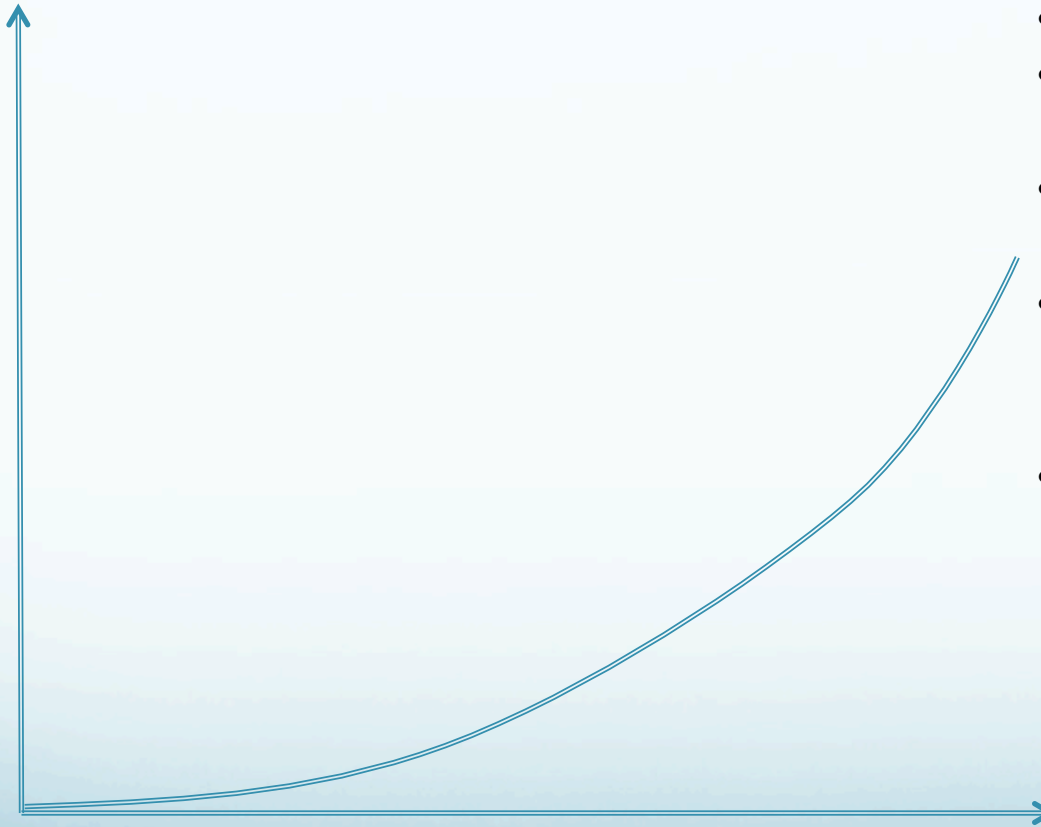
- Thus when market forces bad equilibrium on some member countries it affects financial markets and banking sectors in other countries enjoying good equilibrium
- These externalities are great force of instability that can only be overcome by government action.
- I'll return to this in a moment

# Model with good and bad equilibrium

- Starting point is: there is a cost and a benefit of defaulting on the debt,
- Investors take this calculus of the sovereign into account.
- I will assume that the country involved is subject to a shock, which takes the form of a decline in government revenues.
  - The latter may be caused by a recession, or a loss of competitiveness.
- I'll call this a solvency shock.

# Benefits of default

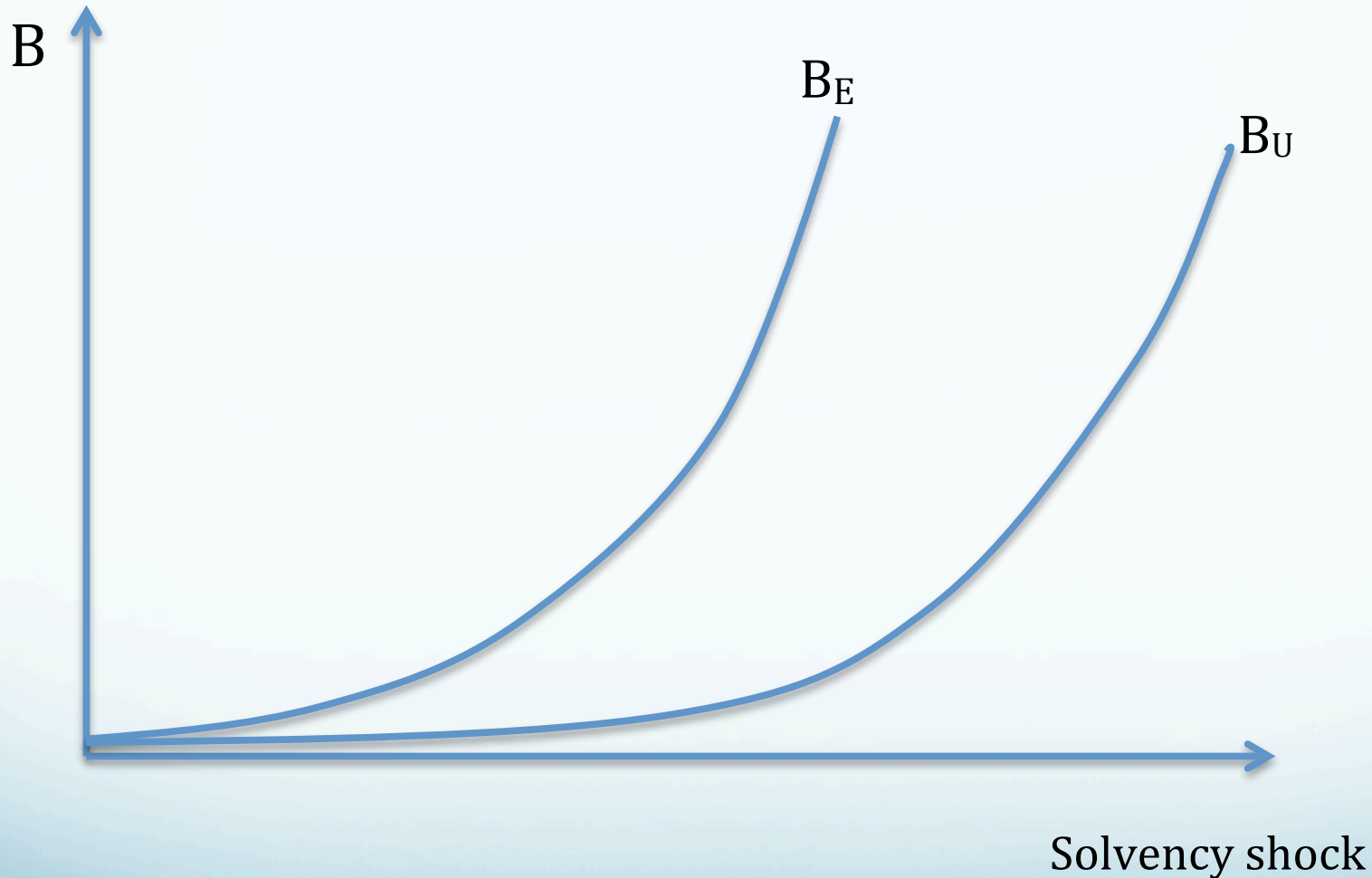
benefits



- Benefit of default:
- Government reduces interest burden;
- Cost of taxation reduced
- Benefit increases with size of solvency shock
- And size of govt debt

Solvency shock

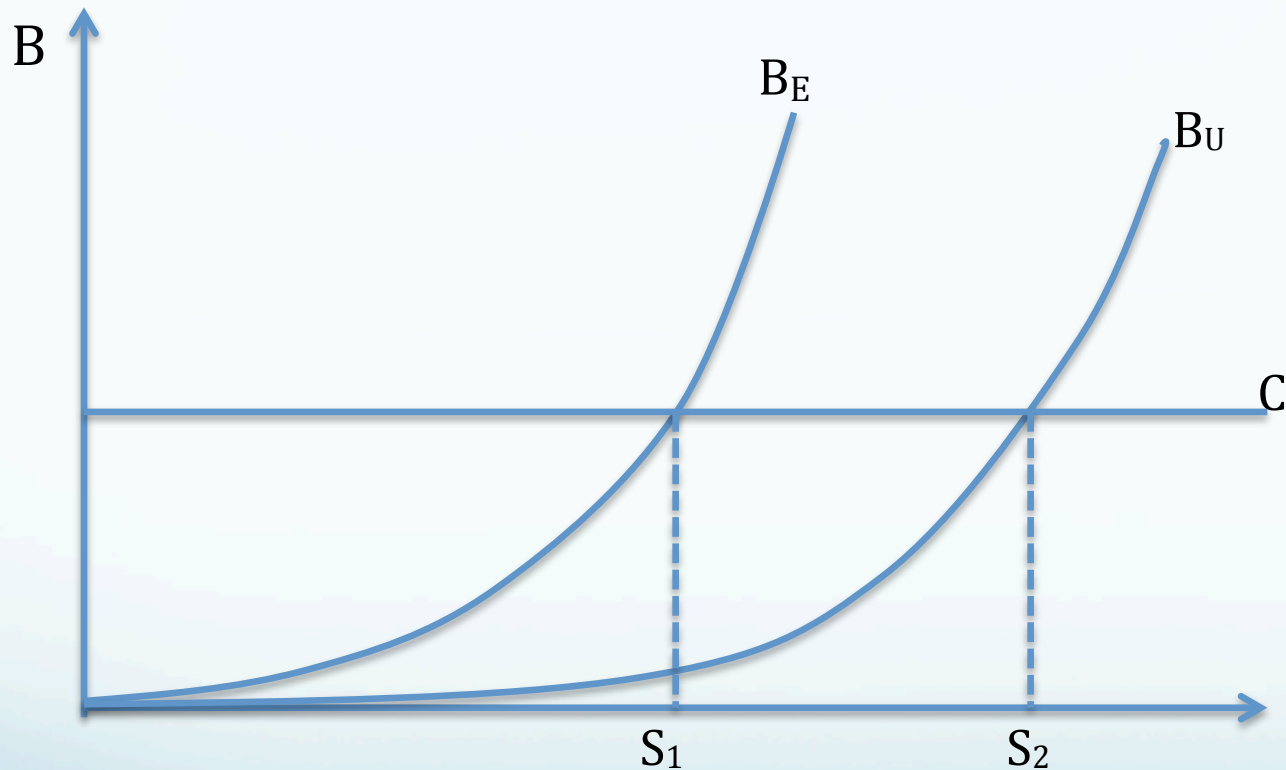
# Two benefit curves



$B_U$  = Benefit when default is not expected

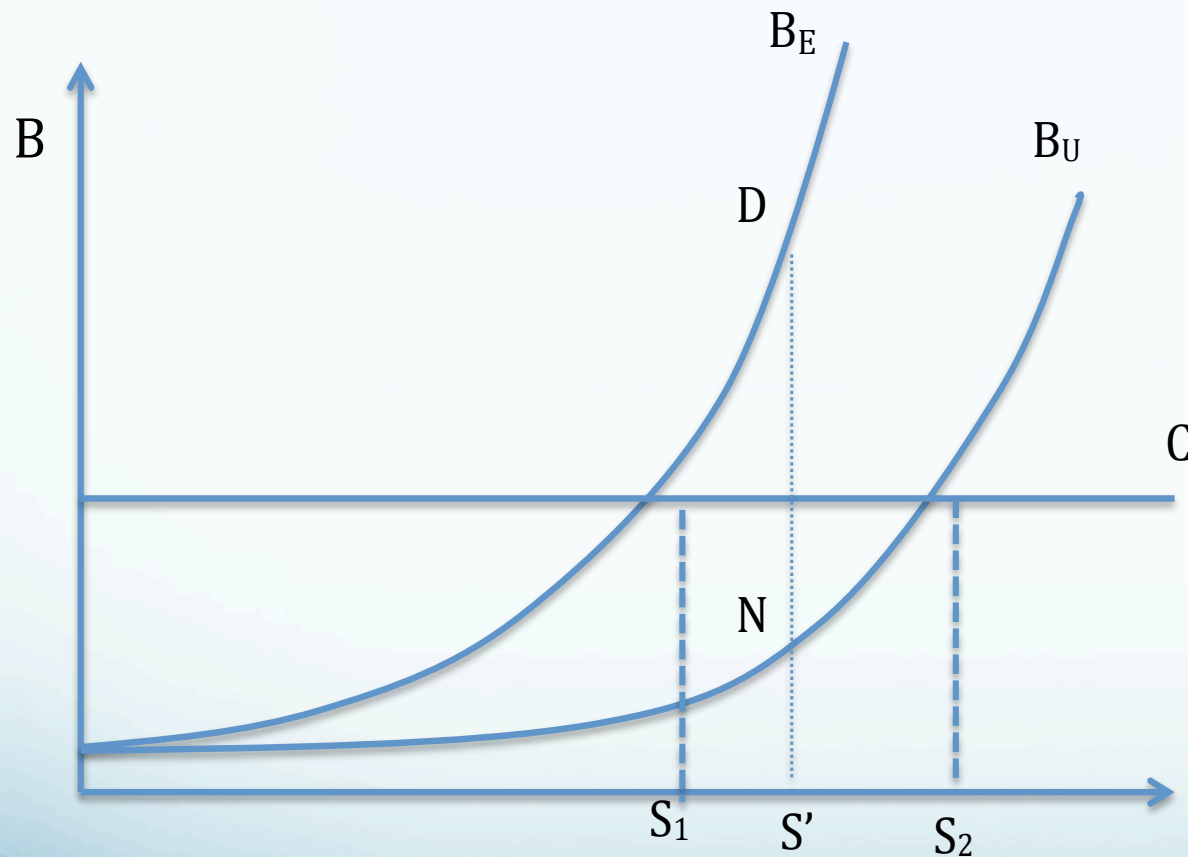
$B_E$  = Benefit when default is expected

# Cost and benefit of default



Cost arises because of loss of reputation and thus difficulties to borrow in the future

# Three types of shocks



Small shock:  $S < S_1$

There will be no default  
because cost exceeds  
benefits,  
Consistent with expectations

Large shock:  $S > S_2$ .

Default is certain because  
benefits exceed costs  
Consistent with expectations

Intermediate shock:

$$S_1 < S < S_2$$

Two equilibria: N and D  
Both consistent with  
expectations

- When solvency shock is not too small nor too large:
- One obtains two possible equilibria:
  - a bad one (D) that leads to default,
  - a good one (N ) that does not lead to default.
- Both are equally possible.
- The selection of one of these two points only depends on what investors expect.
  - If the latter expect a default, there will be one;
  - if they do not expect a default there will be none.
  - This remarkable result is due to the self-fulfilling nature of expectations.
- We have coordination failure

# The bad news about a bad equilibrium

- Banking crisis
- Automatic stabilizers switched off

# Banking crisis

- When investors pull out from domestic bond market, interest rate on government bonds increases, and prices plunge; domestic banks make large losses.
- Domestic banks are caught up in a funding problem.
  - As argued earlier, domestic liquidity dries up (the money stock declines)
  - making it difficult for the domestic banks to rollover their deposits, except by paying prohibitive interest rates.
- Thus the sovereign debt crisis spills over into a domestic banking crisis, even if the domestic banks were sound to start with.

# Automatic stabilizers are switched off in MU

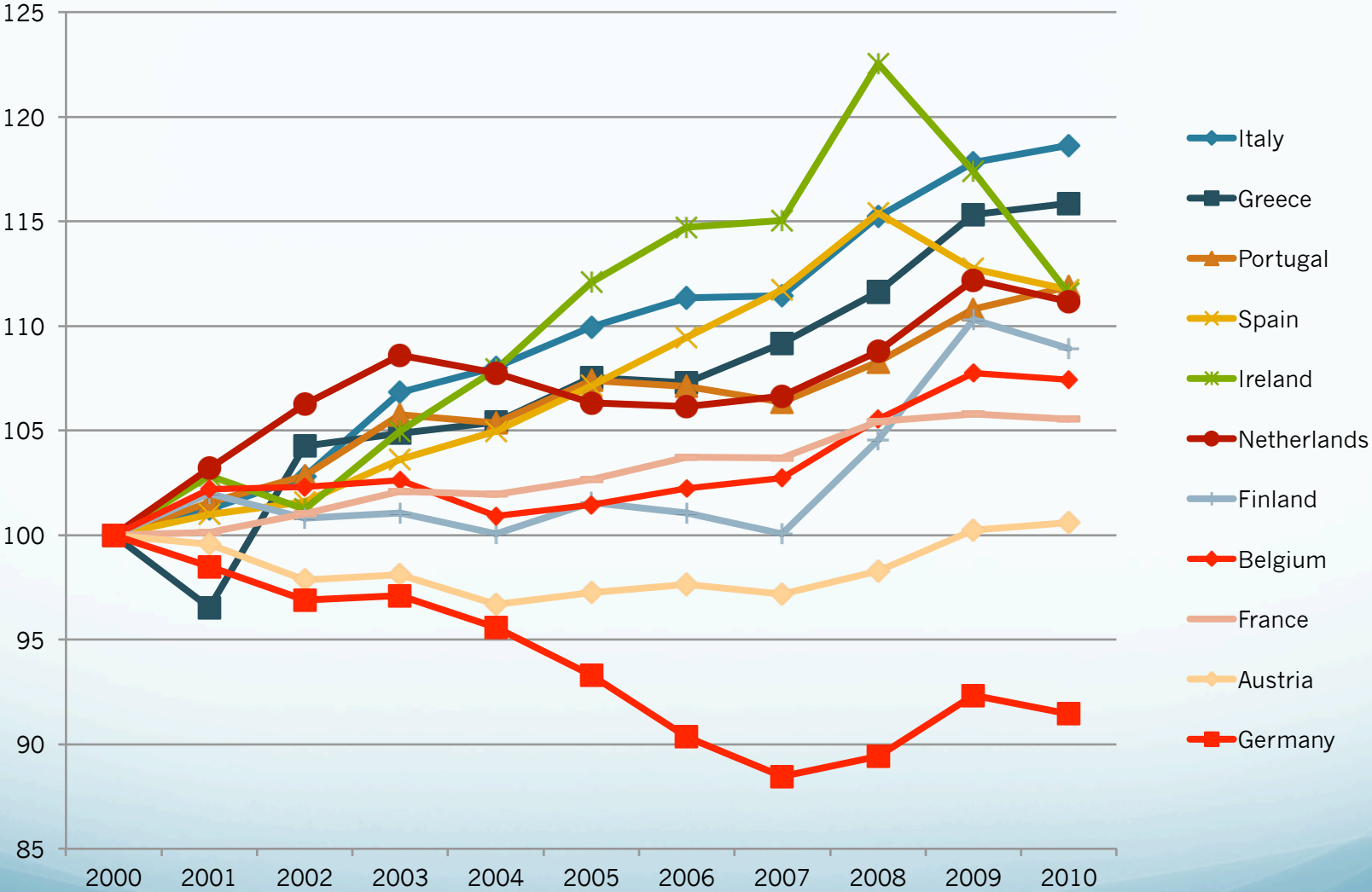
- This dynamics makes it very difficult for members of monetary union to use automatic budget stabilizers.
- A recession leads to higher government budget deficits.
- This in turn leads to distrust of markets in the capacity of governments to service their future debt, triggering a liquidity and solvency crisis,
- which in turn forces them to institute austerity programs in the midst of a recession.

- In the stand-alone country (UK) this does not happen because the distrust generated by higher budget deficit triggers a stabilizing mechanism.
- Member countries of a monetary union are downgraded to the status of emerging economies, which find it difficult if not impossible to use budgetary policies to stabilize the business cycle.
- This feature has been shown to produce pronounced booms and busts in emerging economies (see Eichengreen, et al. (2005)).

# Competitiveness and sovereign debt

- one of the fundamental imbalances in the Eurozone is the increased divergence in competitive positions of the members of the Eurozone since 2000.

Figure 5: Relative unit labor costs Eurozone (2000=100)



- Countries that lost competitiveness from 1999 to 2008 (Greece, Portugal, Spain, Ireland) have to start improving it.
- Given the impossibility of using a devaluation of the currency, an internal devaluation must be engineered, i.e. wages and prices must be brought down relative to those of the competitors.
- This can only be achieved by deflationary macroeconomic policies (mainly budgetary policies).
- Inevitably, this will first lead to a recession and thus (through the operation of the automatic stabilizers) to increases in budget deficits.

- Period during which countries try to improve their competitiveness is likely to be painful and turbulent:
- *Painful*, because of the recession and the ensuing increase in unemployment;
- *Turbulent*, because during the adjustment period, the country can be hit by a sovereign debt crisis.
  - deflationary spiral is bound to be intensified.
  - domestic long term interest rate increases
  - forcing the authorities to apply even more budgetary austerity,
  - which in turn leads to an even more intense recession.
  - The country can find itself stuck in a bad equilibrium,

# What kind of government action?

- Two problems of monetary union require government action.
- First, there is a **coordination failure**.
  - Financial markets can drive countries into a bad equilibrium that is the result of a self-fulfilling mechanism.
  - This coordination failure can in principle be solved by collective action aimed at steering countries towards a good equilibrium.
- Second, the Eurozone creates **externalities** (mainly through contagion).
  - Like with all externalities, government action must consist in internalizing these.
- Collective action and internalization can be taken at two levels.
  - One is at the level of the central banks;
  - the other at the level of the government budgets.

# At the level of the central bank

- Liquidity crises are avoided in stand-alone countries that issue debt in their own currencies mainly because central bank will provide all the necessary liquidity to sovereign.
- This outcome can also be achieved in a monetary union if the common central bank is willing to buy the different sovereigns' debt.
- This is what happened in the Eurozone during the debt crisis.
- The ECB bought government bonds of distressed member-countries,
  - either directly,
  - or indirectly by the fact that it accepted bonds as collateral in its support of the banks from the same distressed countries.

- In doing so, the ECB rechanneled liquidity to countries hit by a liquidity crisis,
- and prevented the centrifugal forces created by financial markets from breaking up the Eurozone.
- It was the right policy for a central bank whose “raison d’être” it is to preserve the monetary union.
- Yet, the ECB has been severely criticized for saving the Eurozone this way.
- This criticism has been powerful enough to convince the ECB that it should not be involved in such liquidity operation, and that instead the liquidity support must be done by other institutions, in particular a European Monetary Fund. I return to this issue

# At the level of the budget

- Collective action and internalization can also be taken at the budgetary level.
- Ideally, a budgetary union is instrument of collective action and internalization.
- By consolidating (centralizing) national government budgets into one central budget a mechanism of automatic transfers can be organized.
  - This works as insurance mechanism transferring resources to the country hit by a negative economic shock.
- Such a consolidation creates a common fiscal authority that can issue debt in a currency under the control of that authority.
  - This protects member states from being forced into default by financial markets.

# But...

- Budgetary centralization requires far-reaching degree of political union.
- There is no willingness in Europe today to significantly increase the degree of political union.
- This unwillingness to go in the direction of more political union will continue to make the Eurozone a fragile construction.
- This does not mean, however, that one should despair. We can move forward by taking small steps.

# So what can be done?

- European Monetary Fund (ESM) as crisis management tool
- Common Eurobond issue as crisis prevention mechanism
- Mutual control on economic policies
- But also greater responsibility of ECB to prevent excessive bank credit creation at national level

# European Monetary Fund as crisis management tool

- Allows liquidity that has fled one country to be rechanneled towards that country
- Thus funding of Fund must be ample to discourage speculation
- Obviously conditionality must be attached
- but one can easily attach too much conditionality
- as is the case with the EFSF
- because too much focus on moral hazard
- And therefore urge to punish, i.e. to teach a lesson

# Moral Hazard

- Moral hazard is serious problem
- but has received too much attention
- at the expense of systemic problem
- Thereby endangering the survival of the Eurozone
- Financial solidarity is essential
- Monetary union forces member countries to show some solidarity, whether they like it or not.

- In addition, problems of Ireland and Spain have nothing to do with moral hazard
- These countries got into trouble not because their governments followed irresponsible fiscal policies
- hoping to be bailed out by the others
- Their problem arose from unsustainable private debt explosion
- Made possible by excessive bank credit

# Collective action clauses

- Moral hazard thinking has also led to imposing additional conditions in ESM-lending,
- i.e. to attach collective action clauses in future sovereign bond issues
- This is also inspired by the idea that people have to be threatened by punishment to behave well.
- The trouble is that bond holders can easily escape punishment by selling the bonds before punishment is applied
- This “running for cover” will however trigger crises

- Thus CACs will lead to more speculative movements triggered by fears of default
- Countries will regularly be hit by negative shocks leading to surges in budget deficits
- Each time, this will trigger financial instability induced by fears of default, and “running for cover” reaction.
- CACs downgrade the member countries of Eurozone to “emerging country” status

# Joint Eurobond issue as a crisis prevention tool

- This is essential in reducing excessive power of financial markets in destabilizing a monetary union
- And in internalizing the externalities created by financial markets
- Will be difficult because mutual trust is lacking

# Objections to Eurobonds

- The proposal of issuing common Eurobonds has met stiff resistance in a number of countries.
- This resistance is understandable.
- A common Eurobond creates a number of serious problems that have to be addressed

# Moral hazard

- Common Eurobond issue contains an implicit insurance for the participating countries.
- Since countries are collectively responsible for the joint debt issue, an incentive is created for countries to rely on this implicit insurance and to issue too much debt.
- This creates a lot of resistance in the other countries that behave responsibly.
- This moral hazard risk should be resolved.

# Low attractiveness for AAA-countries

- What are the benefits for AAA-countries?
- By joining a common bond mechanism that will include countries enjoying less favourable credit ratings, countries like Germany, Finland and the Netherlands may actually have to pay a higher interest rate on their debt.

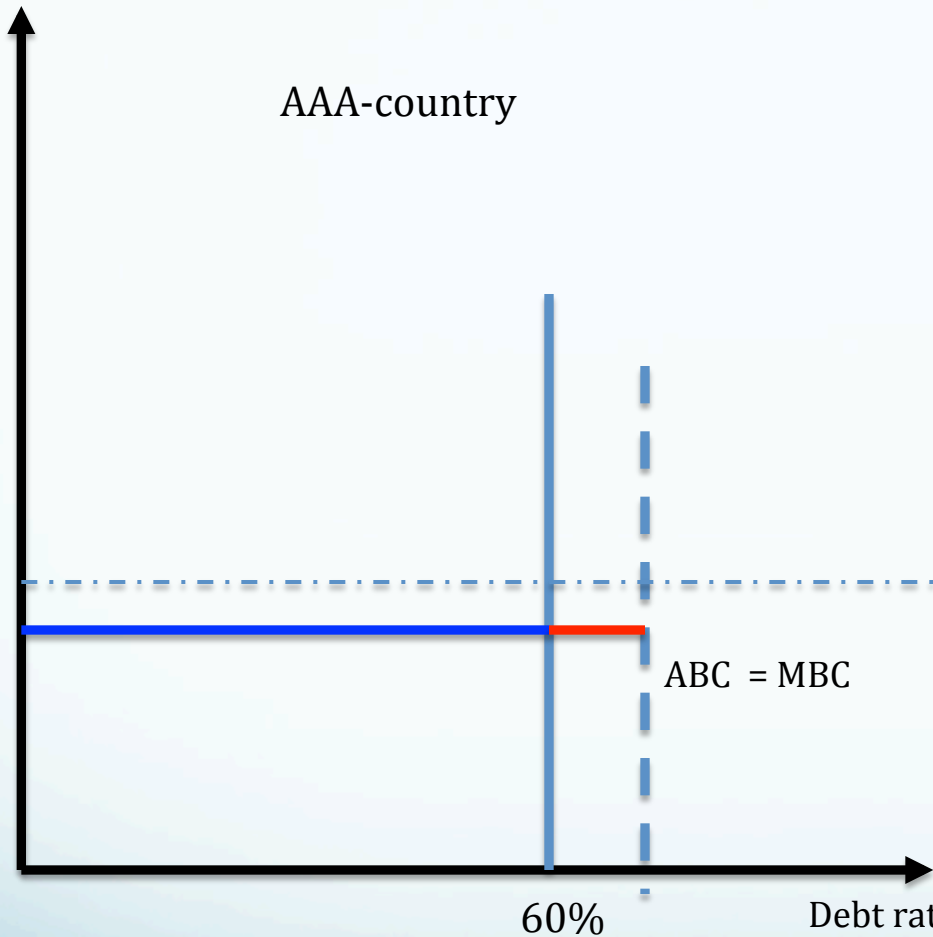
# The design of common Eurobonds

- Should take care of these objections
- This can be achieved by working both on the quantities and the pricing of the Eurobonds
- A combination of
  - Blue and red bonds (Bruegel): participation in common eurobond limited to given % of GDP (blue bond; senior); the rest is red bond (junior).
  - Differential interest rates (De Grauwe and Moesen): countries pay an interest rate related to fiscal position

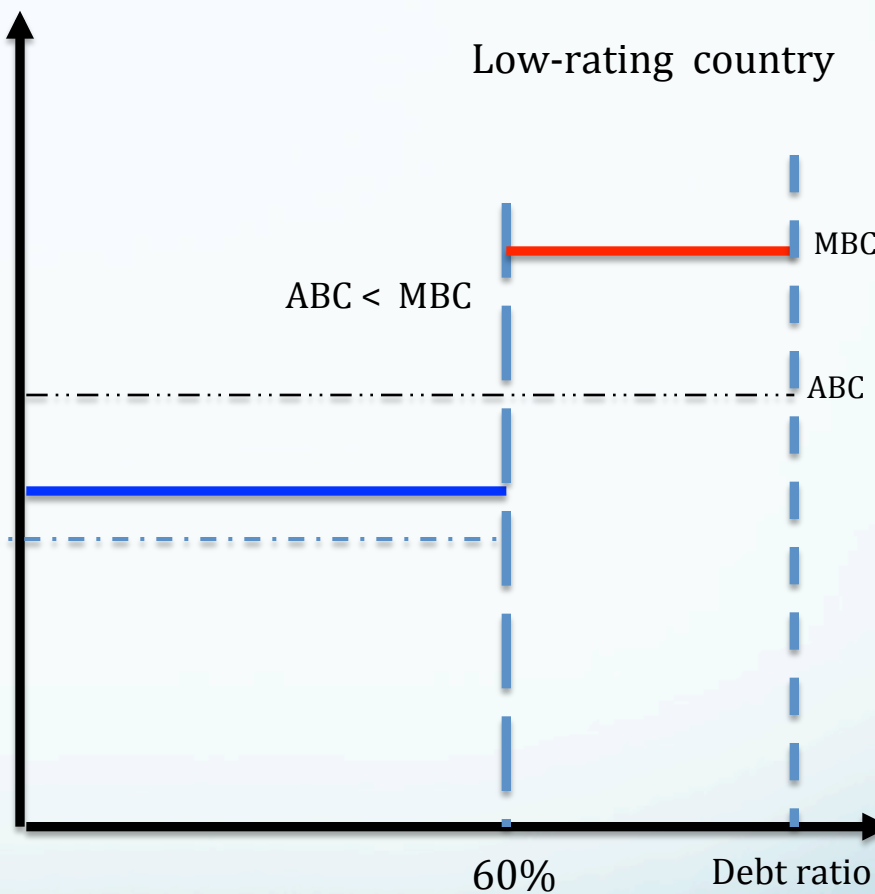
- Such a design minimizes moral hazard risk
- Makes it attractive for AAA-countries (they face low average and marginal borrowing cost)
- and for lower rated countries (they face relatively low average borrowing costs but high marginal costs).
- This design gives the right incentives to low rated countries

# Optimal Design of eurobond

Interest rate



Interest rate



ABC = average borrowing cost

MBC = marginal borrowing cost

# Coordination of national economic policies

- While monetary policy is fully centralized, the other instruments of economic policies have remained firmly in the hands of the national governments
- This is a serious design failure of the Eurozone.
- Ideally, countries should hand over sovereignty over the use of these instruments to European institutions.
- However, the willingness to take such a drastic step towards political union is completely absent.
- Here also small steps should be taken.

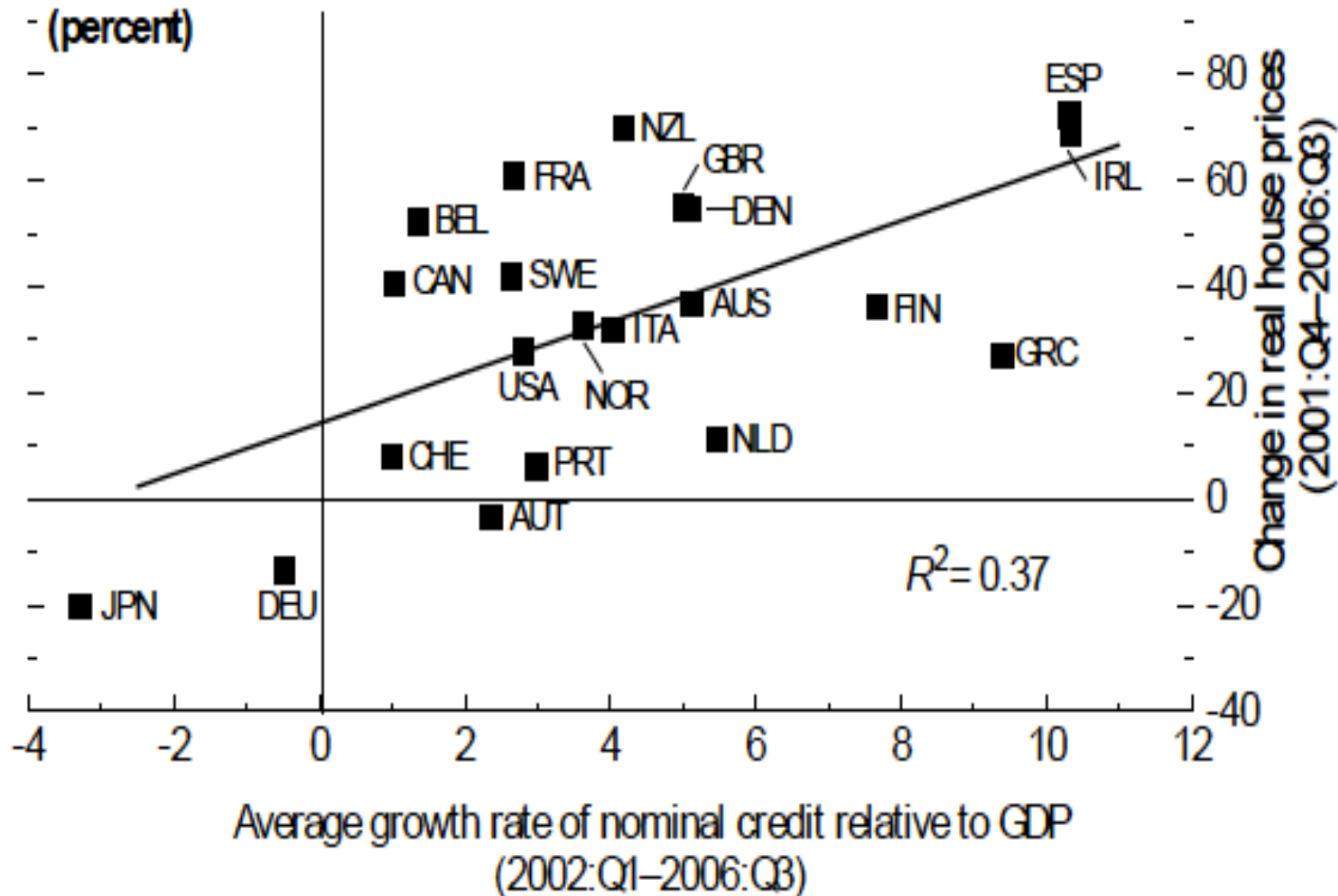
# European Commission scoreboard

- European Commission has proposed scoreboard of macroeconomic variables (private and public debt, current account imbalances, competitiveness measures, house prices)
- to be monitored,
- and to be used to push countries towards greater convergence in these macroeconomic variables.
- Failure to take action to eliminate imbalances could trigger a sanctioning mechanism

# Main criticism

- This is significant step forward
- But insufficient
- National governments have relatively little control over many of the macroeconomic variables targeted by the European Commission.
- Pre-crisis divergence dynamics was produced by monetary and financial developments over which national governments had little control.
- Local booms and bubbles developed in the periphery of the Eurozone.
- These were driven mainly by bank credit expansion.

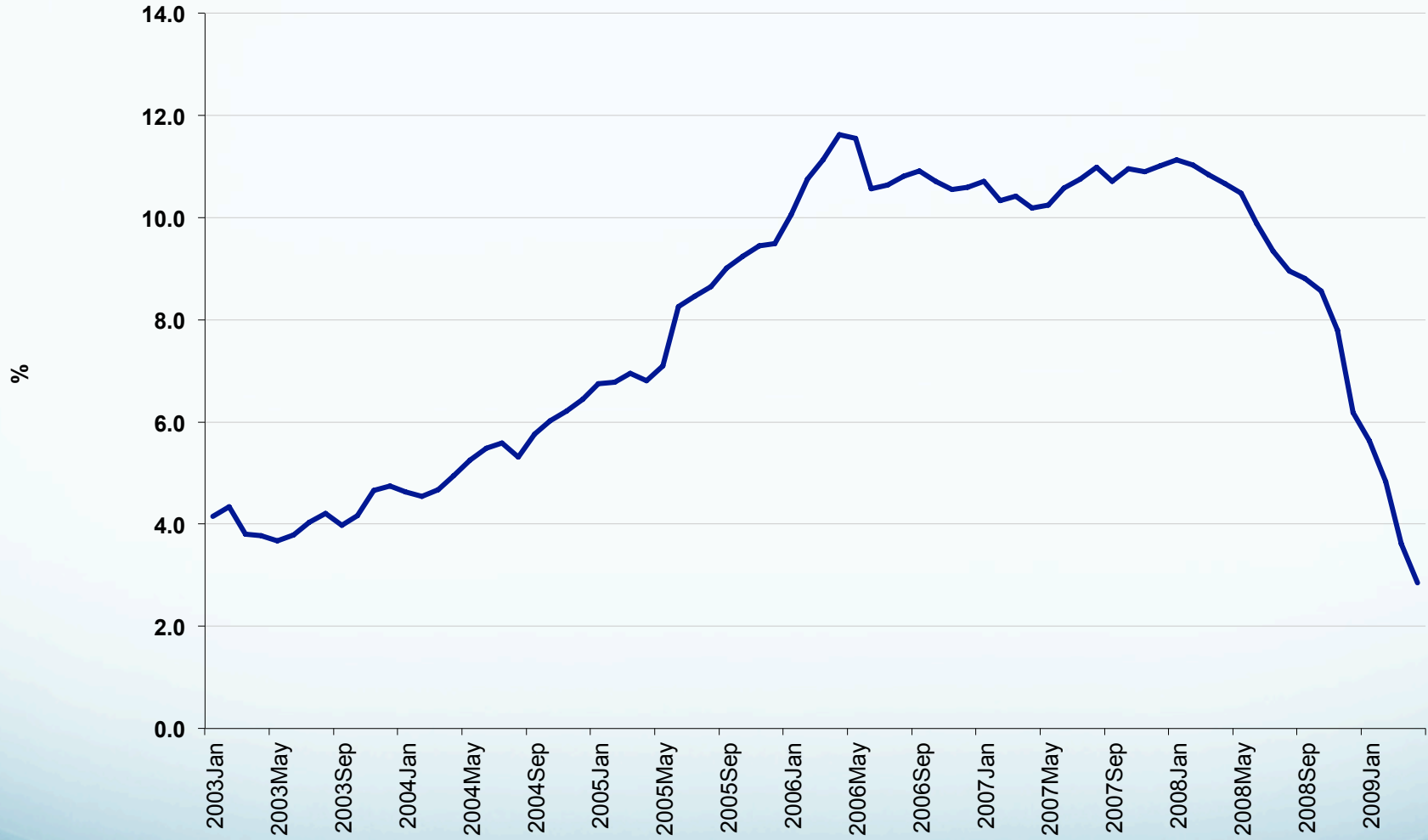
- Real House Prices and Growth Rate of Nominal Credit relative to GDP - 100  
- (percent)



- National governments can do little to control booms and busts produced by bubbles financed by bank credit
- The ECB can, but has been reluctant to act
- claiming that it can only take care of Euro-wide variables, and then only inflation
- ECB is also responsible for financial stability
- Given that bank credit is the most important variable driving bubbles, (and later crashes)
- ECB is only institution capable of controlling bank credit

- Some will say that ECB has only one instrument, the interest rate
- And that this has to be used to control inflation
- ECB has more instruments, in particular minimum reserve requirements
- This can be used to check unsustainable development of bank credit
- Both at level of Eurozone
- And at national level, using differential reserve requirements

**Figure 11: Growth rate of bank loans  
in Euro area**



- ECB did nothing to check the unsustainable increase in bank credit at the level of the eurozone
- and at the national level
- and therefore bears an important responsibility for the crisis
- Not only governments are to blame

# Conclusion

- A monetary union can only function if there is a collective mechanism of mutual support and control.
- Such a collective mechanism exists in a political union.
- In the absence of a political union, the member countries of the Eurozone are condemned to fill in the necessary pieces of such a collective mechanism.
- The debt crisis has made it possible to fill in a few of these pieces.
- What has been achieved, however, is still far from sufficient to guarantee the survival of the Eurozone.