

ECONOMICS MADE EASY



# A Journalism Workshop

## It's a Small World After All

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THE FEDERAL RESERVE BANK OF RICHMOND

RICHMOND ■ BALTIMORE ■ CHARLOTTE



# Disclaimer

This presentation reflects only my views and opinions, and does not necessarily reflect the position of the Federal Reserve Bank of Richmond.





# Outline

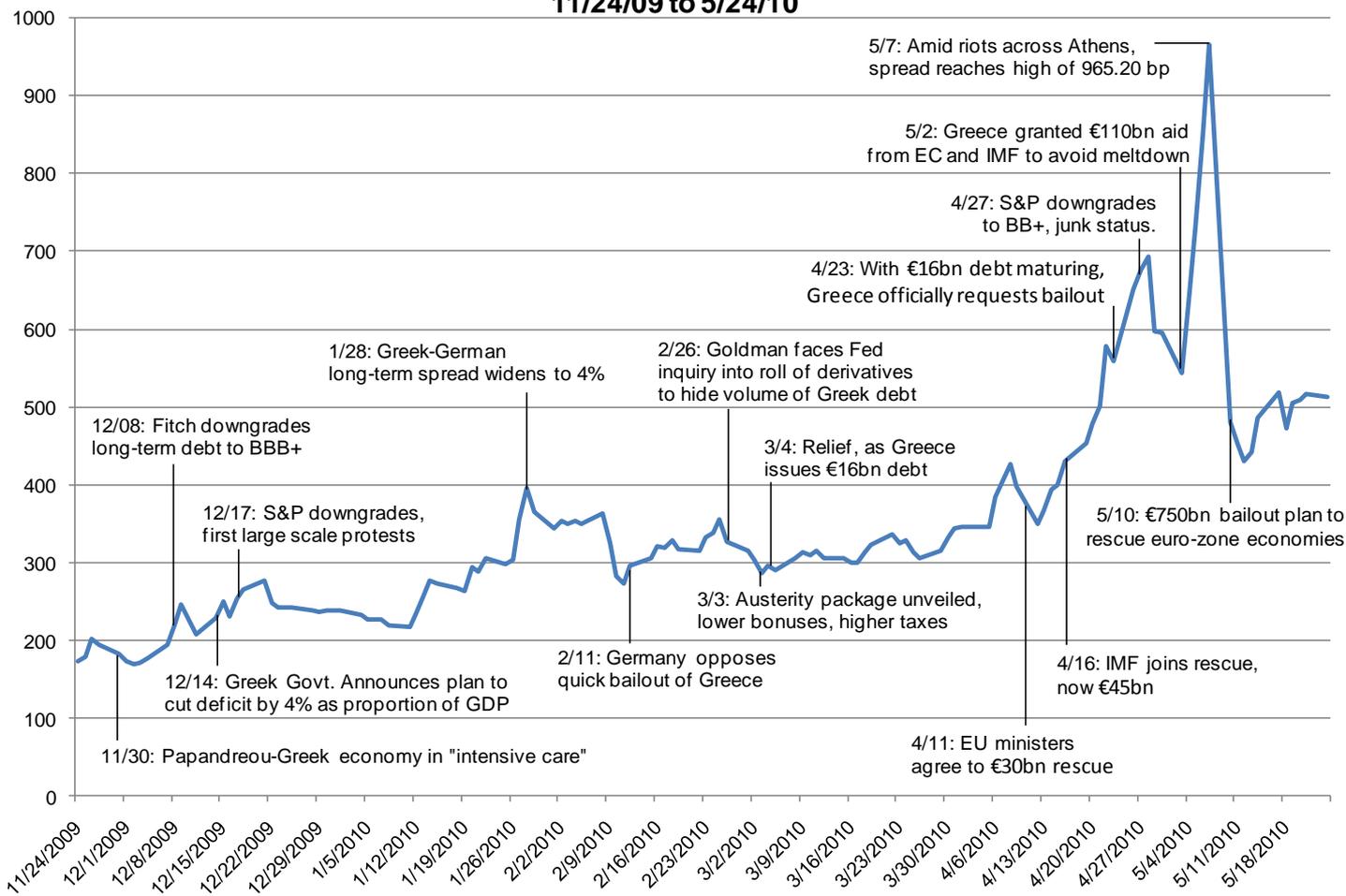
- Risk issues (economic)
  - How are the problems in Greece common to the other countries in the periphery?
  - How do the fundamentals contribute toward assessing the risk of contagion?
- Risk issues (capital markets)
  - What's going on with sovereign debt yields and CDS spreads in the periphery?
- Policy issues
  - Briefly, what's going on there and what are the chances it will work?
  - The creation of moral hazard?
  - Spillover effects for the U.S. economy and capital markets
- Lessons for municipalities?
- Demographics and overpromising: A common theme?



# Greek Crisis Timeline

## Greek-German 10-Year Sovereign Debt Spread

11/24/09 to 5/24/10

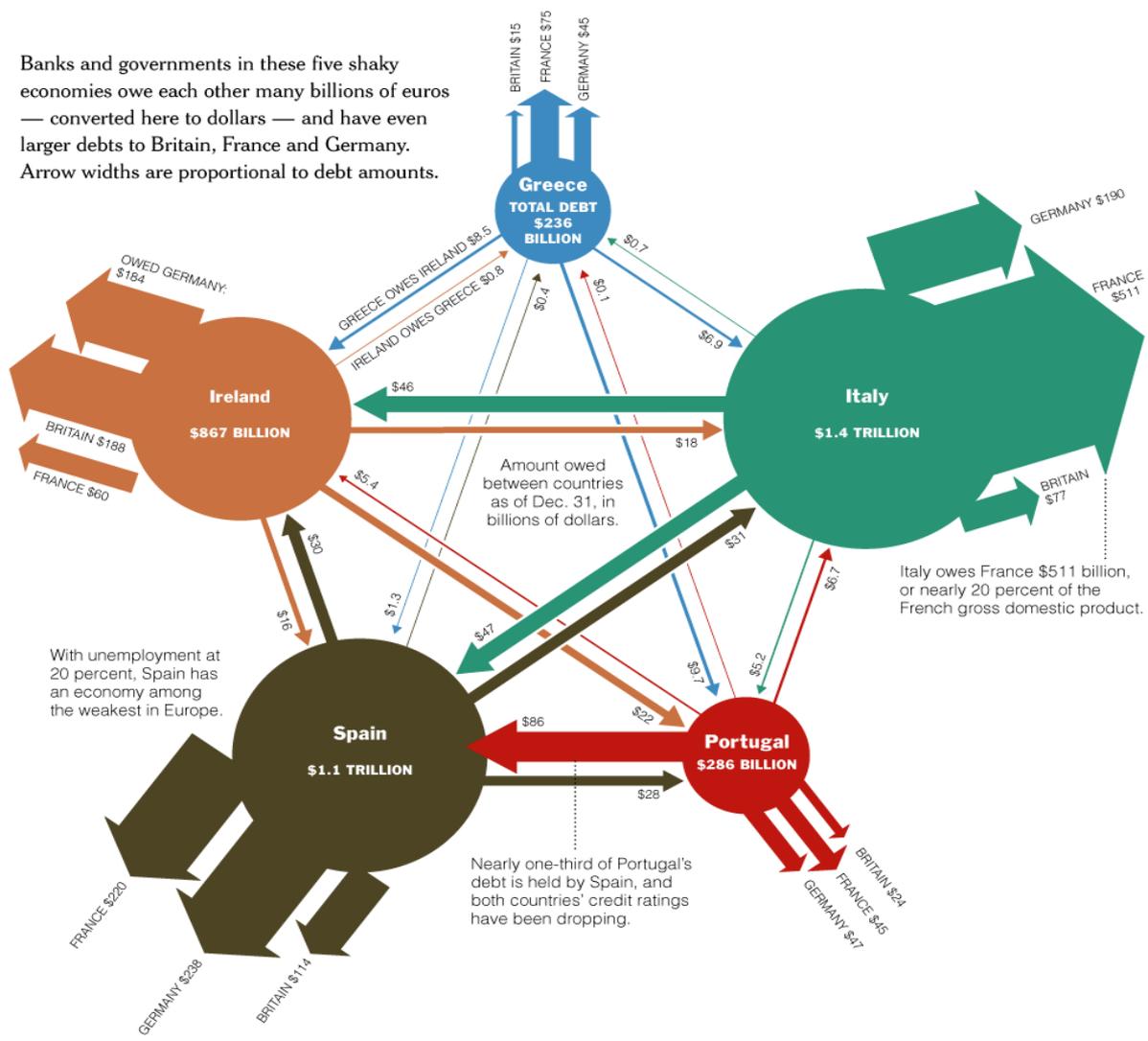


Source: BIS and New York Times





Banks and governments in these five shaky economies owe each other many billions of euros — converted here to dollars — and have even larger debts to Britain, France and Germany. Arrow widths are proportional to debt amounts.



Source: BIS and New York Times



# Reporting Banks' (Total) Exposure to Europe

	Exposure to:						
	Portugal	Italy	Ireland	Greece	Spain	PIIGS	Europe
<b>World Banks</b>	272,347	1,317,875	831,910	223,965	1,059,854	3,705,951	15,664,589
<b>European Banks</b>	230,976	951,426	603,098	177,553	772,592	2,735,645	10,045,773
<b>U.S. Banks</b>	4,949	51,810	73,770	13,701	55,280	199,510	1,342,157

Note: All amounts in millions of dollars

Source: Bank for International Settlements, Preliminary International Banking Statistics, Table 9B, 2<sup>nd</sup> Quarter 2010





# Economic Fundamentals

## Selected Credit Indicators for 2009

(% GDP)	Greece	Portugal	Spain	Ireland	Italy
Fiscal deficit	13.6	9.4	11.2	14.3	5.3
Gross government debt	115.1	76.8	53.2	64.0	115.8
Net government debt <sup>a</sup>	109.8	72.6	41.8	46.8	110.5
Govt. interest payments/revenue (%)	13.5	6.9	5.2	6.2	9.9
Average GDP growth (1995-2009, %)	3.2	2.0	3.1	5.8	0.9
Household gross debt (2008)	59.9	105.6	87.8	113.4	53.2
Corporate gross debt (2008)	66.4	157.3	136.1	165.8	75.5
Export performance (2000=100) <sup>b</sup>	82.3	95.8	97.2	119.8	70.0
Net external debt	68.3	77.6	86.8	-53.5	39.8

<sup>a</sup> Gross debt minus liquid financial assets (currency and deposits)

<sup>b</sup> Exports of goods and services (in real terms) relative to export markets (weighted average of imports in trading partners)

Source: Eurostat, Fitch

- The fiscal deficits are pretty high, and interest payments are high, too.
- Net external debt positions are relatively large in Greece, Portugal, and Spain. Germany, for example, is a net creditor. External debt is held by non residents, which requires sending interest abroad (residents must forego consumption).
- Periphery countries tend to have high real exchange rates (which means their goods are expensive). This leads to increasing current account deficits (which lead to increases in net external debt)
- To lower real exchange rates to become more competitive you need to either
  - 1) reduce the nominal exchange rate (not possible in the Euro zone), or
  - 2) reduce the inflation rate (which here means lower wages and prices).



# High REER Means Your Goods are Expensive

European Central Bank Harmonised Competitiveness Indicator (HCI), Jan. 2000 to March 2010

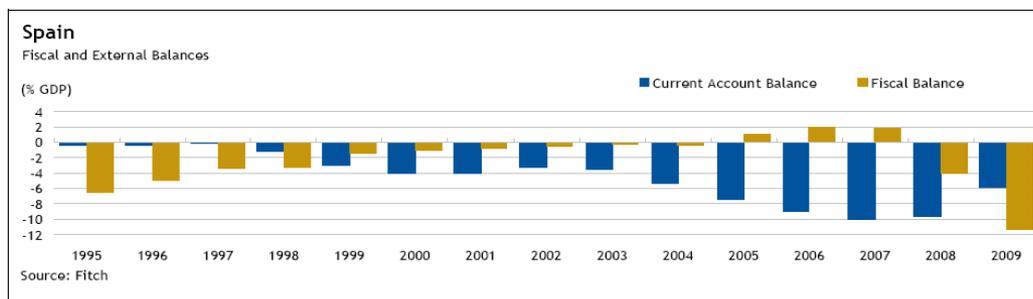
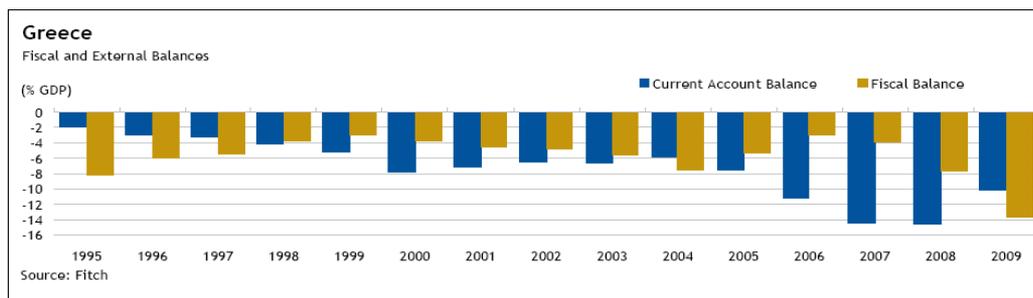


Source: European Central Bank



# When You Run a Current Account Deficit, You Borrow

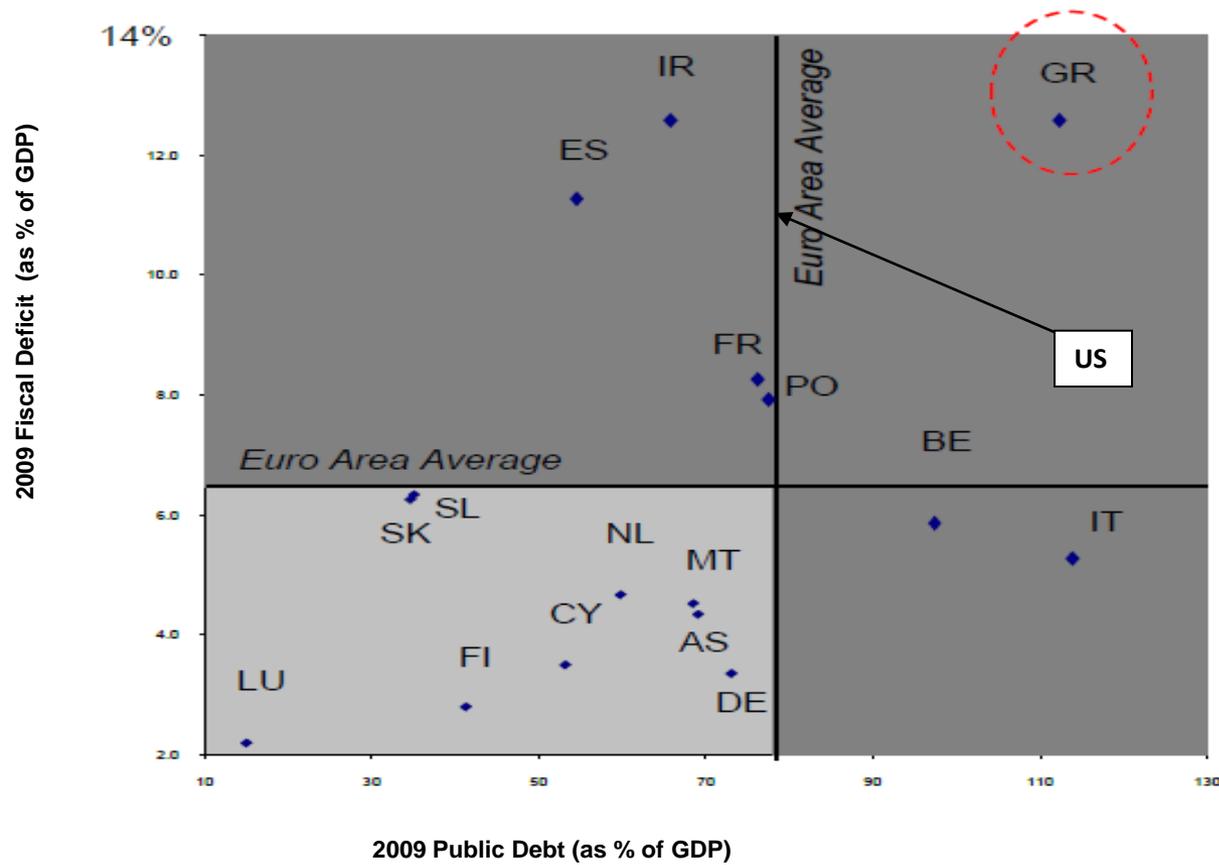
- What you use it for is important.
- In Spain, the current account deficits were associated with high private sector investment rates. (Some of which was residential housing)
- In Greece, the current account deficits moved with fiscal deficits (and domestic savings was low). Also remember that the Greek government cheated on its fiscal numbers.
- That means the borrowing from the ROW funded government expenditures (look at Greek HH and corporate debt; it's low)





# Greece is an Outlier

High debt, large fiscal deficits

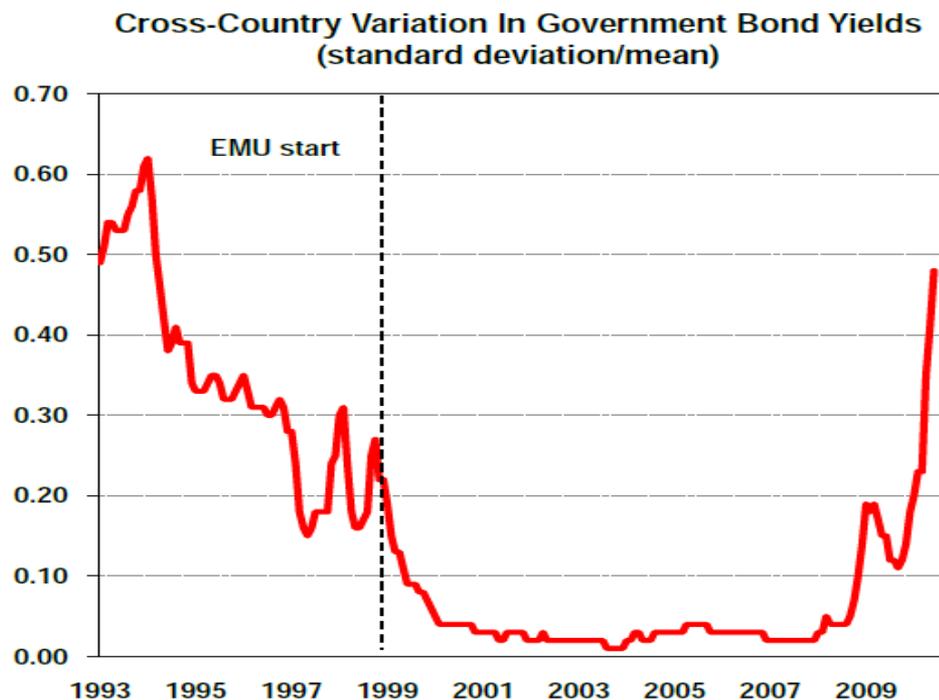


Source: Citigroup Global Markets



# Why Did Interest Rates Converge?

Monetary union may have hindered market discipline, allowing some states to borrow at low rates.



Source: Citigroup Global Markets



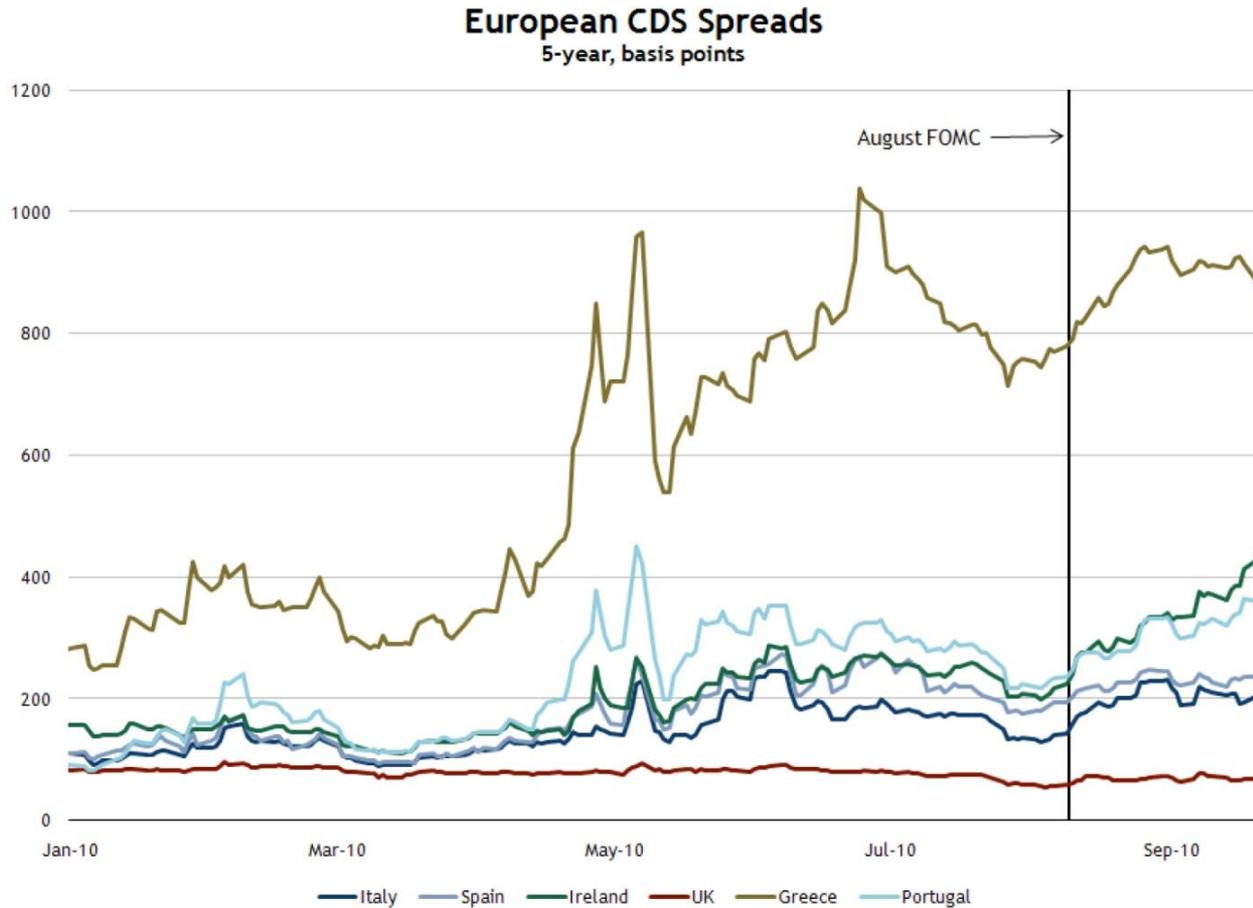


## What's the Fundamental Punch Line?

- External adjustment likely to require lower wages and prices in Greece
- Potential principal use of the increased external borrowing was to increase the size of the public sector
- Very sharp austerity measures required
- The Greek vote to pass them was relatively narrow (Spain's, too)
- What happens in a parliamentary system if they can't stick to the measures?



# Sovereign CDS Still Elevated

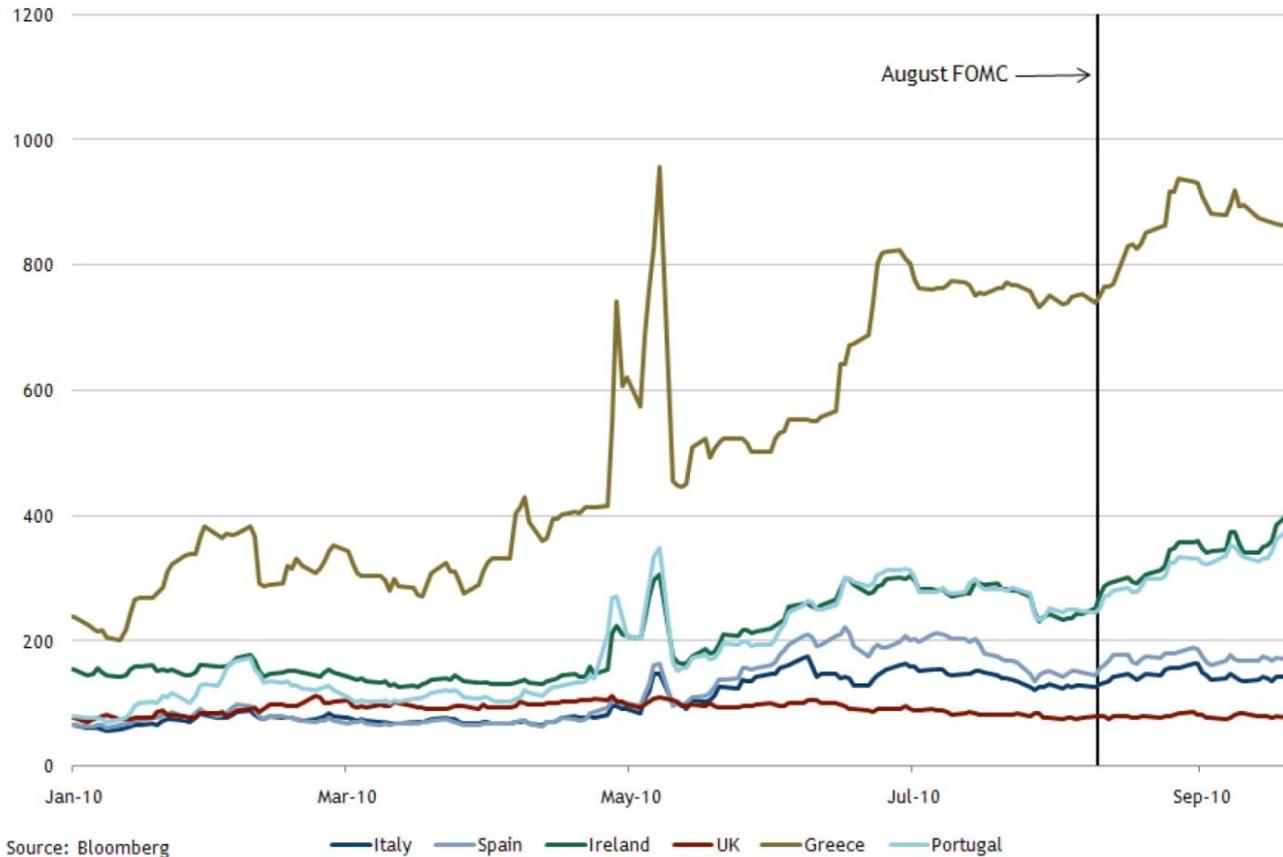


Source: Bloomberg



# Sovereign Yields Elevated

**European Bond Spreads**  
Basis points, 10-year bond spread to German bonds



Source: Bloomberg

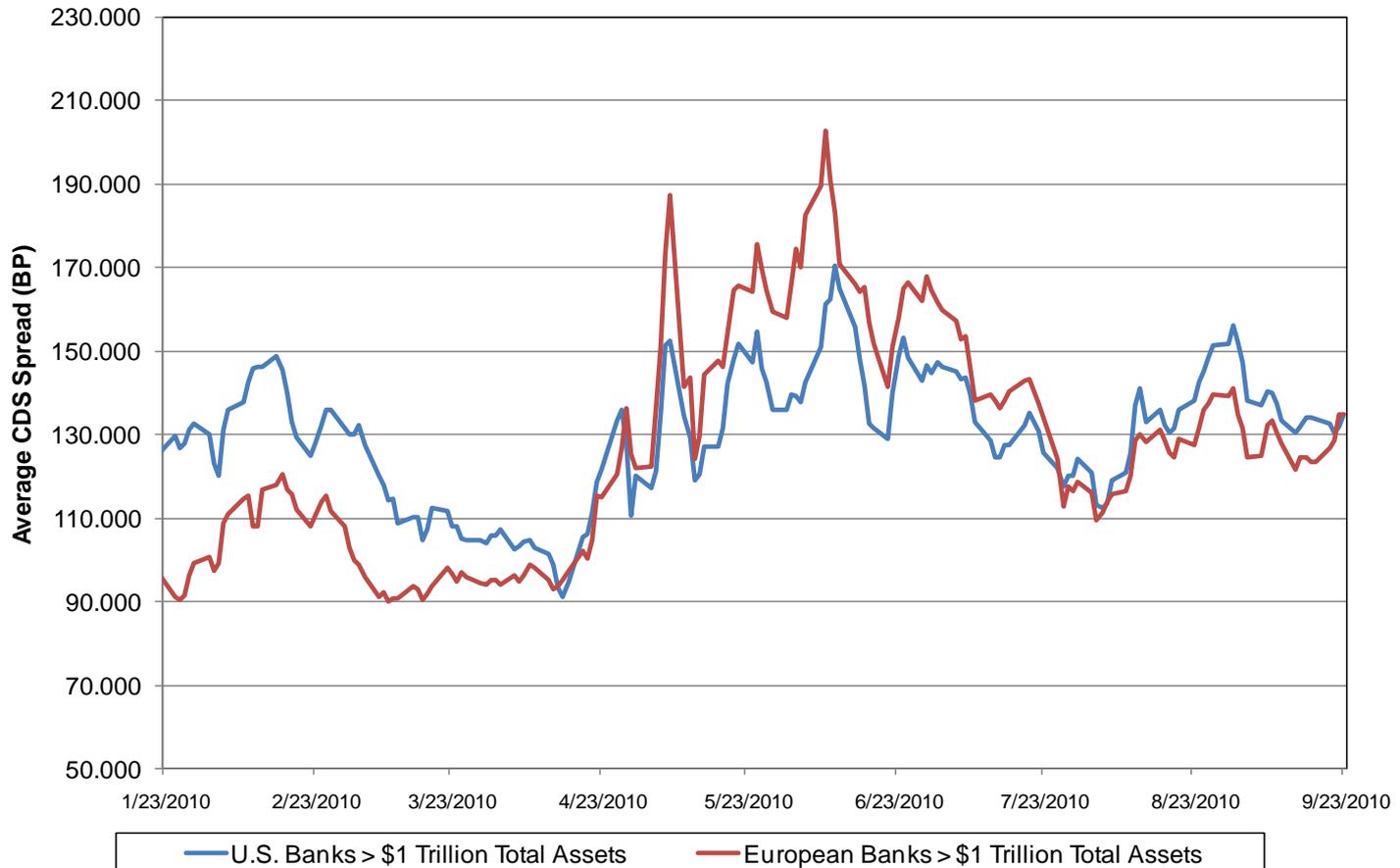
Source: Bloomberg



# Big Bank CDS Spreads Moving Together

## European vs. U.S. Banks

Average CDS 5-Year Senior Spreads (1/23/2010 - 9/23/2010)  
Euro Banks (13) CDS priced in € Euros , U.S. Banks (4) CDS priced in \$ U.S.



Source: Bloomberg



# Euro Banks' Spotty Reporting Exposures

Institution	Country	Currency Reported	Publicly Declared Exposure (millions) to:				
			Portugal	Italy	Ireland	Greece	Spain
Credit Agricole	France	Euro €				3,430	
Societe General	France	Euro €				3,000	
BNP Paribas	France	Euro €				8,000	
Deutsche Bank	Germany	Euro €		3,200	200	500	
Deutsche Postbank AG	Germany	Euro €	50	4,700	350	1,300	1,200
Commerzbank	Germany	Euro €				3,100	
Lloyds Banking Group	UK	GBP £	0			0	
RBS	UK	GBP £	1,400			1,000	
Barclays	UK	GBP £	Small			200	Small
Standard Chartered	UK	GBP £				None	
HSBC	UK	Euro €				1,500	
Credit Suisse	Switzerland	CHF				Not Material	
UBS	Switzerland	CHF	Minimal			Minimal	Some
Assicurazioni Generali Spa	Italy	Euro €	600			749	
Intesa Sanpaolo	Italy	Euro €				1,000	
UniCredit	Italy	Euro €	32	31,500	66	993	550
KBC	Belgium	Euro €	600			1,200	2,400
Ageas NV	Belgium	Euro €	2,250			3,152	1,780
Dexia	Belgium	Euro €				4,900	
ING Group	Netherlands	Euro €	1,900	7,900		3,000	3,000
Aegon	Netherlands	Euro €	58	143	138	92	1,780
Banco Bilbao Vizcaya Argentaria SA	Spain	Euro €	Little			Little	
Banco Santander	Spain	Euro €	3,300			200	24,000

Source: Individual institution websites





# Spillovers

- Sovereign debt crisis is a tough policy problem (sovereigns can't respond with tax cuts or spending increases).
- It's also a tough problem for monetary policy right now, because policy rates are near zero in many countries.
- There is potentially a flight to quality to the dollar and to Treasuries.
  - Appreciating dollar and capital inflows aren't helpful in resolving our own balance of payment problems.
  - But what would the risk premium look like for sovereigns with high debt, and how would it evolve over time? How would it affect U.S. fiscal policy over the longer term?





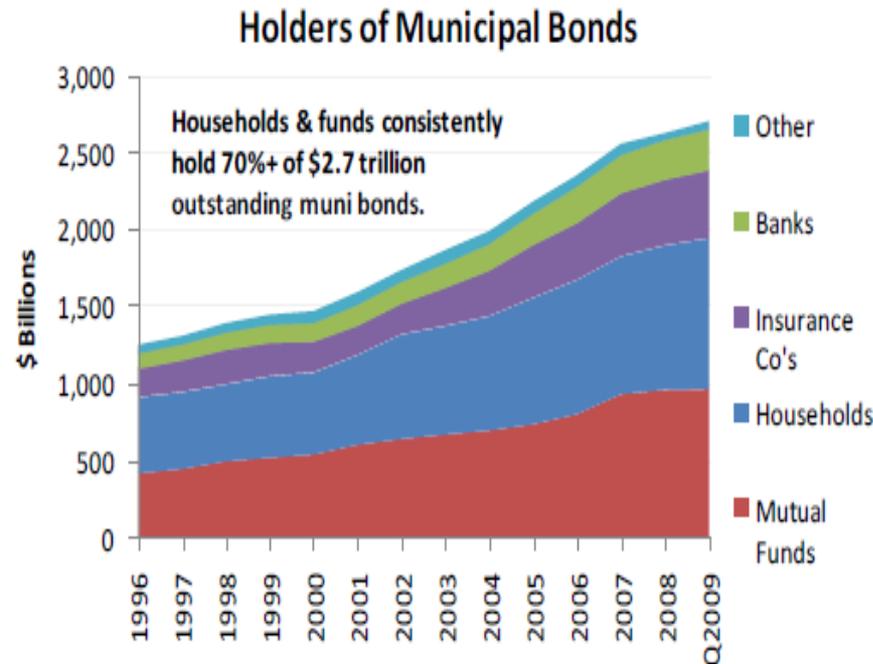
# What Does the Future Hold for U.S. Municipalities?

- Risk issues (fundamentals)
  - What are the current sources of tension in municipal finance? What are the longer term stresses?
- Policy issues
  - Unfunded retiree liabilities are very large. While unfunded pension liabilities appear to be a smaller problem than retiree health care liabilities, the pension liabilities are likely understated (perhaps dramatically).
  - A set of accounting and actuarial accounting standards allow states to underfund liabilities and to tweak contributions. They may also delay recognition of policy solutions.
  - Demographics and overpromising are the common theme linking U.S. states with the periphery of Europe.



# Scaling Potential Credit Market Implications

- How large is the municipal bond market? (Roughly \$2.8 trillion; publicly traded piece is about \$1 trillion)
- Who's holding municipal bonds?



Source: SIFMA, Federal Reserve



# Should Municipal Debt Holders be Concerned?

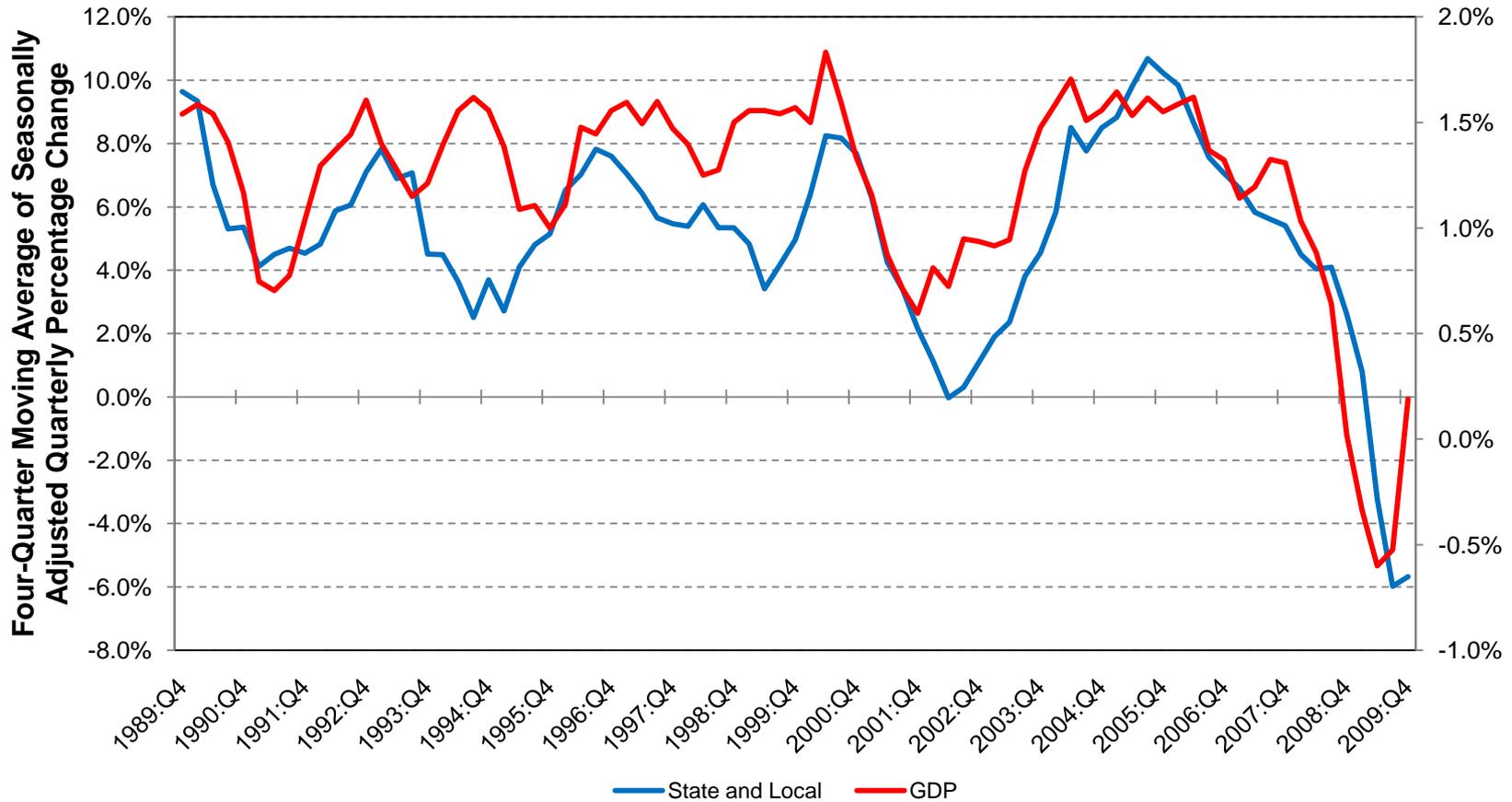
Selected European and US State CDS Spreads and Implied Default Probabilities						
	1 year	5 year	5-1 year	10-1 year	1-year PD	5-year PD
California	169.9	268.6	98.7	104.7	9.54%	<b>51.01%</b>
Illinois	234.7	228.3	-6.4	-8.7	13.65%	<b>46.29%</b>
<b>Greece</b>	<b>883.6</b>	<b>696.9</b>	<b>-186.7</b>	<b>-305.5</b>	<b>15.53%</b>	<b>45.65%</b>
Michigan	186.2	199.3	13.1	10.8	11.06%	<b>41.95%</b>
New Jersey	153.4	192.9	39.5	44.5	8.97%	<b>40.58%</b>
Portugal	349.6	325.6	-24	-62.6	6.58%	<b>24.89%</b>
Ireland	219.1	234.3	15.2	6.1	4.22%	<b>18.73%</b>
Spain	186.3	213.7	27.4	11.1	3.49%	<b>17.04%</b>
Germany	21.7	40.7	19	24.2	0.42%	<b>3.55%</b>
US	24.3	39.2	14.9	19.6	0.50%	<b>3.50%</b>

*as of 05/25/2010, default probability is cumulative and incorporates Bloomberg-specified recovery rates. Standard municipal recovery is 80 while sovereign is 40. Source: Bloomberg.*

Source: Bloomberg

# Short-Term Relief in Municipal Finance Tied to Recovery

## State & Local Tax Receipts and GDP, 1989:Q4 to 2009:Q4



Source: Bureau of Economic Analysis, U.S. Census Bureau

# ... and Long-Term Problems with Pensions

10 Largest Nominal Unfunded Pension Liability Obligations			
	Latest Liabilities	Unfunded Liabilities	Unfunded Liabilities /Liabilities
California	\$ 453,956,264.00	\$ 59,492,498.00	13.11%
Illinois	\$ 119,084,440.00	\$ 54,383,939.00	45.67%
New Jersey	\$ 125,807,485.00	\$ 34,434,055.00	27.37%
Massachusetts	\$ 58,817,155.00	\$ 21,759,452.00	37.00%
Ohio	\$ 148,061,498.00	\$ 19,502,065.00	13.17%
Colorado	\$ 55,625,011.00	\$ 16,813,048.00	30.23%
Connecticut	\$ 41,311,400.00	\$ 15,858,500.00	38.39%
Texas	\$ 148,594,953.00	\$ 13,781,228.00	9.27%
Pennsylvania	\$ 105,282,637.00	\$ 13,724,480.00	13.04%
Oklahoma	\$ 33,527,899.00	\$ 13,172,407.00	39.29%

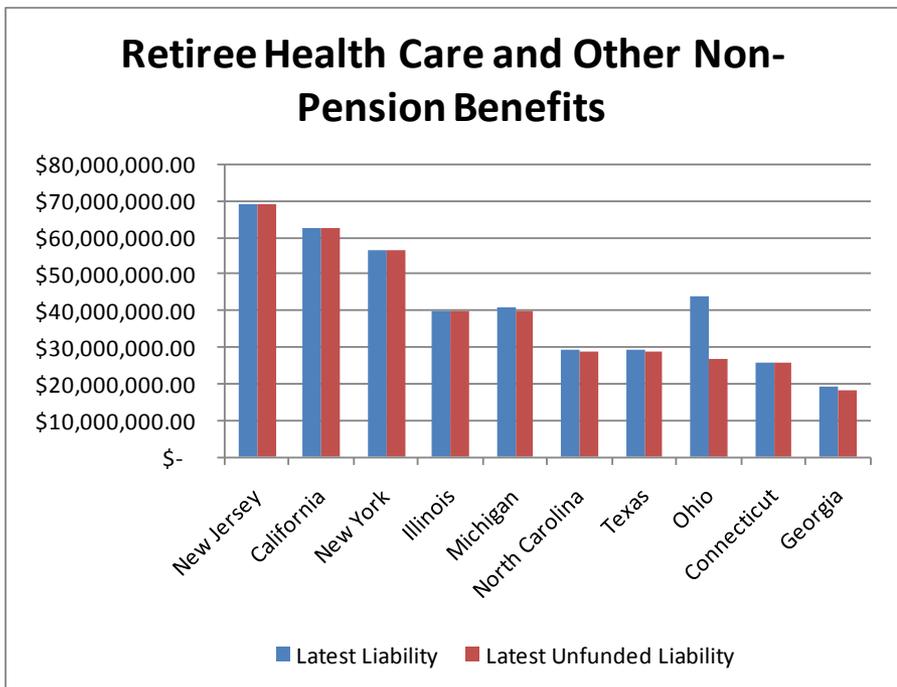
Note: Figures in thousands

Source: "The Trillion Dollar Gap," Pew Center on the States, February 2010





# ... and Big Unfunded Retiree Health-Care Liabilities



**Size of Unfunded Obligations to GSP** (figures in thousands)

	Combined Unfunded Pension and Retiree HC Obligations	Combined Obligations/GSP
California	\$ 121,955,498.00	6.60%
Illinois	\$ 94,330,617.00	14.89%
New Jersey	\$ 103,334,055.00	21.76%
Texas	\$ 42,392,812.00	3.46%

Source: The PEW Center on the States



# Measurement of Pension Liabilities Understates the Problem

- Accounting rules require discounting of the liabilities at the expected rate of return (GASB 25 and ASOP 27).
  - For the 116 biggest state plans in 2008, the discount rates used were: 7.97 (mean), 8.0 (median), and 8.0 (mode).
  - 8 percent seems to be a rule of thumb
  - Where's it come from? Seems to be the return from a 60/40 mix of stocks and large corporate bonds over a long period
- That doesn't square with the economics
  - . . . “there is no professional disagreement. The only appropriate way to calculate the present value of a very low risk liability is to use a very low risk discount rate.”

Donald Kohn, 5/20/2008





## Why Don't Things Square?

- Example: Suppose workers are due a \$1 pension next period
  - Then  $PV = 1/(1+r)$  where  $r$  is the discount rate
  - If the pension plan discounts at 10% (risky rate), a fully funded plan requires contributions of \$0.91. If it discounts at 5% (risk free rate), it requires contributions of \$0.95.
  - The expected value of the fund next period is the same.
- The problem is “public pension plans are essentially bullet-proof promises to pay.” (Kohn again)
  - So, no matter what, taxpayers have to come up with \$1 next period.





## Implications for (and of) Policy

- How to interpret the \$0.04 difference?
  - If plans discount the bullet-proof liability at the risky rate, they pay \$0.91 for a \$0.95 riskless pension.
  - The difference is market risk. Who bears it? Tomorrows' workers.
- What's the bottom line?
  - You don't discount what you owe in the future by what you expect to make in the future.
  - Using high discount rates (like 8 percent) reduces the present value of a future (pension) payment.
  - Current accounting rules encourage (require?) an understatement of pension liabilities.





## How Big is the Adjusted Liability?

- State pension plans had \$1.94 trillion in assets as of 12/08.
- The sum of their liabilities were \$2.98 trillion (remember, this uses the 8 percent discount rate). This leads to a gap of \$1.04 trillion.
- What's the right discount rate?
  - If the “taxable muni rate” is used, the gap is \$1.27 trillion.
  - If the Treasury rate is used, the gap is \$3.26 trillion (total adjusted liabilities are \$5.17 trillion).
- Joshua Rauh is a key researcher on looming municipal pension problems and the source for slides 24-27.



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