# FINANCIAL MACROECONOMICS 2012

## Current Account Imbalances and the Sovereign Debt Crisis in Europe

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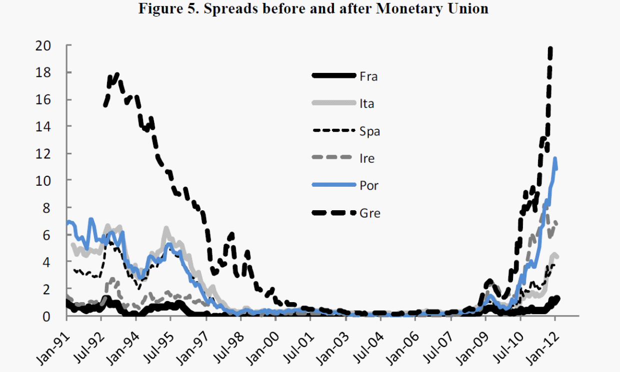
This draft: May 2012

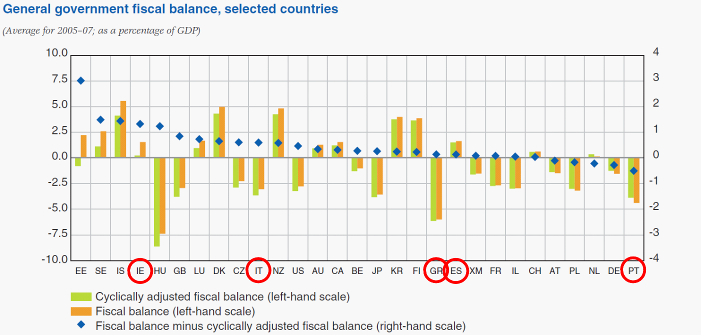
# Sovereign spreads in the Euro Area

## Compression and then dispersion



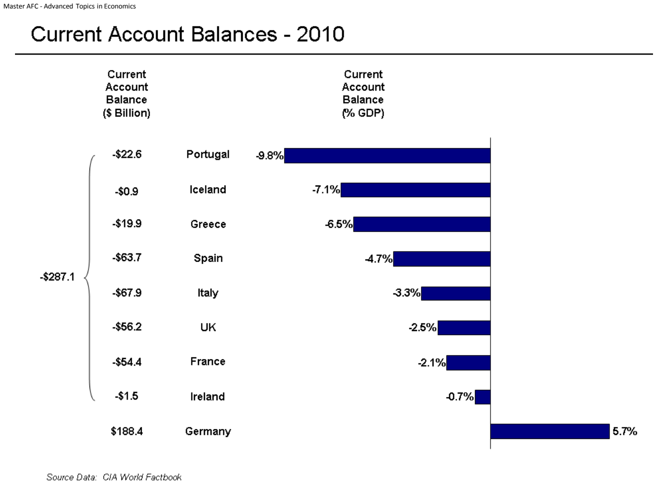

*Sources:* Datastream, OECD.

# A widespread problem of fiscal profligacy? It depends on the country

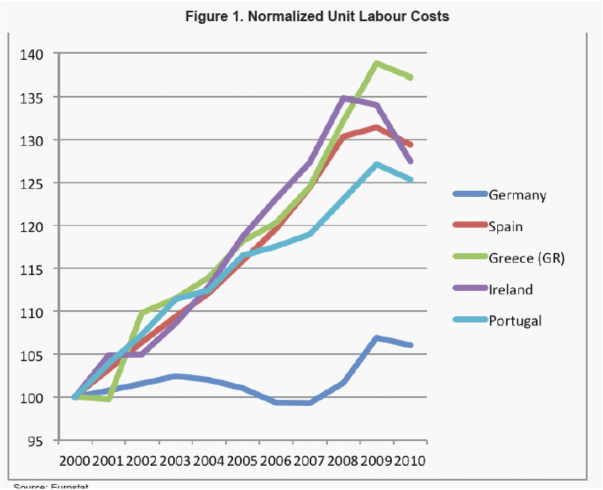



*AT = Austria; AU = Australia; BE = Belgium; CA = Canada; CH = Switzerland; CZ = Czech Republic; DE = Germany; DK = Denmark; EE = Estonia; ES = Spain; FI = Finland; FR = France; GB = United Kingdom; GR = Greece; HU = Hungary; IE = Ireland; IL = Israel; IS = Iceland; IT = Italy; JP = Japan; KR = Korea; LU = Luxembourg; NL = Netherlands; NZ = New Zealand; PL = Poland; PT = Portugal; SE = Sweden; US = United States; XM = euro area.*
*Sources: OECD, Economic Outlook; BIS calculations.*

# The premise: current account imbalances in the Euro Area



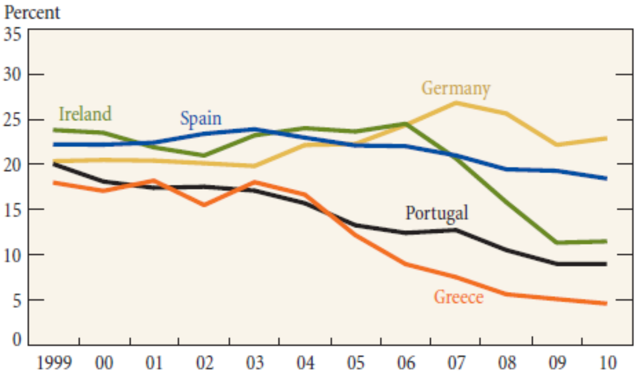
# Loss of competitiveness in the PIGS



# Savings fall in the PIGS

Chart 4

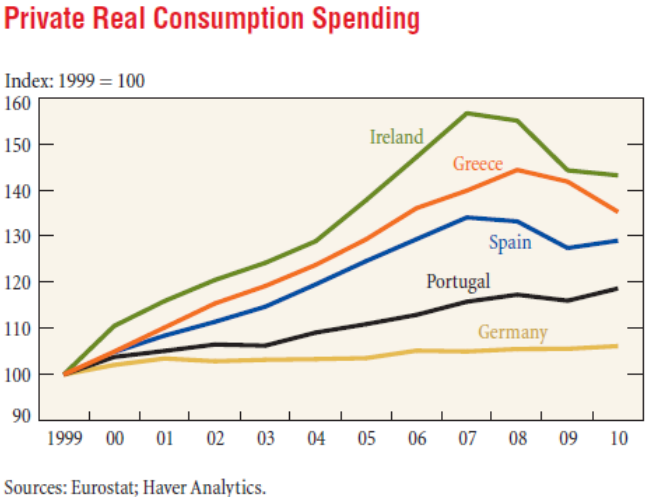
**Domestic Saving as a Share of GDP**



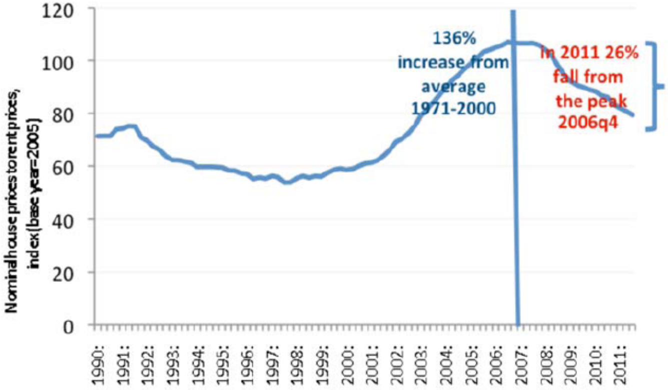

Sources: Eurostat; Haver Analytics.

Note: Domestic saving is measured as the sum of investment spending and the current account balance.

# A Consumption binge in the PIGS

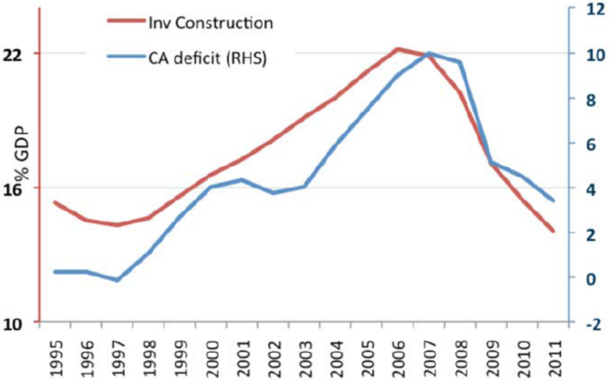


# Example: housing boom/bubble in Spain




*Source*: OECD

# Capital inflows in Spain have mostly financed the housing boom



# Rising household debt in the PIGS

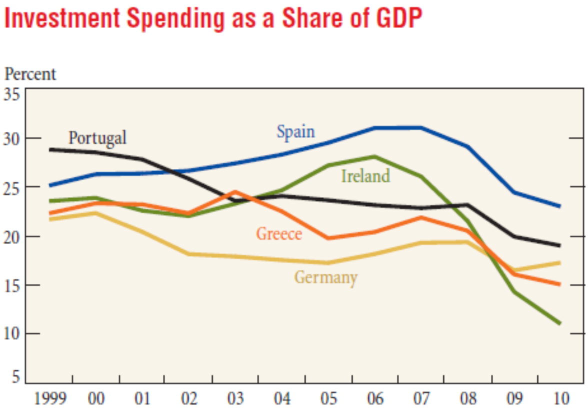
## Euro Area Household Debt Ratios

Percentage of Disposable Income

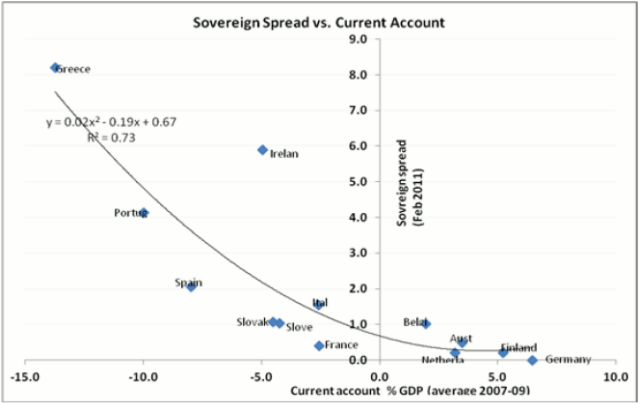
| | 1999 | 2007 | Change |
|---|---|---|---|
| Greece[a] | 26 | 75 | 49 |
| Ireland[b] | 113 | 205 | 93 |
| Portugal | 95 | 143 | 48 |
| Spain | 66 | 118 | 52 |
| Germany | 107 | 95 | -12 |
| Memo: | | | |
| United States | 88 | 122 | 33 |

Sources: Eurostat; Haver Analytics; Board of Governors of the Federal Reserve System.

# A fall or modest rise in investment



# External versus domestic debt in the euro crisis



# Euro Area Financial Crisis: the Sovereign-Banks feedback loop

- Two major turning points

1. Global recession hit countries of the Euro periphery $\longrightarrow$ **Sudden stop** in foreign capital inflows
2. In the **late 2009** the freshly-elected Greek government announced that the national accounts had been plainly falsified by the previous government

# Euro crisis as a balance-of-payment crisis

- National accounting identity implies:

$$\underbrace{CA}_{\substack{\text{current}\\\text{account}}} = \underbrace{S}_{\text{saving}} - \underbrace{I}_{\text{investment}}$$

- Rewrite

$$\underbrace{CA}_{\substack{\text{CA}\\\text{balance}}} + \underbrace{I - S}_{\substack{\text{Capital}\\\text{account}\\\text{balance}}} = 0$$

# CA deficit can be financed by private and/or public capital inflows

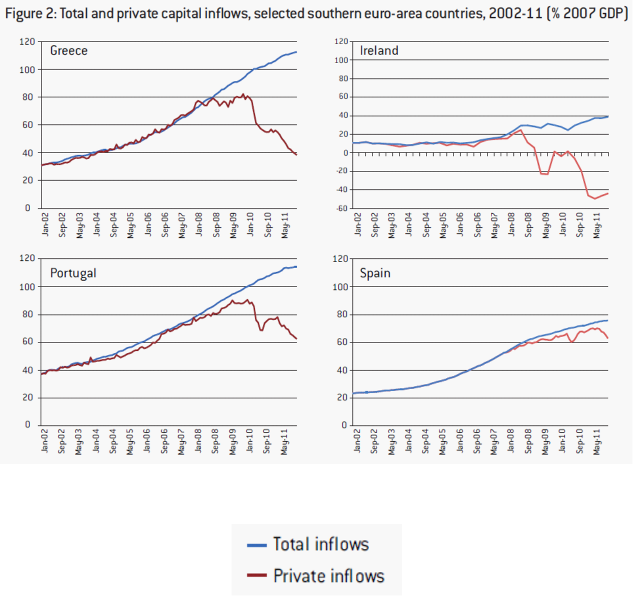
$$
\begin{aligned}
0 &= CA + I - S \\
&= CA + KI_{priv} + KI_{public} \\
&= CA + KI_{priv} + \underbrace{T2F + PGM + SMP}_{\text{public capital infow}}
\end{aligned}
$$

- **T2F**: Eurosystem financing through the **TARGET2 system** (the intra-euro area payment system) – this measures the change in the net liabilities of the national central bank vis-à-vis the rest of the Eurosystem
- **PGM**: official financing through the **IMF and EFSF**
- **SMP**: for ECB purchases of government securities from residents via the **Securities Markets Programme**

# A Sudden Stop in the South

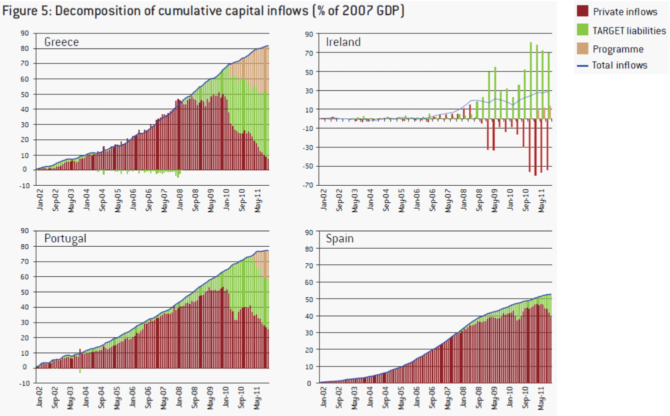
- During the 2002-2007 period, the increasing current account imbalances have been financed mainly via **private capital flows** (from North to South)
- Financial crisis caused in many countries a **sudden stop in the inflow of private capital**

# A Sudden Stop in the South



- If a country is **outside** a monetary union, this generally causes a **balance-of-payments crisis**: the current account has to quickly adjust, through various mechanisms (a currency devaluation, for instance), causing a deep recession in the short run
- In EA sharp outflow of private capital has been, for now at least, compensated by a sizable **inflow of public capital**
- This is somehow **postponing** the need for a current account adjustment

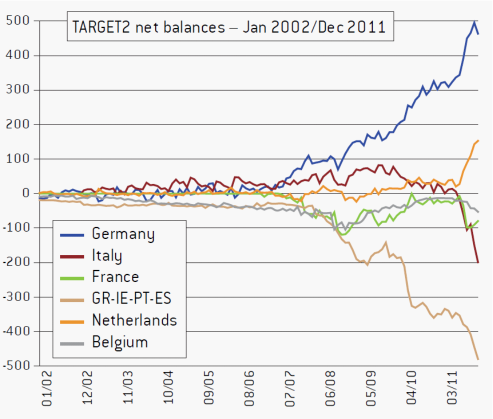
Figure 5: Decomposition of cumulative capital inflows (% of 2007 GDP)



# TARGET 2 System

- TARGET2 is the **Eurozone's payments system** that allows **money to be transferred** between bank accounts in different countries.1
- **Private** banks hold accounts with their country's **national** central bank and these accounts are counted as part of the **central bank's liabilities**.
- When a Spanish bank asks to transfer money to a German bank, the TARGET2 system ensures that its account with the Spanish central bank is **deducted** and the receiving German bank's account with the Bundesbank is **credited**.
- Banco de España incurs an 'Intra-Eurosystem liability' (**TARGET2 liability**) while the Bundesbank obtains an 'Intra-Eurosystem asset' (**TARGET2 credit**).
- TARGET2 liabilities incur **interest charges** at the ECB's refinancing rate which are then passed on to those central banks that have accumulated TARGET2 credits

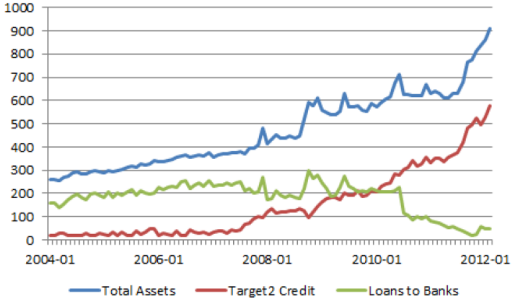
# TARGET2 imbalances



# Significant change in the composition of Bundesbank assets

Continuing transfers to German banks have led to a dramatic increase in the assets of the Bundesbank.

**Figure 2.** The Bundesbank's assets (billions of euros)



# In the event of a Euro break-up

- What happens if there is a disorderly breakup and TARGET2 debtors **refuse** to continue paying interest or hand over assets as compensation, so the **Bundesbank's TARGET2 credit becomes worthless?** Buba liabilities may exceed assets
- Should Buba be **recapitalized in that case**? A debate is ongoing
- Germany may face **serious problems** after a euro breakup because of the **appreciation** of its currency.

1. Export-oriented economy would suffer
2. Commercial banks would find that their assets – much of which would now be denominated in weaker foreign currencies – no longer cover their liabilities.

$\rightarrow$The German taxpayers would likely have to pay a serious price to maintain a hard currency and a solvent private banking system.

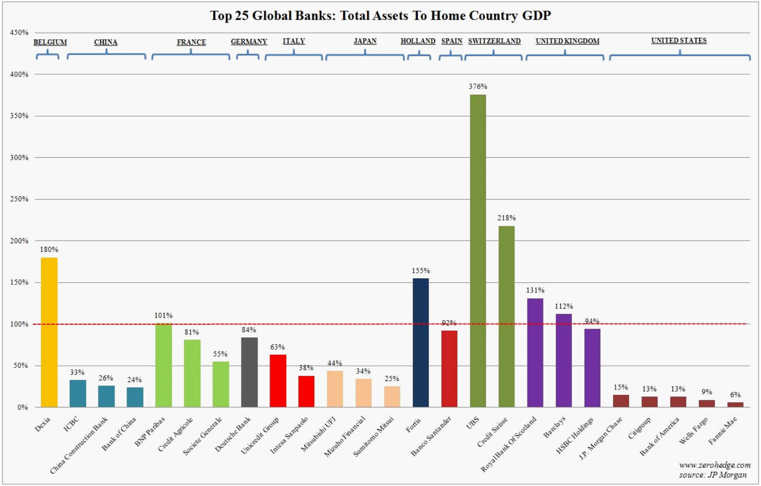
# Two-way systemic interdependence between banks and sovereigns

1. The **financial sector risk** can be transmitted to **sovereigns** (as mainly in Ireland and Spain)
2. The **sovereign risk** can be transmitted to the **financial sector** (as mainly in Greece, Portugal, and to a certain extent in Italy)

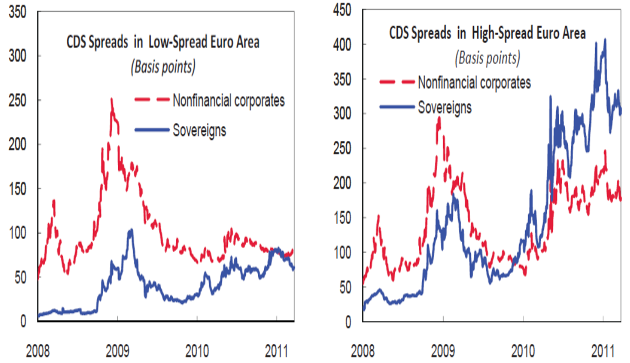
# Banking system in the Euro Area

- European banks are comparatively **much larger** than U.S. ones (they are universal banks, and more globalized)
- The large share of **public debt** in their portfolios creates a systemic interdependence between sovereign credit and banking systems

# EA banks assets much larger than US counterparts



# Sovereign risk channel



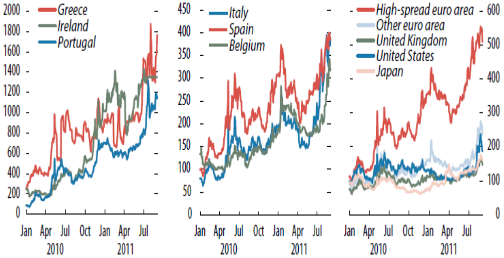
# Banks

1. "**Irish style**": banking crisis signals implicit govt. **guarantees** $\longrightarrow$ Enhances fiscal strain.
2. "**Greek style**" sovereign risk: fiscal strain impairs private sector conditions through **role of banks**.

- European banks are **key investors** in sovereign debt market
- Sovereign bonds are used as **collateral** in interbank secured founding markets, and for "repo" operations with central banks.
- The ECB accepted euro-area sovereign bonds with no haircut as collateral in its **liquidity** policies
- Euro-area sovereign bonds were risk-weighted at zero in regulatory capital calculations

# It's the banks channel

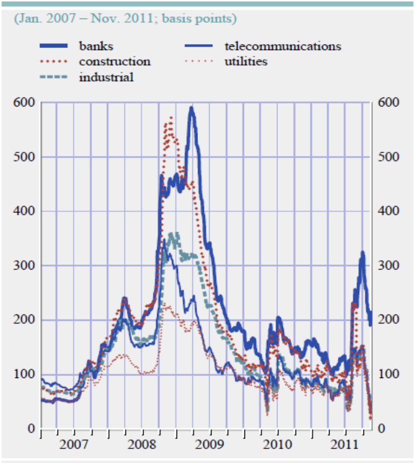
Figure 1.15. Spreads on Bank Five-Year Credit Default Swaps
(In basis points)




Sources: Bloomberg L.P.; and IMF staff estimates.

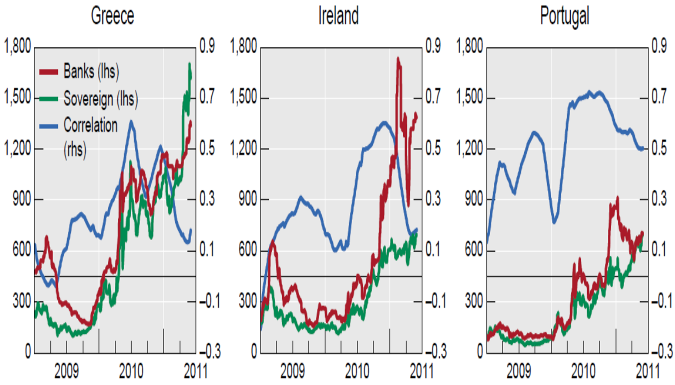
Source IMF GFS Report Sept. 2011

# Corporate bonds spreads rise especially in banking sector



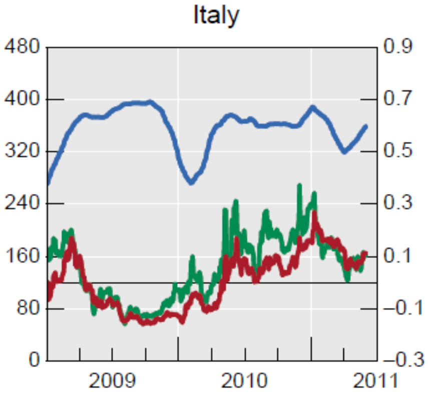
# Sovereign and Banks CDS

Source Panetta et al. 2011



# Sovereign and Banks CDS

Source Panetta et al. 2011



# Spillover to banks CDS in other countries

## Germany, UK, France banks CDS and Greece-Ireland sovereign CDS

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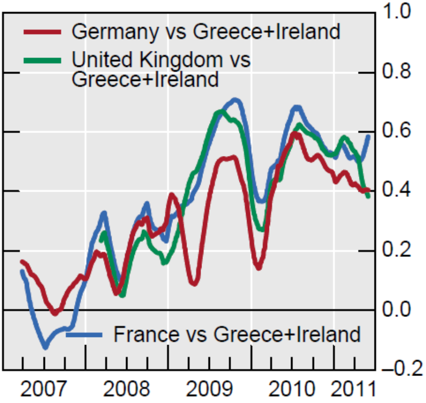

# Why do banks matter?

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3. Lower sovereign rating $\longrightarrow$ lower banks rating $\longrightarrow$ $\uparrow$**cost of funding** for banks $\longrightarrow$ $\uparrow$cost of funding for households/firms

# It is not banks leverage per se

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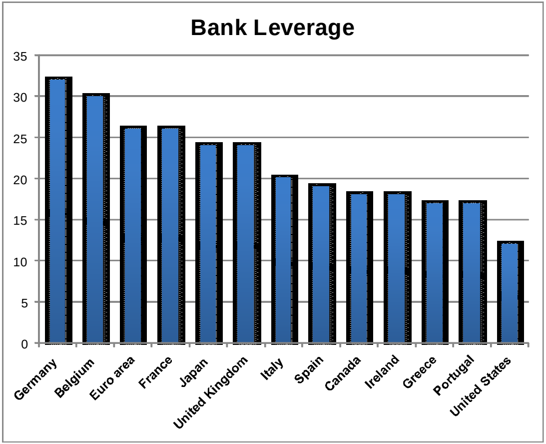
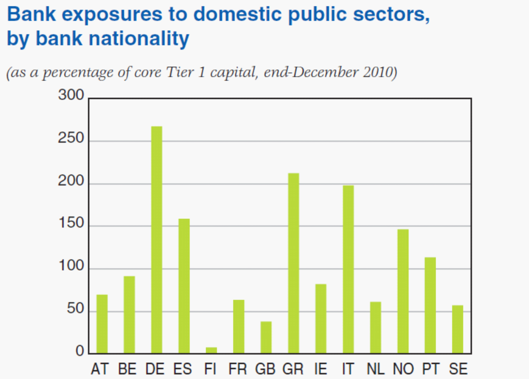



Source GFS Report 2011

# But exposure of banks' balance sheets to government bonds

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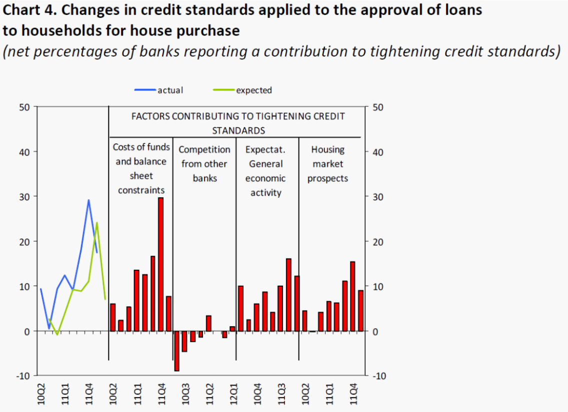
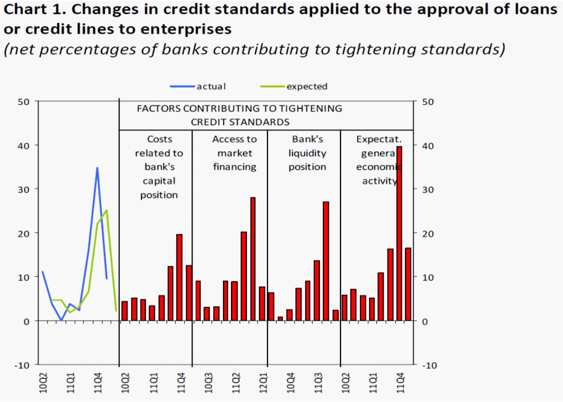
# Banks' balance sheet shock generates credit crunch

## For households

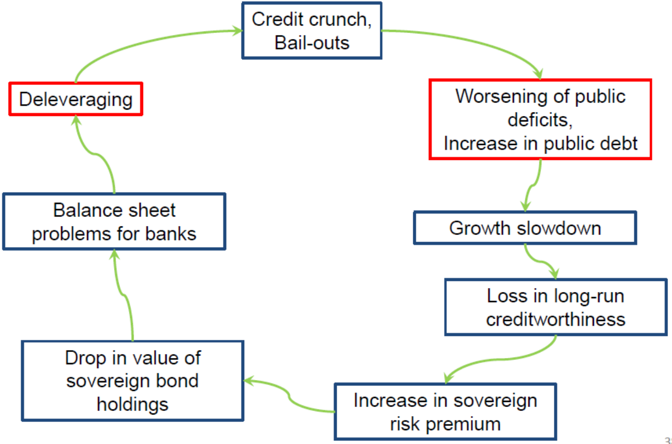


# Banks' balance sheet shock generates credit crunch

## For corporates



# Adverse feedback loop



# Why do banks hold government bonds? Why so differently across countries?

1. Banks hold more **govt. bonds** in countries with **poor** financial institutions

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1. Banks hold more **govt. bonds** in countries with **poor** financial institutions

2. Banks are more **leveraged** in countries with **good** financial institutions (Gennaioli et al. 2012)

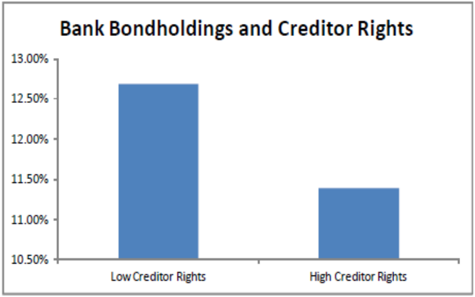


Figure 8. Bank bondholdings and creditor rights.

Source: Gennaioli et al. (2012)

# Insights

- Better financial institutions (Germany, UK) $\rightarrow \uparrow$ inflow of foreign capital $\rightarrow\uparrow$ leverage $\rightarrow$ **disciplining device** on government $\rightarrow$ Make default **less** likely

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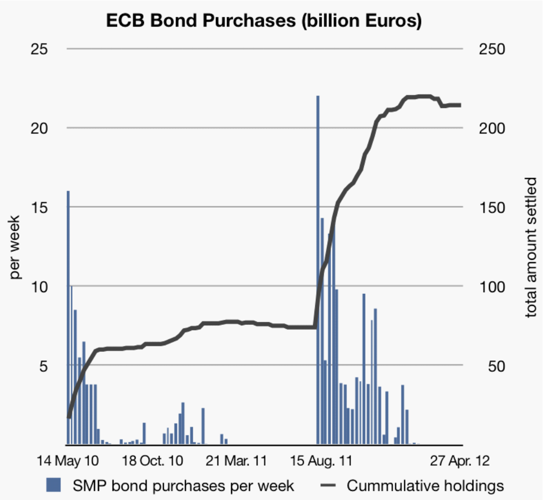
- Better financial institutions (Germany, UK) $\rightarrow \uparrow$ inflow of foreign capital $\rightarrow \uparrow$ leverage $\rightarrow$ **disciplining device** on government $\rightarrow$ Make default **less** likely
- EA countries with **high sovererign risk** also countries with worse **financial institutions.**
- Square with evidence that italian banks not particularly leveraged, why US govt. debt **not** a problem, why rapid acceleration of govt. debt in UK and Germany not a problem.

# Maturity mismatch for sovereign and bank runs

- Sovereigns, like banks, face a **maturity mismatch** problem: the government has **long-term assets** (flow of tax revenues) and **liabilities** of a much shorter duration
- Consider a country with a debt/GDP ratio of 100%: even if the average maturity of government debt is 8 years (almost the case for Italy), the same country has to refinance every year 12.5% of GDP
- Any government could become immediately insolvent if investors refuse to roll over the debt coming due
- Same mechanism as in a **bank run**

# European Financial Stabilisation Facility

- The ensuing deterioration of Greece's access to capital markets led it to seek help from fellow euro-area countries and the IMF: in May 2010 a first conditional **assistance package of €110 billion** was announced
- Soon after, the **European Financial Stabilisation Facility** (EFSF) was established. Now backed by guarantee commitments from the euro-area members and the IMF for a total of €780 billion, allowing a lending capacity of €440 billion
- Its mission is to safeguard **financial stability** in Europe by providing financial assistance to euro-area members
- Simultaneously, the ECB started a **Securities Markets Programme** under which it buys sovereign debt of troubled countries on secondary markets


ECB Bond Purchases (billion Euros)
25
20
15
10
5
250
200
150
100
50
per week
total amount settled
14 May 10
18 Oct. 10
21 Mar. 11
15 Aug. 11
27 Apr. 12
SMP bond purchases per week
Cummulative holdings

THANK YOU!!