Safe Assets Shortages and some Policy Implications

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Debt and Credit, Growth and Crises Conference

Banco de España and The World Bank

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Madrid, Spain

The Plan

- Part I: A View on the Global Economy

    – Potential systemic shock: Europe

    – Safe asset / systemic insurance shortage

- Part II: Some equations (joint wip with E. Farhi)

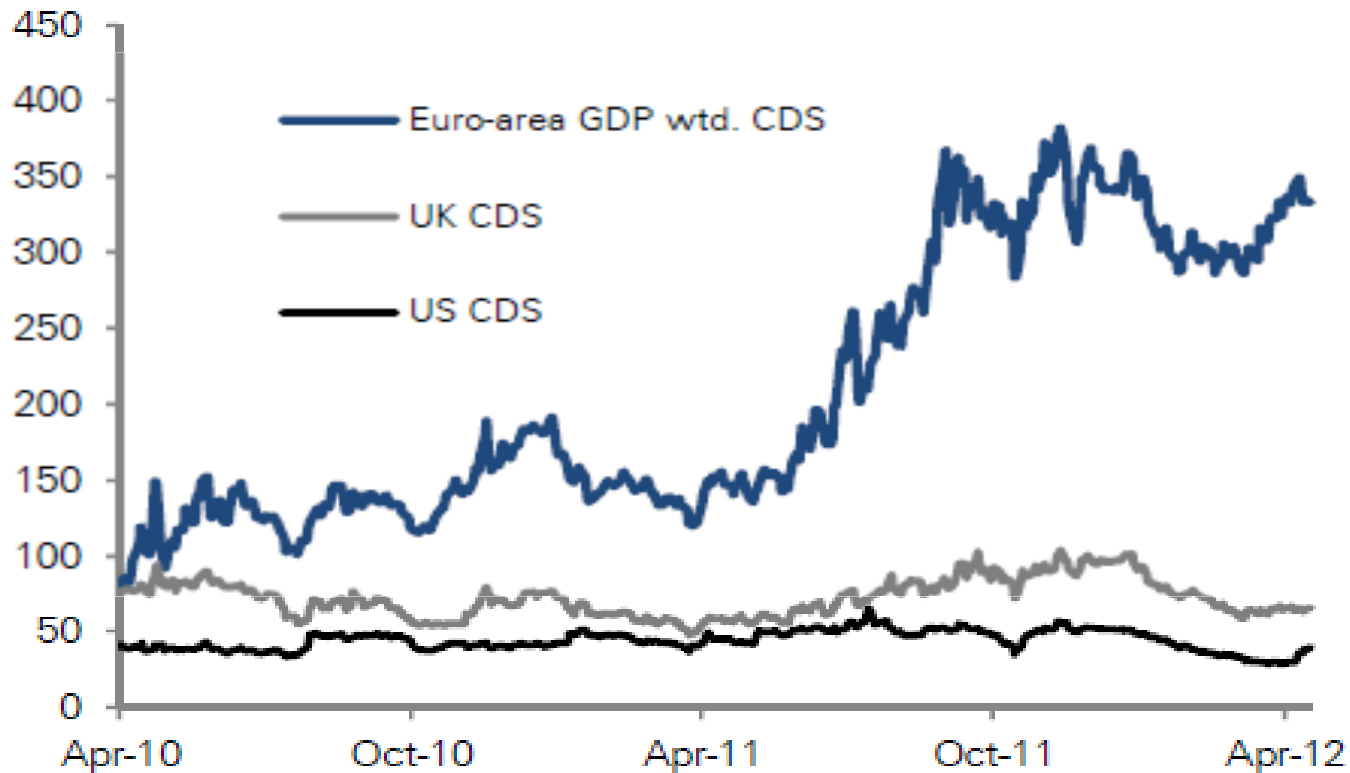   – Safe asset shortages

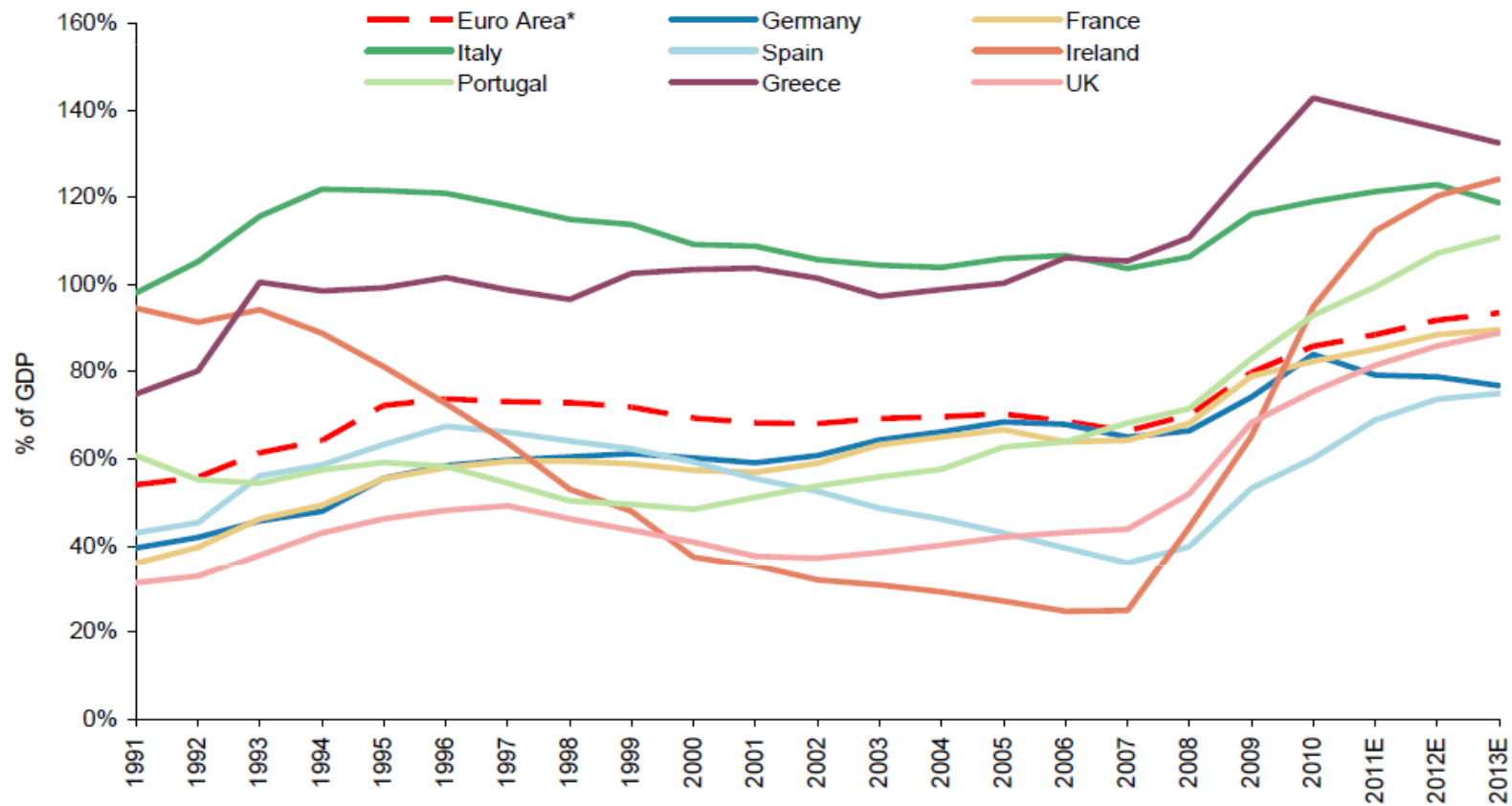   – Some policy implications
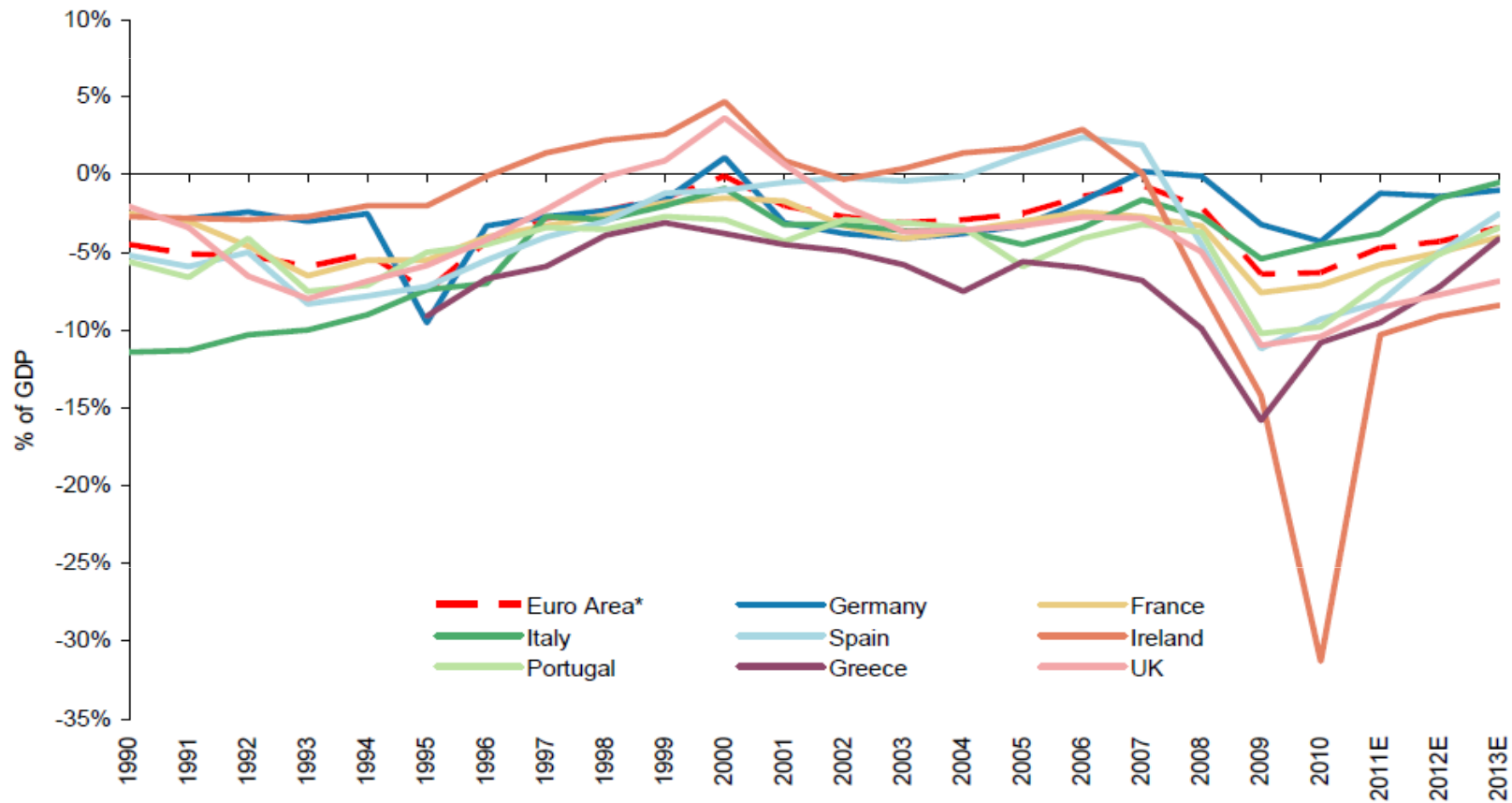
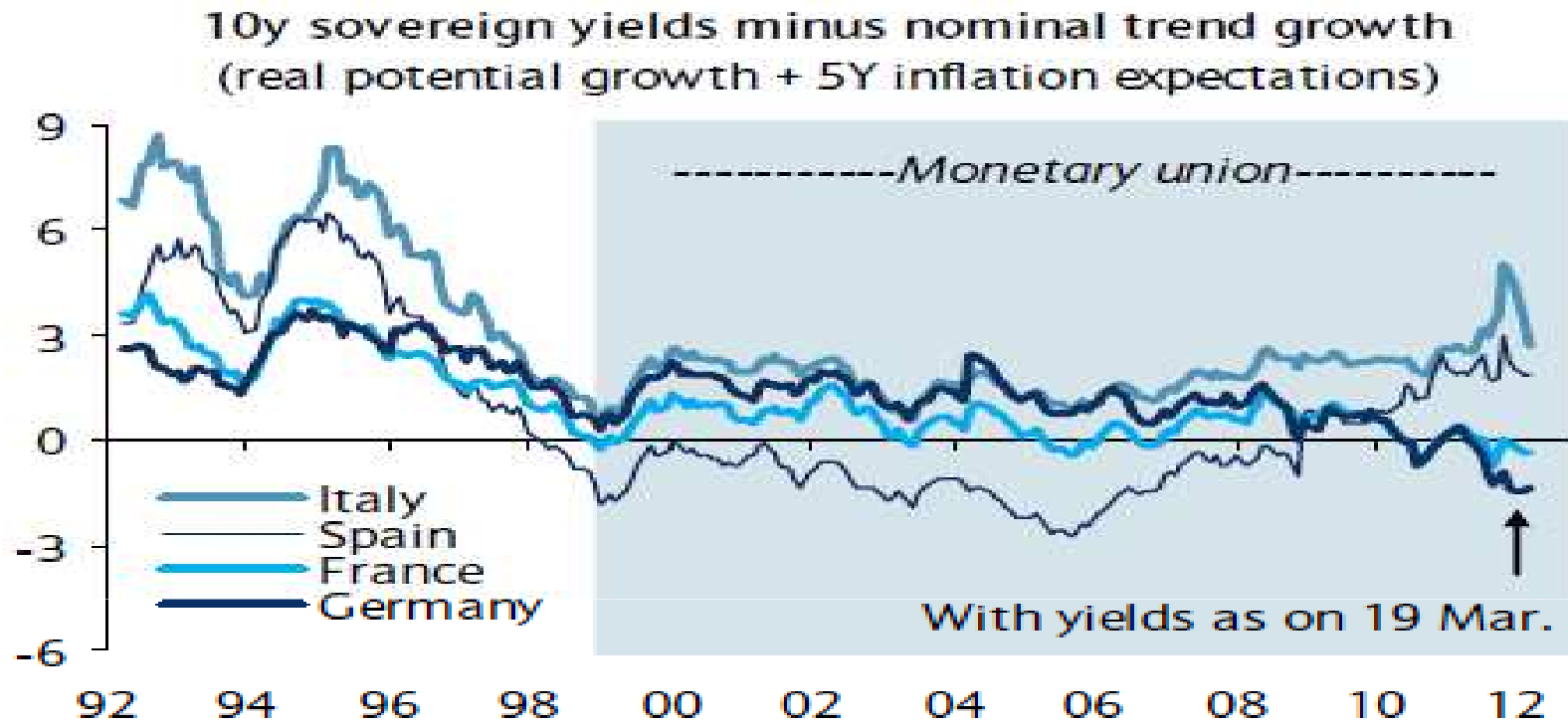A View on the Global Economy

PART I

Euro-area: GDP Weighted CDS

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It is not just contagion… G. Debt

Budget

Rate-growth spreads

10y sovereign yields minus nominal trend growth
(real potential growth + 5Y inflation expectations)

----------Monetary union----------

Italy
Spain
France
Germany

With yields as on 19 Mar.

Source: Haver Analytics, consensus expectations (for long-term inflation expectations), Barclays Research

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TFP Growth
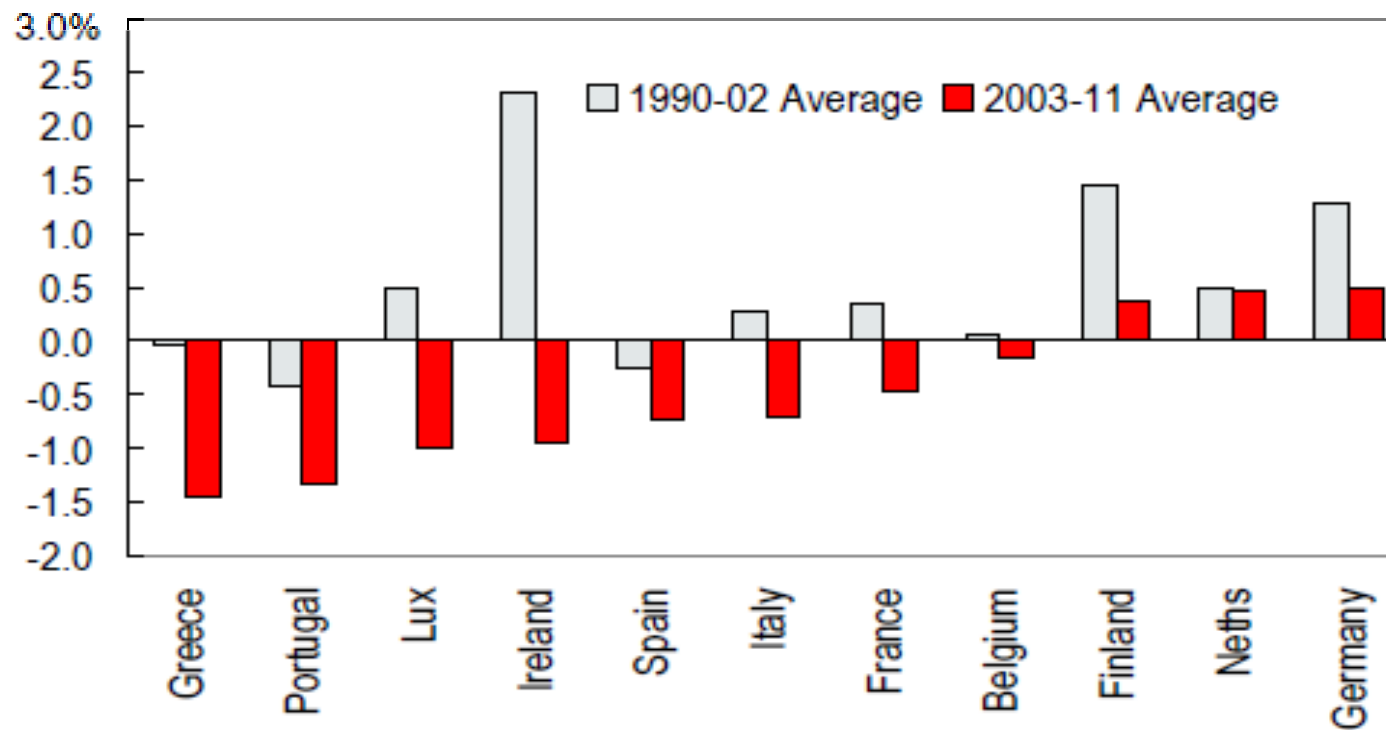
Sources: Conference Board and Citi Investment Research and Analysis

Spain and Italy

The Fall Euro Crisis. Step 1. Worries about Italy and Spain

Italy Government Debt/GDP Projections 1/
(growth shock in percent per year; interest rate shock in percent)

Growth shock:
0.3 vs. 1.4 baseline

Interest rate shock:
5.0 vs. 2.8 baseline

Baseline

Spain Government Debt/GDP Projections 1/
(growth shock in percent per year; interest rate shock in percent)

Growth shock:
0.4 vs. 1.6 baseline
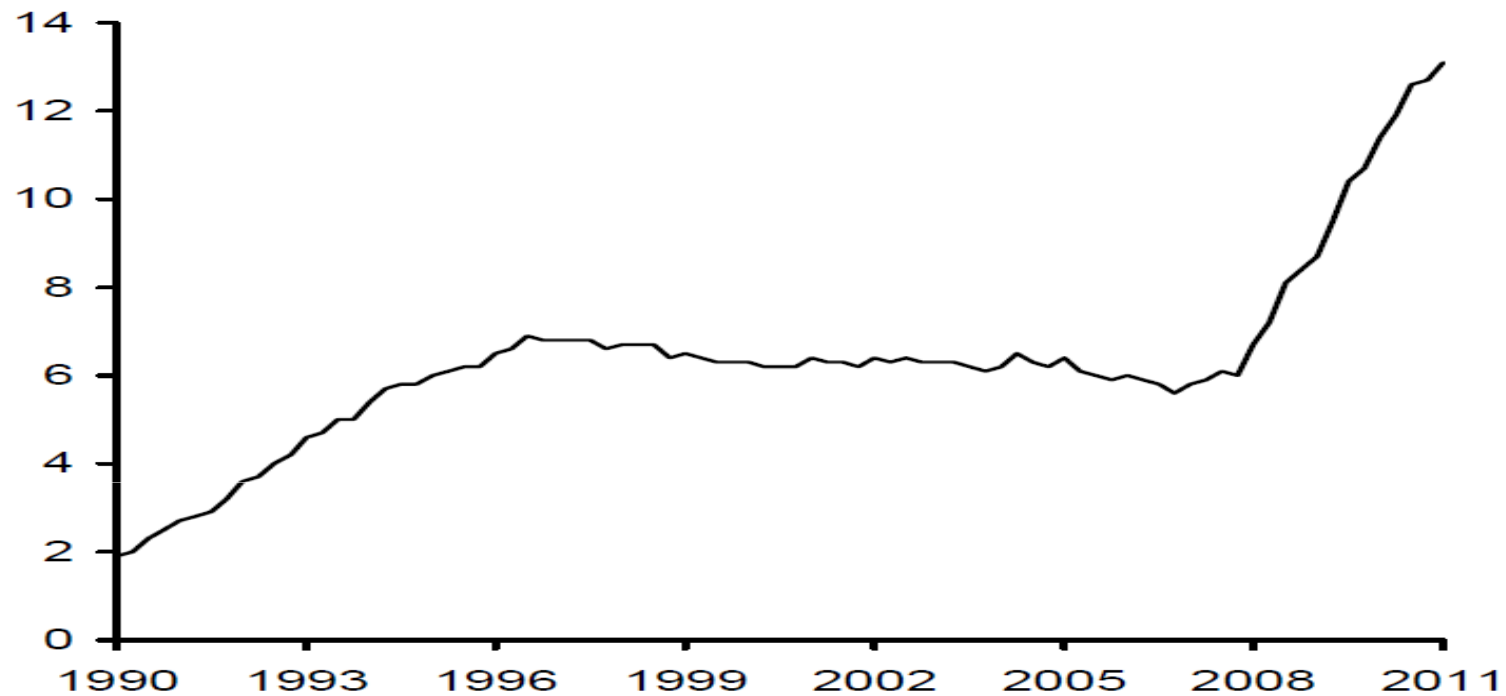
Interest rate shock:
5.0 vs. 2.4 baseline

Baseline
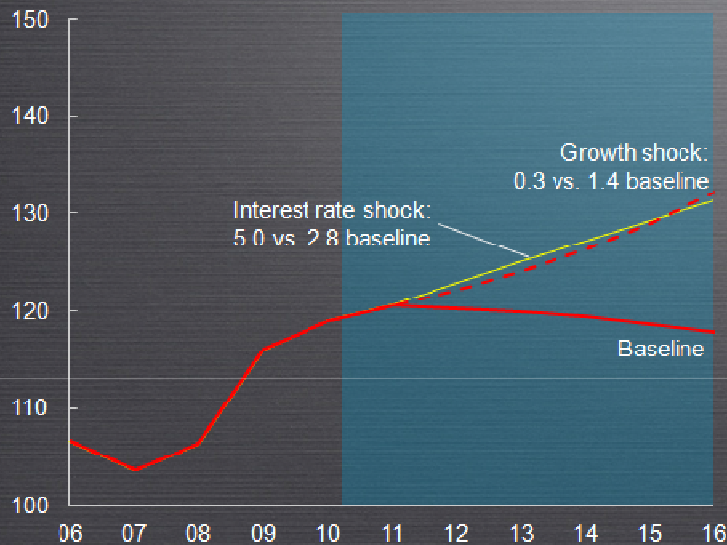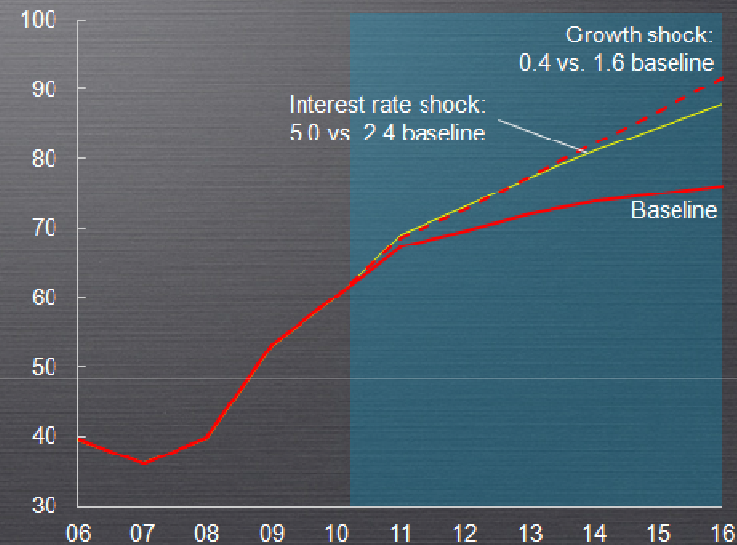
Source: IMF country reports (2011).
1/ Growth and interest rate are defined in real terms.

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Spain… surprises

Exhibit 7: Regional debt as % of Spanish GDP
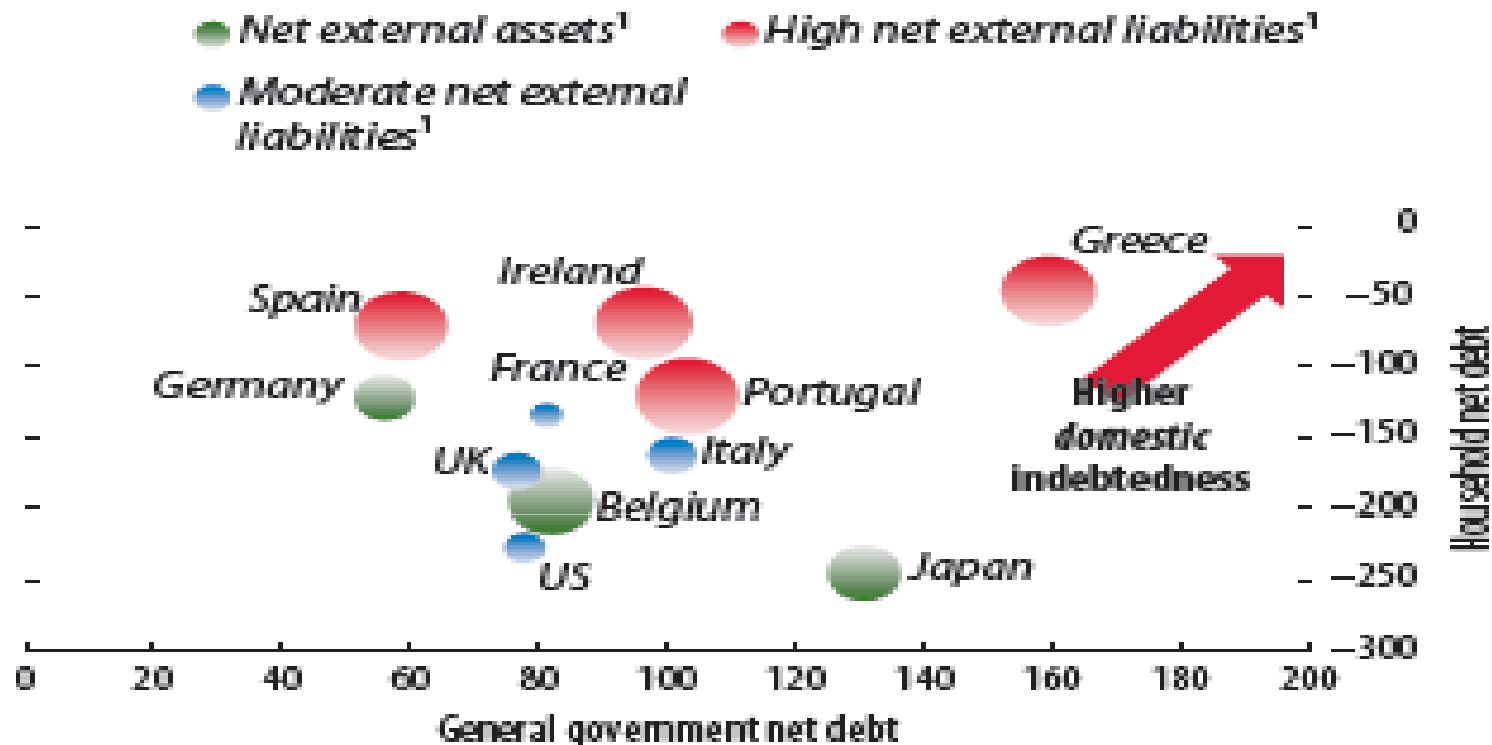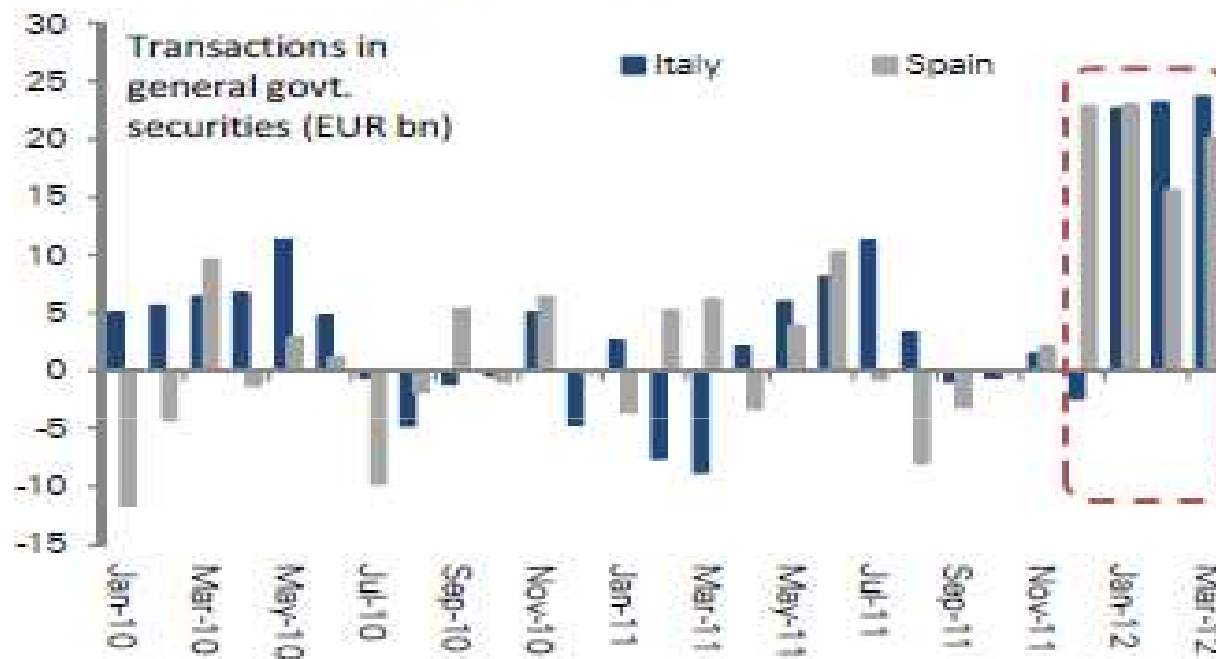

Source: Credit Suisse

Liabilities (Summary)

(Percent of GDP)

Doubling down

Spanish and Italian banks have increased their holdings of govt. bonds
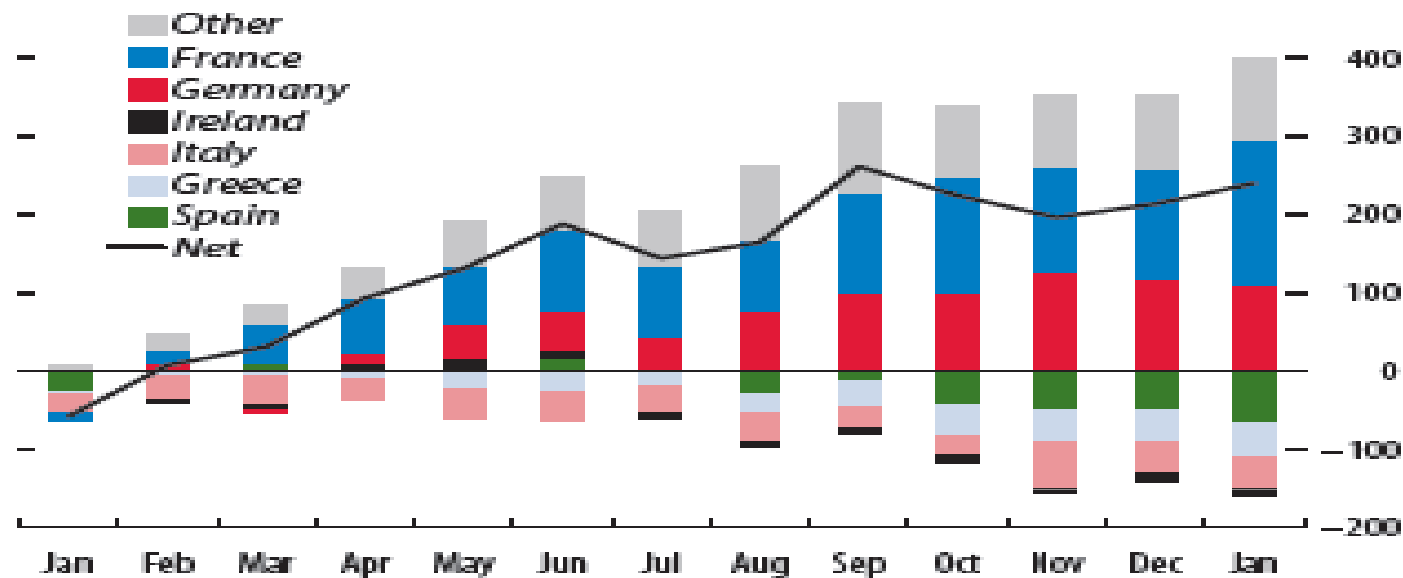
Lethal embrace?

Runs… when, not if…

Figure 2.21. Cumulative Euro Area Deposit Flows, 2011–12
(In billions of euros)

Source: Haver Analytics.
Note: Other includes Austria, Belgium, Finland, Luxembourg, Netherlands, and Portugal.

EM Style Sudden Stop

LA SALIDA DE CAPITALES

Inversión financiera neta del exterior en España
(excluido el Banco de España).
En millones de euros.

111.425
86.682
70.004
62.932
48.861
41.517
27.478
26.396   25.620
16.251
15.325   8.278   11.820
0
-5.395   4.228
-11.005
-97.765
Hasta marzo **-97.090**

1995   1997   1999   2001   2003   2005   2007   2009   2011   **2012**

EVOLUCIÓN MENSUAL
En millones de euros.

8.852   6.651   5.384   3.269   7.859
0
-9.557
-18.087   -4.768   -7.908   -15.237
-17.662
-34.102   -5.342
-25.549
-66.200

E   F   M   A   M   J   J   A   S   O   N   D   E   F   M
2011   2012

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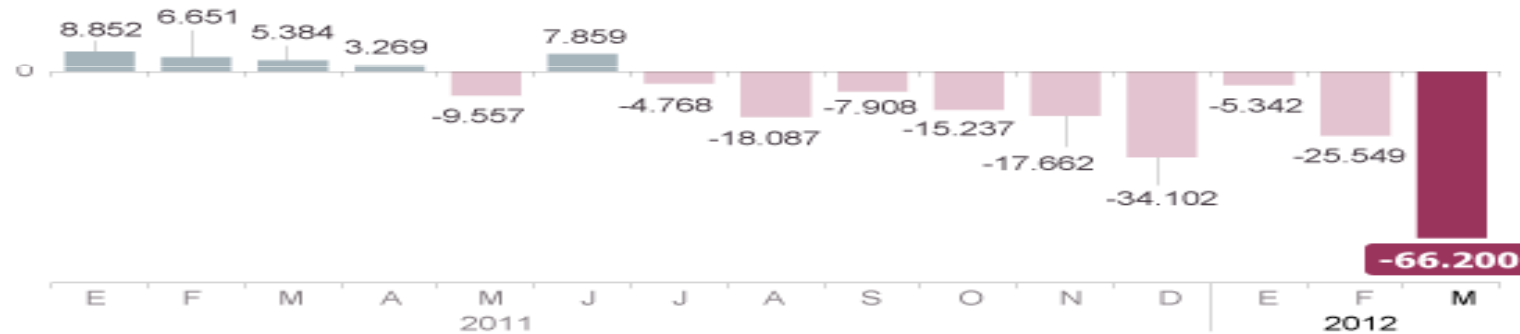
EM Style Sudden Stop + Target2

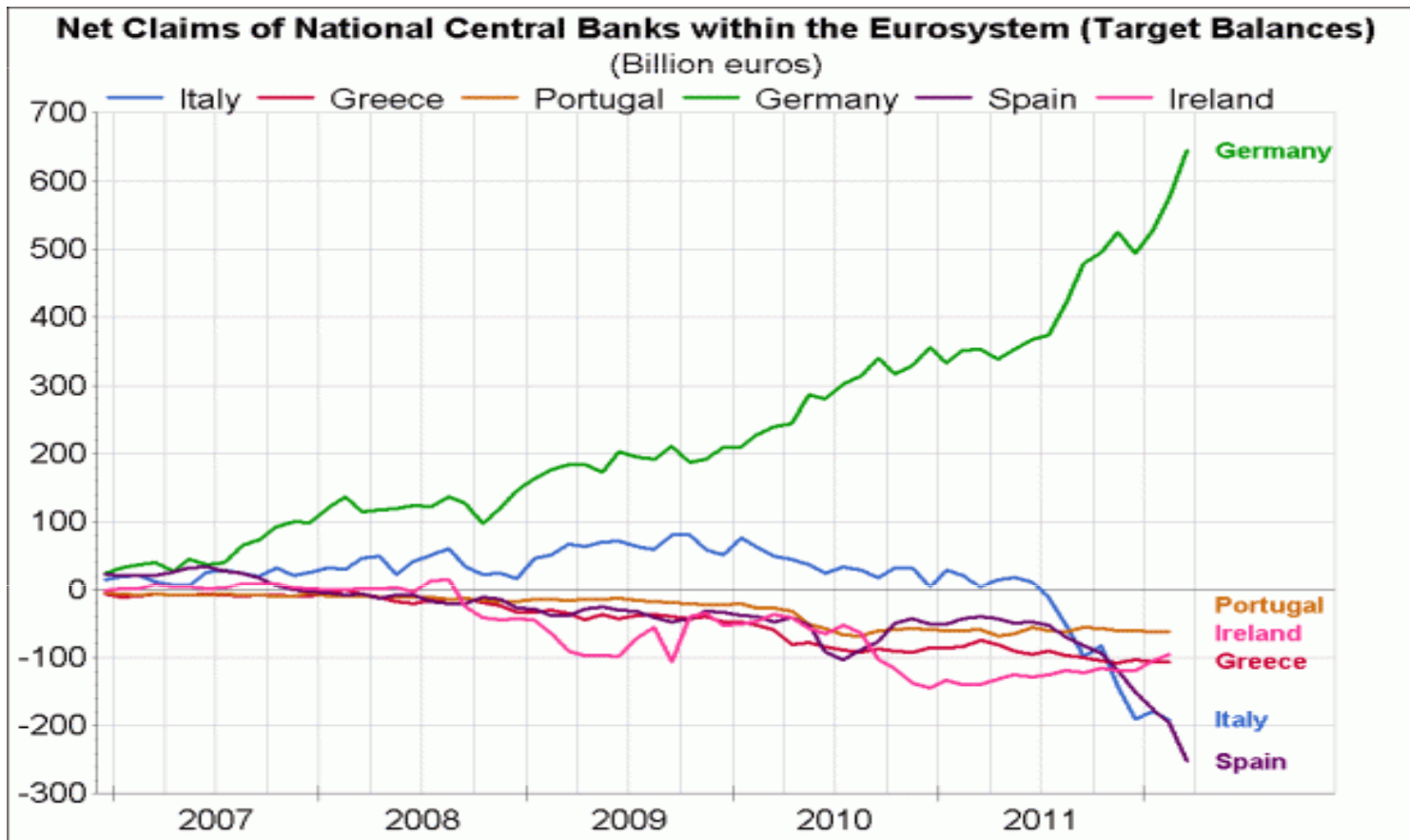|	Variación neta pasivos (VNP)	Variación neta activos (VNA)	Saldos (VNP-VNA)	Variación neta pasivos (VNP)	Variación neta activos (VNA)	Saldos (VNP-VNA)
CUENTA FINANCIERA	-	-	**9.847,2**	-	-	**8.481,4**
Excluido Banco de España	-	-	20.887,1	-	-	-97.090,9
Inversiones directas	-	-	-3.520,3	-	-	7.940,1
De España en el exterior	-	*11.155,1*	*-11.155,1*	-	*-1.279,1*	*1.279,1*
Del exterior en España	*7.634,8*	-	*7.634,8*	*6.661,0*	-	*6.661,0*
Inversiones de cartera	-	-	22.817,6	-	-	-34.385,2
De España en el exterior	-	*-8.412,1*	*8.412,1*	-	*2.821,0*	*-2.821,0*
Del exterior en España	*14.405,4*	-	*14.405,4*	*-31.564,3*	-	*-31.564,3*
Otras Inversiones (1)	-	-	-1.158,8	-	-	-75.762,1
De España en el exterior	-	*10.083,3*	*-10.083,3*	-	*37.387,1*	*-37.387,1*
Del exterior en España	*8.924,5*	-	*8.924,5*	*-38.375,0*	-	*-38.375,0*
Derivados financieros	-	-	2.748,7	-	-	5.116,3
Banco de España (2)	-	-	-11.039,8	-	-	105.572,3
Reservas	-	-	-491,9	-	-	-212,4
Activos netos BE frente al EUROSISTEMA	-	-	-10.894,5	-	-	101.054,7
Otros activos netos	-	-	346,5	-	-	4.730,0
ERRORES Y OMISIONES	-	-	5.444,9	-	-	5.738,1

Fuente: Banco de España

Target2

Net Claims of National Central Banks within the Eurosystem (Target Balances)
(Billion euros)

It used to be like this…

And it is now like this

State 5: Avg Correlation 0.363

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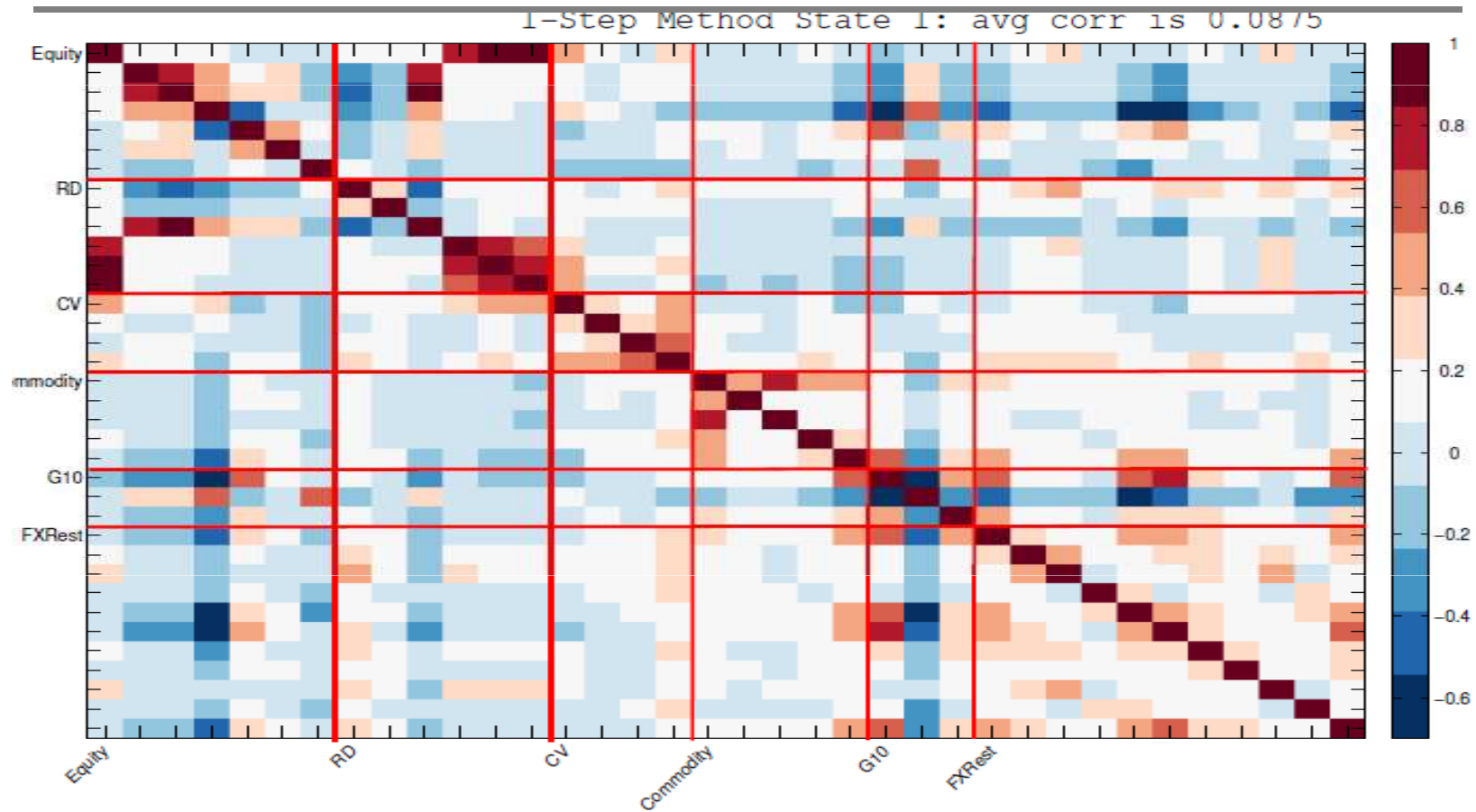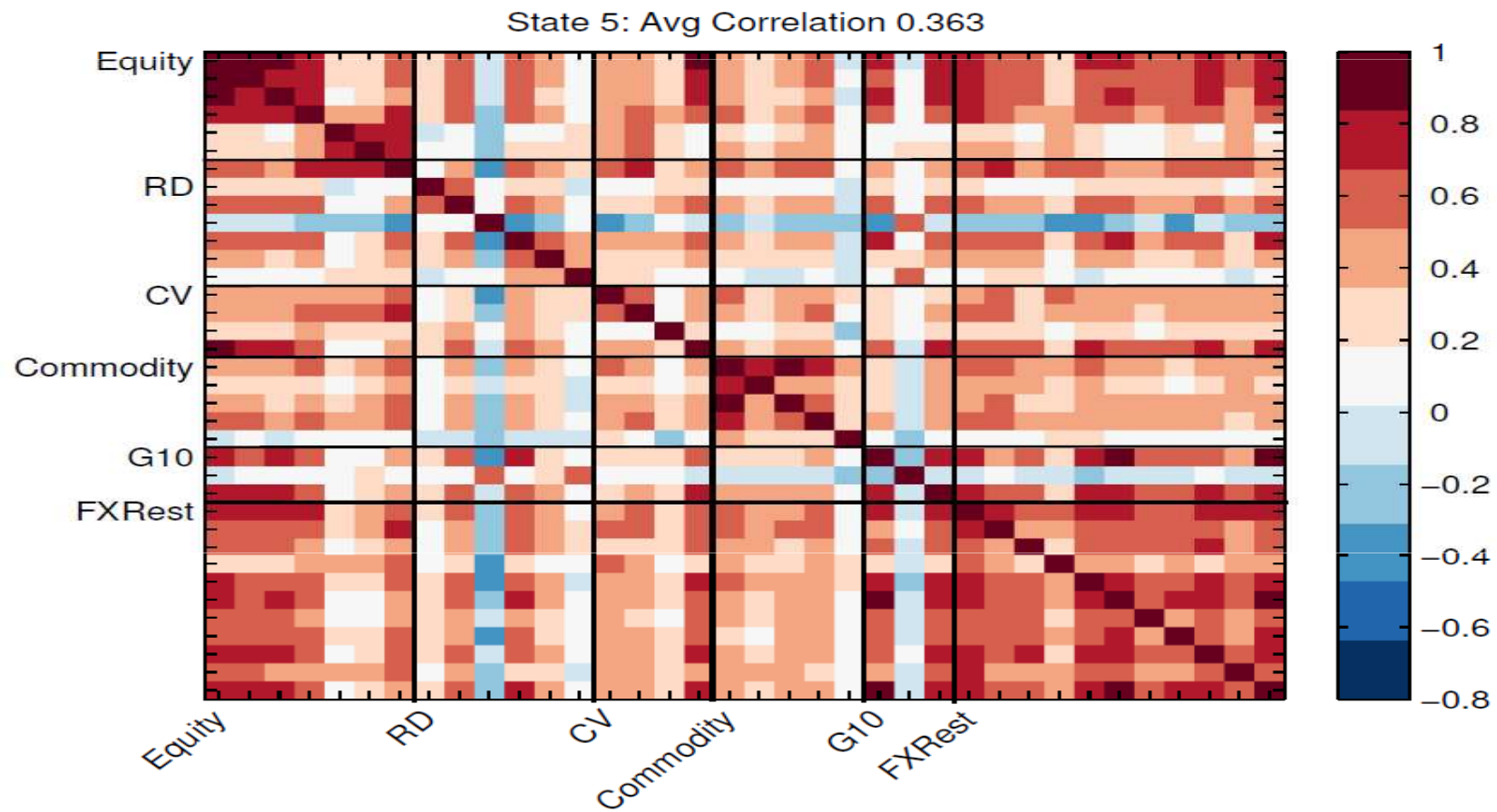
Bottom line

- There is a very significant risk of a large tail event from Europe

- Even if it doesn't materialize right away, fluctuations in the fear that it might, has become a core market factor

- Unfortunately, old fashioned global and sectoral diversification no longer offers good risk-control options…

- It may be the time to buy systemic insurance!… if we can find it…
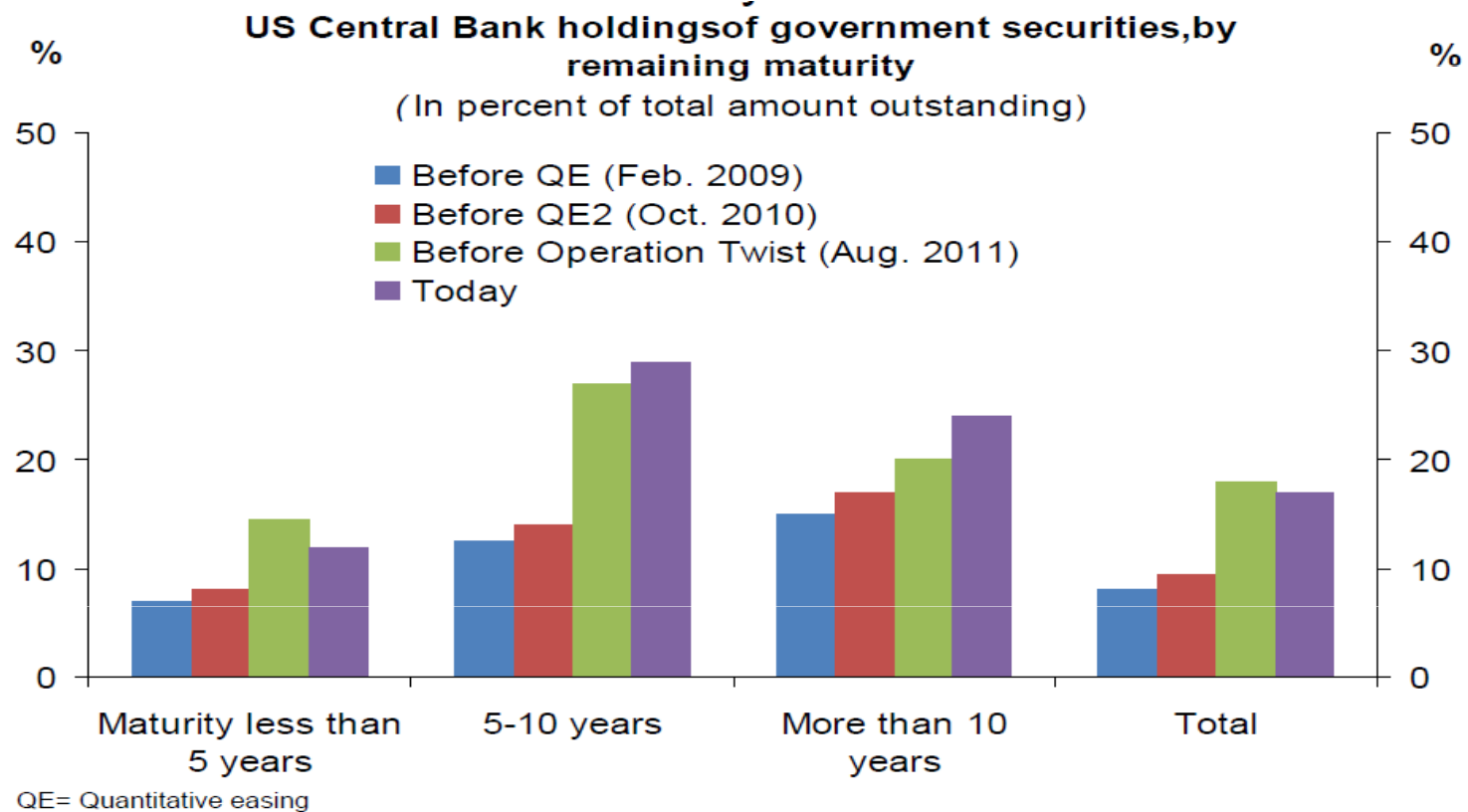
THE SHORTAGE OF MACRO-INSURANCE IS ACUTE

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The "Safe Asset" Shortage

	$ bn		% of World GDP	
	2007	2011	2007	2011
US Federal Government Debt held by the public	5,136	10,692	9.20%	15.80%
Held by the Fed	736	1,700	1.30%	2.50%
Held by private investors	4,401	8,992	7.90%	13.30%
GSE obligations	2,910	~~2,023~~	5.20%	~~3.00%~~
Agency- and GSE-backed mortgage pools	4,464	~~6,283~~	8.00%	~~9.30%~~
Private-issue ABS	3,901	~~1,277~~	7.00%	~~1.90%~~
German and French government debt	2,492	3,270	4.50%	4.80%
Italian and Spanish government debt	2,380	~~3,143~~	4.30%	~~4.70%~~
Safe assets	20,548	12,262	36.90%	18.10%

Note: Numbers are struck through if they are believed to have lost their "safe haven" status after 2007.
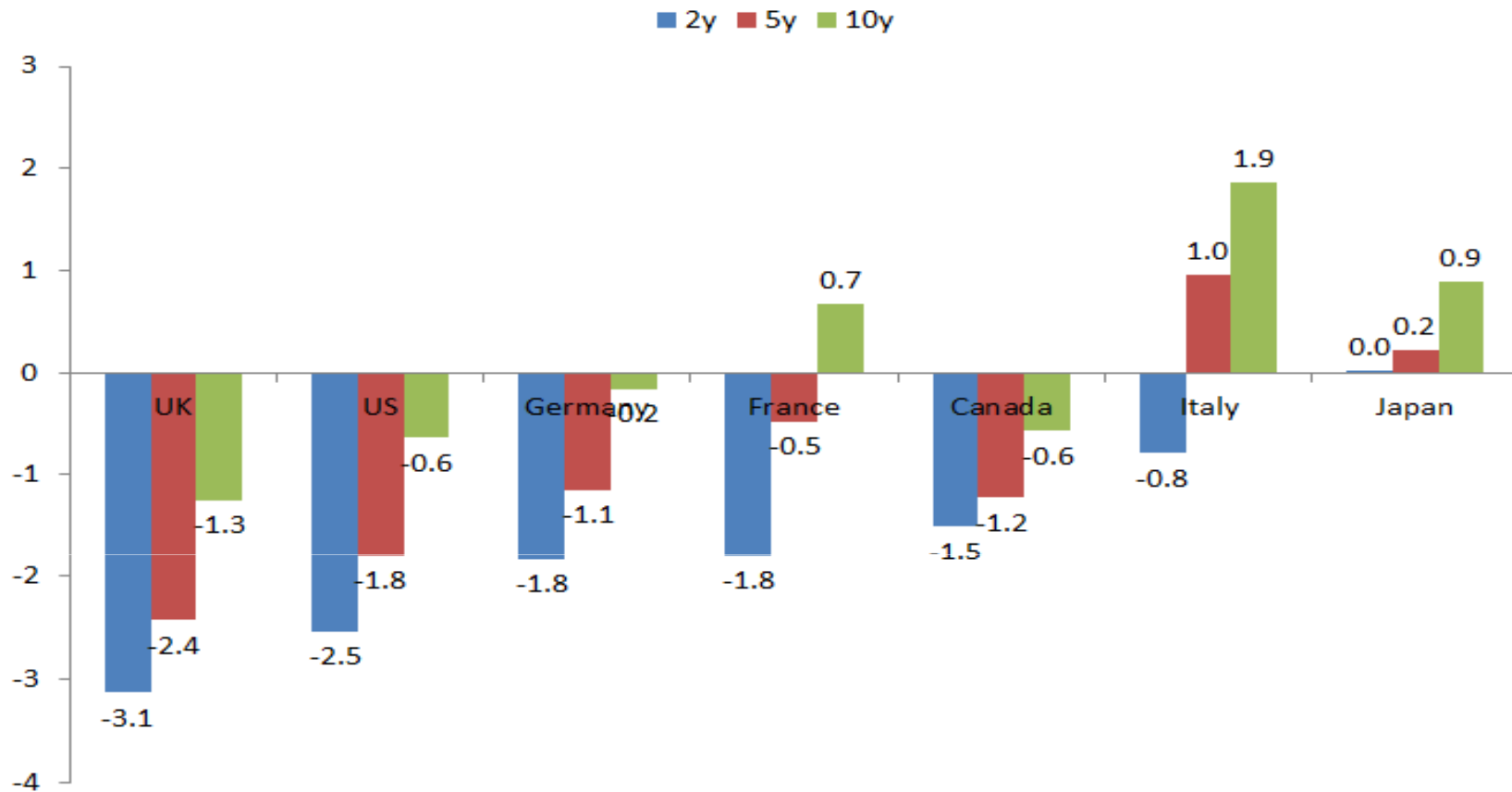Source: Federal Reserve, Haver Analytics, Barclays Research

QE is reducing supply

US Central Bank holdings of government securities, by remaining maturity
(In percent of total amount outstanding)

- Before QE (Feb. 2009)
- Before QE2 (Oct. 2010)
- Before Operation Twist (Aug. 2011)
- Today

QE= Quantitative easing

Source: IMF, DB Global Markets Research

Real Rates Have Collapsed

Bye-bye Rates Hedge (10y Tsy)

Bye-bye CHF Hedge

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Bye-bye JPY Hedge
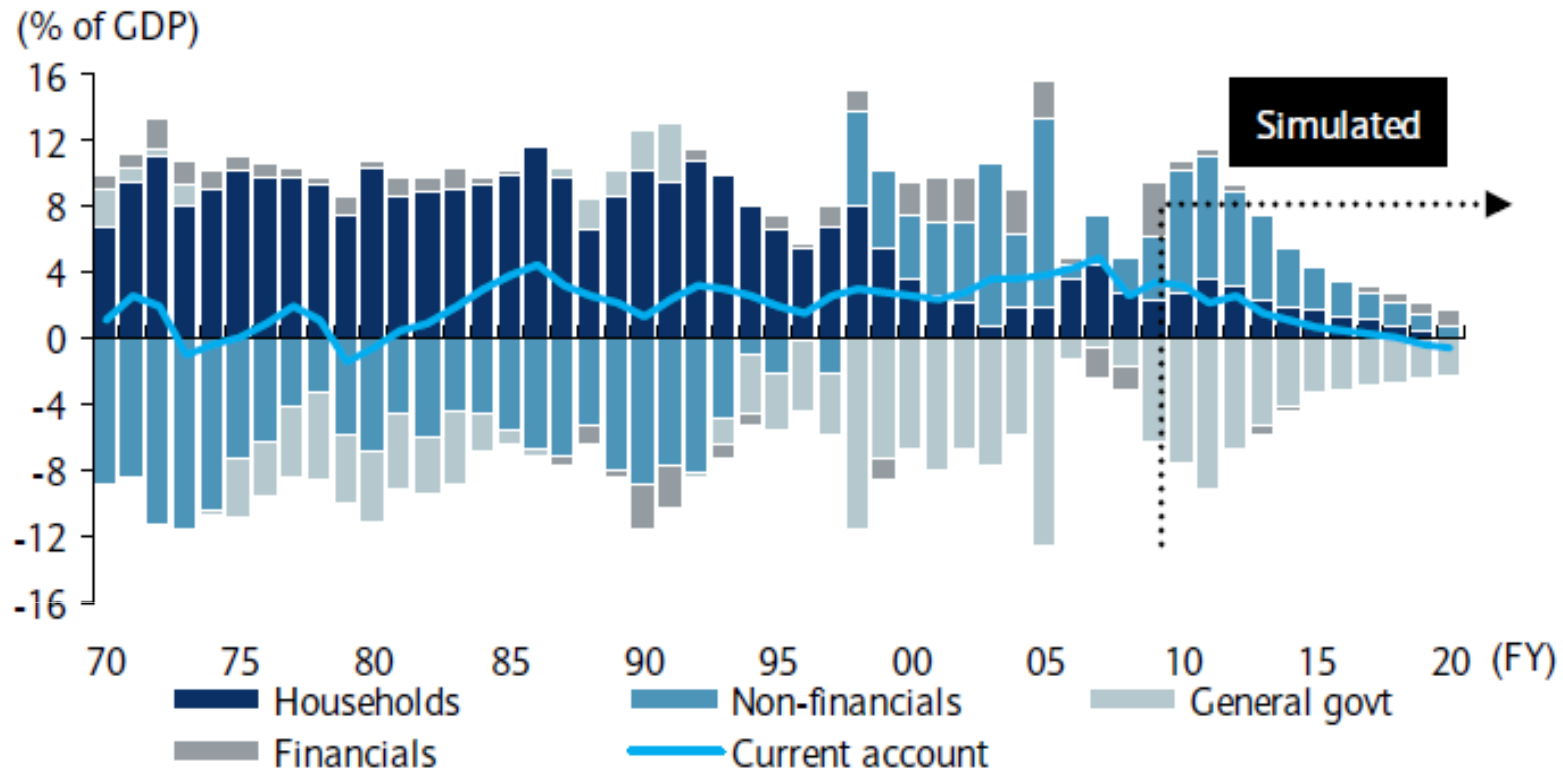
Source: Barclays Research

Taking stock

- Significant tail risk from Europe

- No easy place to hide

    – Correlations are very high

    – Fewer producers of AAA and defensive assets

    – Dangerous negative skewness in natural defensive trades

- In this world LTRO/SMP make sense in some instances, QE/TWIST less so…

A Model and Some Policy Implications

PART II

Reference Model (no Knightians)

- Continuous time perpetual youth OLG model with only finite consumption (withdrawal)

- The only store of values is a tree that produces X fruit, of which a fraction δ can be paid as a dividend and embodied in an asset with equilibrium value V. The rest of the output, $(1 - \delta)X$, is paid as a "wage" to the newly born

- At each instant (but will only look at steady state):

$$C = \theta W; \; W = V; \; C = X \Rightarrow V = \frac{X}{\theta}$$

$$rV = \delta X \Rightarrow r = \delta\theta$$

Knightians and Safe Assets

- There is a hazard λ (henceforth very small) that output drops (once) to $\mu X < X$ (or current status gets resolved, up or down)

- The financial sector can tranch the risky dividend and pledge a share ρ to a *safe* asset, with equilibrium value:

$$V^\mu = \rho\mu\frac{X}{\theta}$$

- A share α of agents is Knightian (convinced that $\lambda \to \infty$ if they invest in risky asset). We shall assume that they demand all the safe assets in equilibrium:

$$\alpha > \rho\mu$$

Equilibrium Interest Rates

$$W^K = V^\mu; \; W^N = V - V^\mu$$

$$\theta V^\mu = \alpha(1-\delta)X + r^K V^\mu$$
$$\theta(V - V^\mu) = (1-\alpha)(1-\delta)X + r(V - V^\mu)$$

$$r^K = \delta\theta - (1-\delta)\theta\frac{\alpha - \rho\mu}{\rho\mu}$$

$$r = \delta\theta + (1-\delta)\theta\frac{\alpha - \rho\mu}{1 - \rho\mu}$$

An Investment Margin

- Chopping trees: Untranched trees can be cut and their wood can be transformed into a low productivity but safe fruit production function

- Fertilization model: Maintaining trees consumes resources

- In both cases we can translate statements about $r - r^K$, into statements about investment and output

Public Debt

- Assume $\rho = 0$ and the govt backs debt by a stream of taxes on dividends τ^μ

$$W^K = D; W^N = V^\tau; D = \tau^\mu \mu X / \theta$$

$$V^\tau = V - D = (1 - \tau^\mu \mu)\frac{X}{\theta}$$

$$r^K = \delta\theta - (1-\delta)\theta\frac{\alpha - \tau^\mu \mu}{\tau^\mu \mu}$$

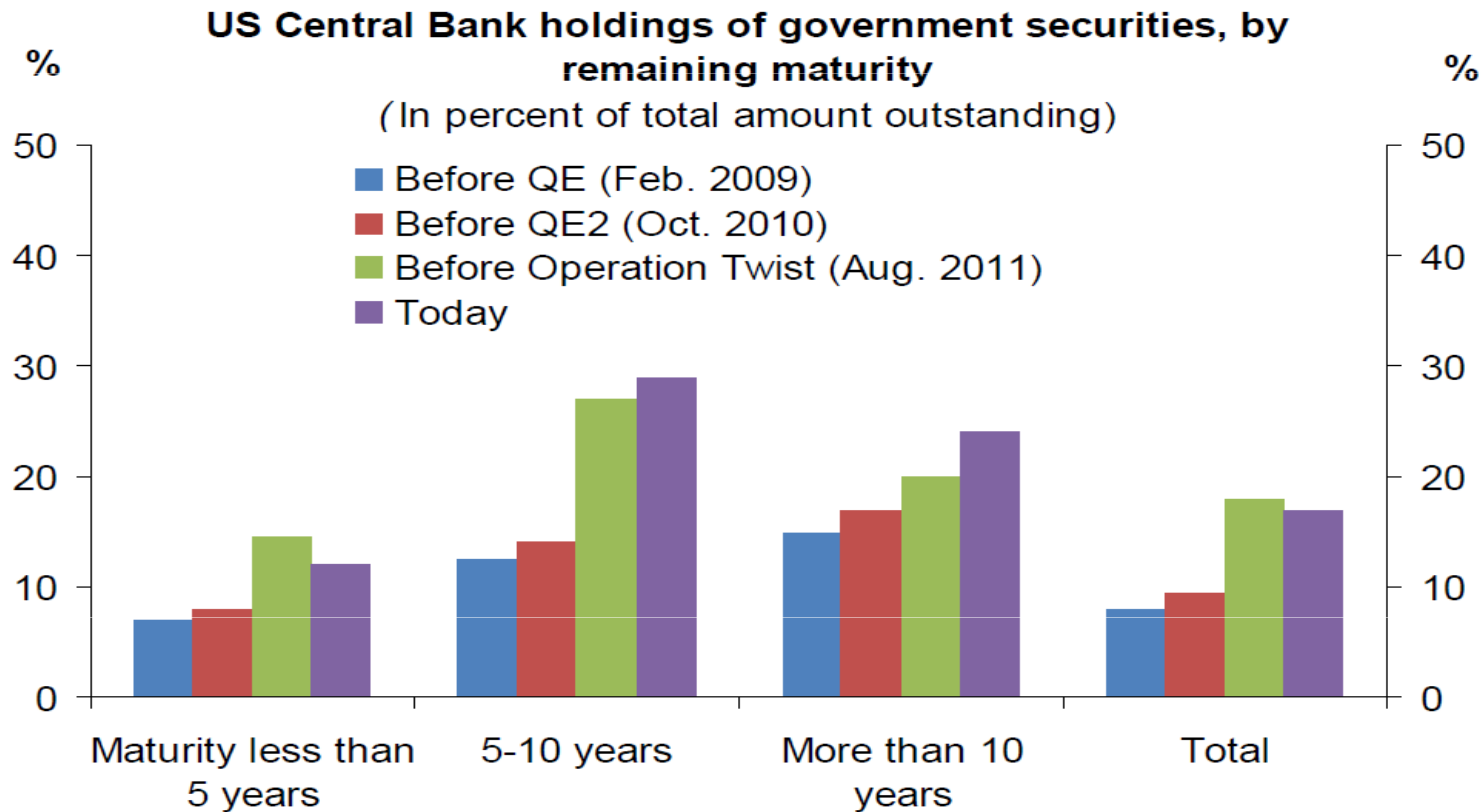$$r = \delta\theta + (1-\delta)\theta\frac{\alpha - \tau^\mu \mu}{1 - \tau^\mu \mu}$$

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Bullish and Bearish Assets

- Reinterpretation: No safe asset but there are Bullish and Bearish assets, such that putting together one of each yields a safe asset

- Suppose that ρ now represents the amount of Bearish assets, which is much smaller than the amount of Bullish assets

- Then we get the same results as above. In particular, if ρ drops, the spread widens and risky assets sell off
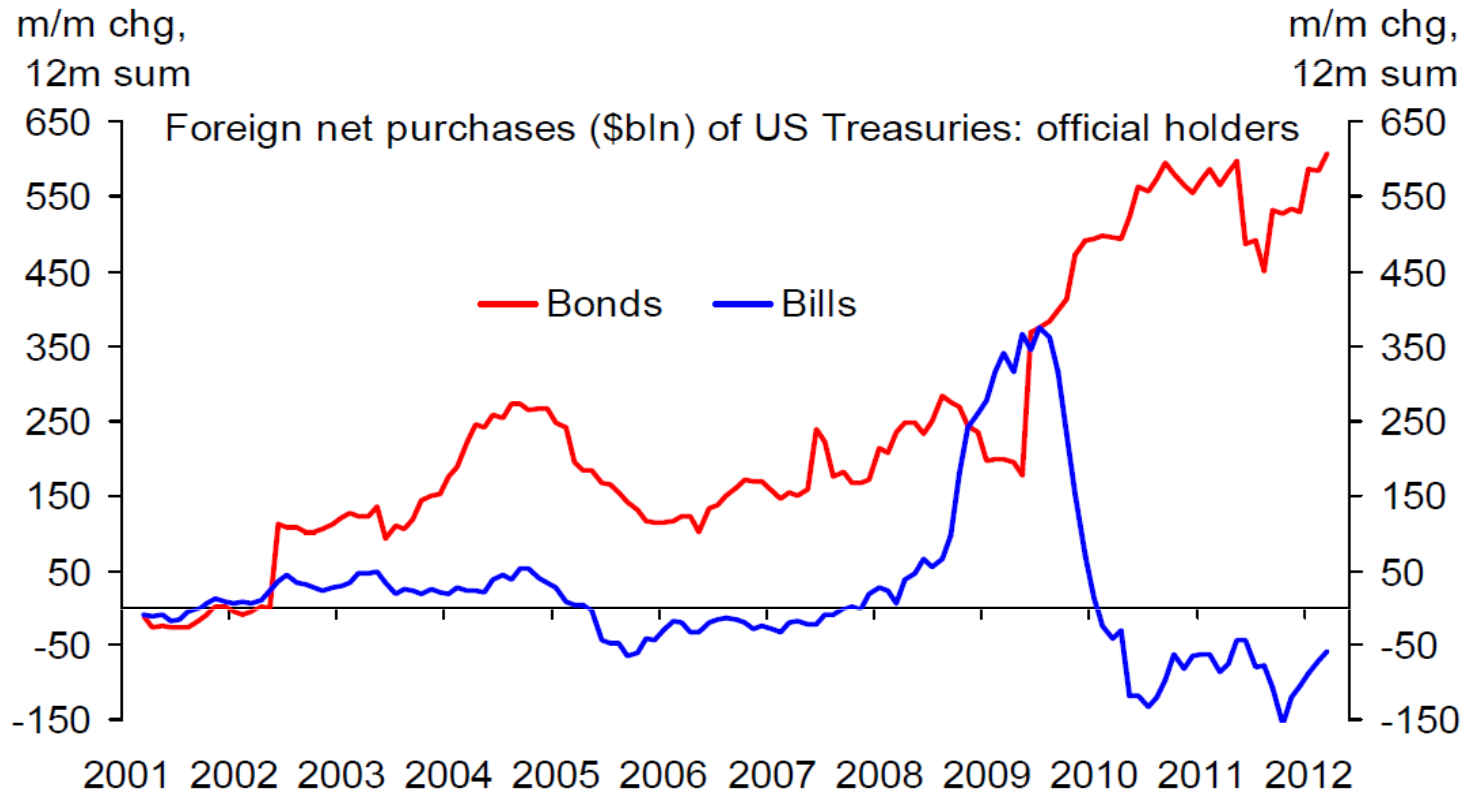
QE/Twist

US Central Bank holdings of government securities, by remaining maturity
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- Today

Source: IMF, DB Global Markets Research

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QE/Twist

m/m chg, 12m sum

m/m chg, 12m sum

Foreign net purchases ($bln) of US Treasuries: official holders

Bonds — Bills

Source: Treasury, DB Global Markets Research

QE/Twist and Safe Assets

- Short term debt: safe asset

- Long term debt: Bearish asset

- Operation Twist / QE has drawbacks:

    – Twist increases the supply of safe assets

    – But it reduces the supply of Bearish assets

Redemption Fund

Debt ratios in the Euro Area (2011)[1]

Legend: In compliance with the Stability and Growth Pact (60 %) — Exceeds the reference value of 60 %

1) In relation to Gross Domestic Product at current prices. BE-Belgium, DE-Germany, EE-Estonia, FI-Finland, FR-France, GR-Greece, IE-Ireland, IT-Italy, LU-Luxembourg, MT-Malta, NL-Netherlands, AT-Austria, PT-Portugal, SK-Slovakia, SI-Slovenia, ES-Spain, CY-Cyprus.

Source: EU (November 2011)

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ERF and Safe Assets

- Redemption fund

    – Member states transfer debt exceeding 60% to ERF, which takes some new collateral and issues jointly guaranteed debt. It is a sinking fund

    – *Model*: Tranching increases supply of safe assets (2.5 trillion euros right away) and lowers r

    – Of course US rates and other safe heavens could see a rise…

Credit Policies

- QE1

- BOE / UK Treasury newly announced Sterling Liquidity Facility to foster "risky" investment

- *Model:* Increase demand for risky asset lowers r and increases investment

  - Caveat: As long as the govt doesn't generate risky debt as a result of the funding…

Final Remarks

- The European crisis is very far from over

- The risk of a global systemic shock is too high for comfort

- This situation has exacerbated a shortage of assets that already caused severe distortions before the subprime crisis

- In is central to take into consideration this shortage when thinking about macro/financial policy

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