European Sovereign Credit Risk: A New Phase of the 2007 – 2010 Global Financial Crisis

Assessing the Origins, Solutions and Potential Implications for Issuers

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Tom Joyce
Debt Capital Markets Strategist
(212)-250-8754
Tom.joyce@db.com

Stefan Auer
Debt Capital Markets
(212)-250-6386
Stefan.auer@db.com

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Deutsche Bank

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A Greek Tragedy

"If I owe you a pound, I have a problem, but if I owe you a million, the problem is yours."

~ John Maynard Keynes (English Economist, 1883 – 1946)

"There was high corruption…[which] became endemic…and repairing the situation may draw blood from us all."

~ Greek Prime Minister, George Papandreou (in Davos, Switzerland, Jan 2010)

"Changing the fundamentals of a society is an epic struggle...We are doing nothing less than reinventing how our society and economy operates."

~ Greek Finance Minister, George Papaconstantinou (February, 2010)

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The Problem

Section 1

An Evolution of the Global Banking Crisis

Similar to many prior global banking crises…

…the latest chapter of the 2007 – 2010 Global Financial Crisis has manifested itself in a sovereign credit crisis

The Historical Legacy of Banking Crises

- **Significantly higher public indebtedness, well beyond cost of bailout packages**
  - On average, public debt nearly doubles within 3 years
- **Private sector deleveraging begins approximately 2 years after the beginning of the crisis, and lasts for ~ 6 – 7 years**
  - Accompanied by sharp escalation of Government debt
- **Average increase in unemployment of ~7% points, remaining elevated for ~ 5 years**
- **Once public debt > 90% of GDP, economic growth slows by ~ 1% per annum**

In addition, in over 50% of banking crises, private sector deleveraging results in a sharp escalation of Government debt and sovereign defaults

Historical Perspective

Sovereign Crises (1970 – 2000)

Type of Sovereign Default	# of Crises	Median Length (Years)
Default Only	4	3 yrs
Default & Currency Crisis	13	5 yrs
Default & Banking Crisis	7	8 yrs
Triple Crisis	21	10 yrs
All Crises	**45**	**8 yrs**

Sovereign CDS Default Triggers

- **Failure to Pay**
- **Repudiation / Moratorium**
- **Restructuring**

The Evolution of the 2007 – 2010 Global Financial Crisis

Early 2007 - Present

Real Estate Crisis
- *Residential*
- *Commercial*

Mid 2007 – 2008

Banking Crisis – Phase 1
- *Securities Market*

2008 - Present

Banking Crisis – Phase 2
- *Bank Loans*

2010

Sovereign Credit Crisis

Source: Deutsche Bank Global Markets Research. Carmen Reinhart and Kenneth Rogoff: “This Time is Different.” McKinsey Global Institute: “Debt and Deleveraging: The Global Credit Bublle and its Economic Consequences.”

Assessing the “Magnitude” of Greece

Although Greece is small on a relative basis…

… the fragility of the global financial system remains VERY high…

… and therefore the contagion of sovereign credit issues among smaller states will be significant

If all 3 rating agencies were to rate Greece below A-/A3, Greek public debt would no longer be eligible as collateral for repo operations when the ECB returns to its pre-crisis collateral standards at the end of 2010

Key Facts on Greece

- **Small country.** Accounts for roughly 2.7% of Euro-zone GDP, and nearly 4% of Eurozone public debt
- **EMU Membership.** Greece joined the Euro in 2001, several years after monetary union had begun.
- **Accounting Transparency and Credibility Issues.** Greece has a serious credibility problem with its public data
  - Although it claimed to be under the EMU required 3% fiscal deficit level in 2001, Greece’s fiscal data has since been proved wrong (actual deficit was nearly 4%)
- **GDP Growth.** Greece’s economy did not decline nearly as much in 2009 (1.2%) as did the Euro-zone as a whole.
  - However, Greece is nonetheless expected to lag the recovery in 2010 (EU projecting 2010 GDP decline for Greece of -0.3%, versus 0.7% growth for Euro-zone)
  - Approx 1/3 of Greece’s exports come from transportation (shipping); significant impact from global recession
- **Fiscal Deficit:** Core of Greece’s financial problem; highest in Europe at 12.7%
- **Current Account Deficit:** Currently very high (~11.9%), but rapidly declining from peak of 15.2% in Q3, 2008
- **Debt / GDP:** EU projects it to be the highest in Europe by 2011, at 135.4% (already at 120%).
- **Greek Banks.** As compared to most other EU countries, Greece does not have a particularly severe banking problem. Solid deposit base. Less dependent on ECB liquidity.
- **Rating Agencies.** Have all downgraded Greek public debt one notch in December ‘09. **(Currently: BBB+, A2, BBB+).**

Relative Economic Size

Country	% of Euro - 16	% of Euro - 27
Germany	26.7	20.3
France	21.3	16.1
Italy	**17.0**	**12.9**
Spain	**11.8**	**8.9**
Netherlands	6.4	4.8
Belgium	3.7	2.8
Austria	3.0	2.3
Greece	**2.7**	**2.0**
Finland	1.9	1.5
Ireland	**1.9**	**1.4**
Portugal	**1.8**	**1.4**
Slovakia	0.7	0.5
Luxembourg	0.3	0.2
Slovenia	0.3	0.2
Cyprus	0.1	0.1
Malta	0.0	0.0
UK	n.a.	13.5
Poland	n.a.	2.6
Sweden	n.a.	2.4
Denmark	n.a.	1.9
Czech Republic	n.a.	1.2
Romania	n.a.	1.0
Hungary	n.a.	0.8
Bulgaria	n.a.	0.3
Lithuania	n.a.	0.2
Latvia	n.a.	0.2
Estonia	n.a.	0.1

Source: Deutsche Bank Markets Research. Wall Street research.

The Problem: Twin Deficits

Twin deficits are a key determinant for analyzing sovereign credit risk

A European Sovereign Credit Crisis was sparked by Greece's rapidly rising fiscal deficits, and quickly spread throughout the region's southern fringe (Portugal, Spain, Italy)

Greece's deficit, at 12.7% of GDP, is the highest in the European Union

Assessing Euro Sovereign Risk Through the Lens of Twin Deficits

Focus on Greece

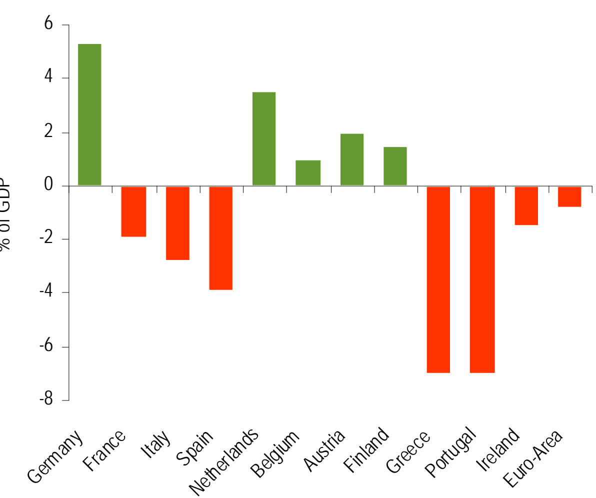
- **At the core of Greece's problem is a serious Fiscal problem**
  - **Related to this is a significant credibility problem with its accounting and data**
- **Greece's Fiscal Deficit:** At 12.7% of GDP, it is the largest in the European Union, and well above the 3% limits set by the EU's Maastricht Treaty in 1992
- **Greece's Current Account Deficit:** Peaked in Q3 2008 at 15.2%; declined to 11.9% in Q3 2009; DB projects a further reduction to 10.4% by the end of 2010

Deficit Risk Buckets for Euro-Zone Countries

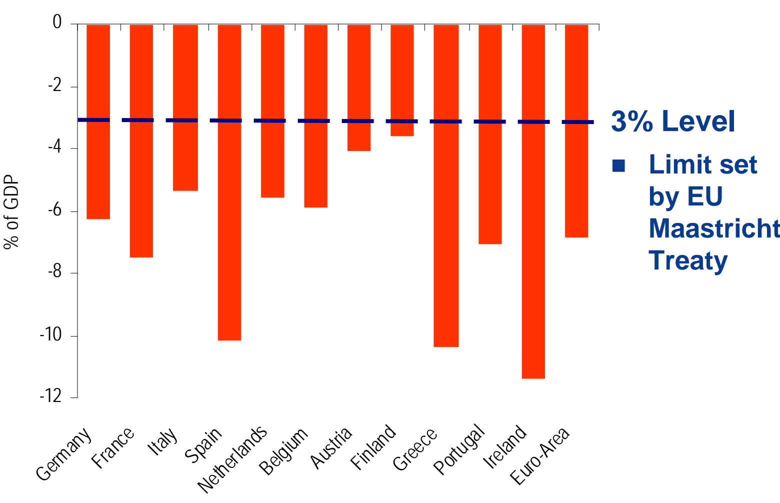
Risk Buckets	Countries
High	Greece, Ireland
Medium	Portugal, Spain, Italy
Lower	France, Austria, Finland, Netherlands

****** As noted in DB Global Markets research, sovereign CDS levels may be assessed as too wide or tight vis-à-vis the fiscal risk buckets established above*****

2010 Current Account Deficit (% of GDP)



2010 Fiscal Deficit (% of GDP)



Source: Deutsche Bank Global Markets Research.

The Problem: Over-Leverage

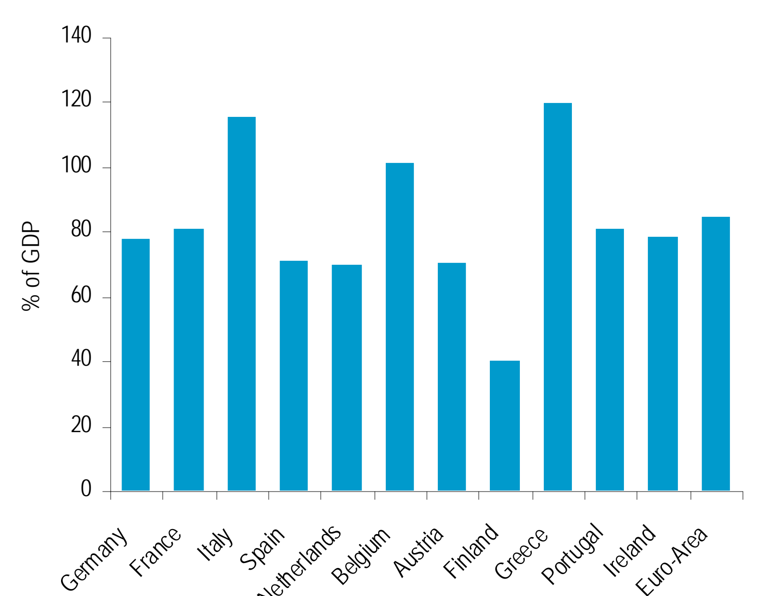
A ***"ring of fire"*** **contagion effect is spreading around a multitude of sovereign credits with debt burdens comparably high to Greece**

Euro Debt Burdens Rising

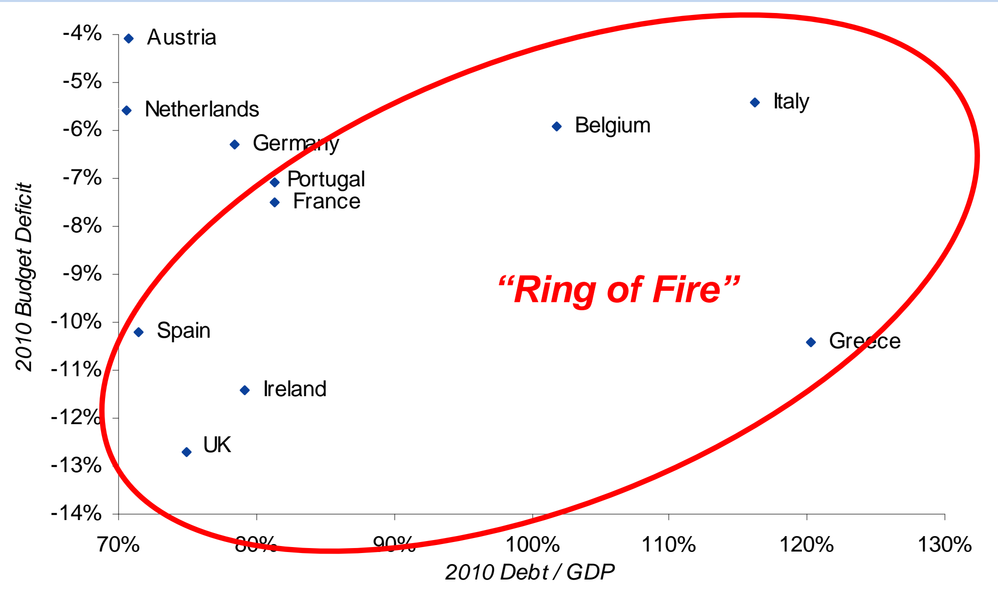
- **Greece:** a soaring national debt in excess of 120% of GDP has raised significant questions about their ability to service the debt, and has resulted in:
  - Sovereign Rating downgrades; soaring sovereign bond yields; very low investor confidence
- **Regional / Global Contagion:** Countries within the ***"ring of fire"*** will be particularly vulnerable
  - **The risks, and potential implications, of "contagion" remain very high**

The European Union is forecasting a debt-to-GDP ratio for Greece of 135.4% in 2011, the highest among all 16 EMU members

2010 Debt / GDP



2010 Budget Deficit vs. Debt / GDP



Source: Deutsche Bank forecasts. The "Ring of Fire," as quoted by Bill Gross, PIMCO.

The Problem: 2010 Debt Maturities

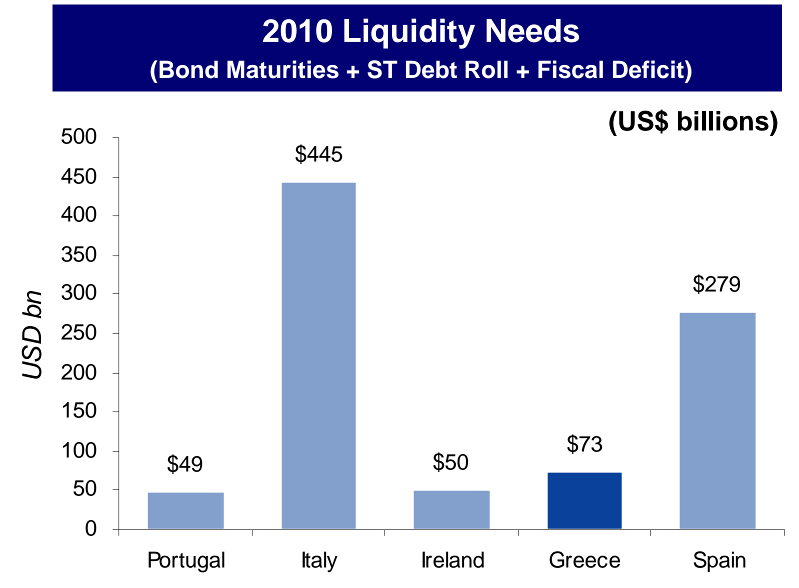
2010 liquidity needs for European sovereigns are sharply higher than in prior years…

…with Greece facing significant maturities (in excess of US$20 billion) in April and May of this year

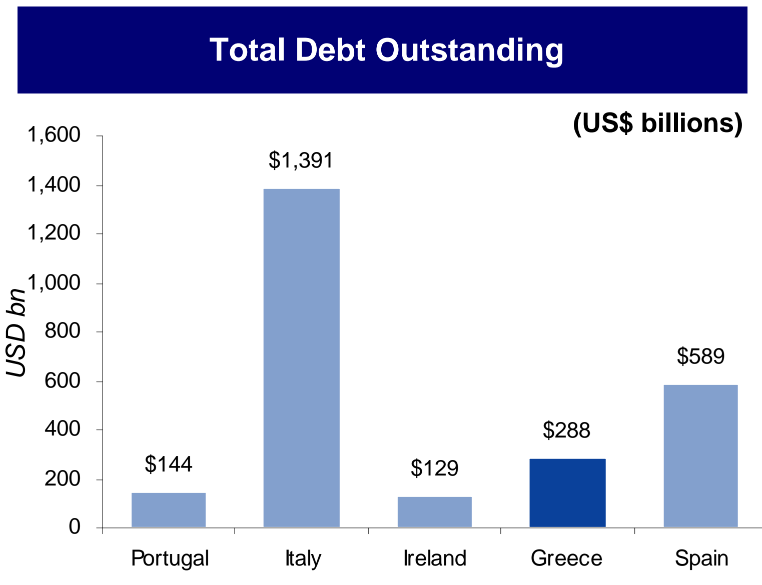
Greece's 2010 Liquidity Needs

- **Total Debt Outstanding:** Greece has nearly **US$ 300 billion** of total outstanding debt
- **Near-term Maturities:** Greece has **US$73 billion** of maturities in 2010 alone (~US$27 bn of which is due in April and May)
- **Cost of Financing:** As of February 15, investors were demanding **300 bps of extra interest** over German equivalents to own Greek bonds, down from a high of 396 points in January

2010 Liquidity Needs
(Bond Maturities + ST Debt Roll + Fiscal Deficit)



Total Debt Outstanding



Source: Fitch, Wall Street Research. US$ values based on 1.36 Euro exchange rate

The Problem: Massive Exposure for European Banks

European Banks may represent the most significant channel for "contagion" from the sovereign credit crisis underway

European banks, already heavily burdened by legacy non-performing assets in the Global Financial Crisis, are particularly vulnerable to this latest evolution of the crisis

Contagion?

- Systemic risk (**most significant risk**)
- Limited lending
- Higher funding costs
- Higher cost of capital
- Drag on GDP
- Lower revenues
- Eastern Europe
- Higher NPAs and losses

European Banks are Particularly Vulnerable

- **Broad range of *direct* exposures:** Includes both public and private securities (direct cross-border lending, local office lending, ownership of government bonds, derivative exposures, etc)
- **By Comparison, Dubai was not a big issue:** Relative to both GDP, and their exposure to the PIIGS sovereigns, direct exposure to Dubai was de minimus (see column #9 below); however, given the fragility of the global financial system, Dubai is still a very important issue
- **Germany and France have very high direct exposure:** On both an absolute, and on a relative basis; hence their leadership on this crisis
  - **Germany:** direct PIIGS exposure equal to 20 – 23% of Germany's ~ $3.6 trillion GDP
  - **France:** direct PIIGS exposure equal to 27 - 30% of France's ~$2.8 trillion of GDP
- **PIIGS have very high exposure to each other.** Financial linkages among the PIIGS sovereigns are exceptionally high. For example, Portuguese exposures are ~ 24% of GDP, and Ireland's are ~ 34% of GDP.

European Bank Exposure to the PIIGS (as % of GDP)

	Greece [1]	Ireland [2]	Italy [3]	Portugal [4]	Spain [5]	PIIGS [6]	E Europe [7]	[6] + [7] [8]	UAE [9]
Europe									
Austria	1%	2%	4%	1%	2%	10%	**54%**	**64%**	0.5%
France	3%	2%	17%	1%	7%	**30%**	6%	35%	0.4%
Germany	1%	5%	6%	1%	6%	**19%**	5%	25%	0.3%
Ireland	3%	0%	17%	2%	12%	**34%**	11%	46%	0.0%
Italy	0%	1%	0%	0%	1%	3%	8%	11%	0.0%
Netherlands	1%	4%	8%	1%	14%	**29%**	11%	40%	0.5%
Portugal	4%	8%	2%	0%	11%	**24%**	6%	30%	0.0%
Spain	0%	1%	3%	5%	0%	9%	1%	10%	0.1%
US	0%	0%	0%	0%	0%	1%	0%	2%	0.1%
Japan	0%	1%	1%	0%	1%	2%	0%	3%	0.2%
UK	0%	7%	3%	1%	5%	16%	1%	17%	1.9%
Switzerland	12%	3%	3%	1%	3%	21%	9%	30%	0.9%

Source: Blue Gold Capital Management LLP. Bank of International Settlement

Market Response: CDS Spread Differentiation

Similar to the market's reaction to the U.S. Government response to the Fannie Mae / Freddie Mac events of late 2008…

…the market is clearly testing the resolve of the European Union in responding to its current sovereign credit crisis in 2010

5 Year Sovereign CDS Levels (February 11, 2010)

	5-year CDS			Debt
	1/1/09	1/1/10	Current	outstanding
Portugal	+96	+92	+200	€93
Ireland	+181	+158	+150	€36
Italy	+157	+109	+130	€1,010
Greece	+232	+283	+350	€254
Spain	+101	+114	+135	€385
Russia ('98)	--	--	--	$73
Argentina ('01)	--	--	--	$83

Spread
5y CDS (bp)
450
400
350
300
250
200
150
100
50
0
Greece
Hungary
Egypt
Vietnam
Lebanon
Bulgaria
Kazakhstan
Portugal
Russia
Indonesia
Philippines
Turkey
SOAF
Colombia
Uruguay
Ireland
Poland
Spain
Mexico
Brazil
Panama
Italy
Peru
Israel
S. Korea
Thailand
Austria
China, Slovakia
Malaysia
UK
Belgium
Chile
France
US
Australia
Finland, GE
Ratings *(avg. of Moody's/S&P)*
Aaa
Aa2
A1
A3
Baa2
Ba1
Ba3
B2

Despite strong comments from European leaders, the market remains unwilling to give the benefit of the doubt, and seems intent on testing the resolve of the European Union (especially given the lack of detail on next steps)

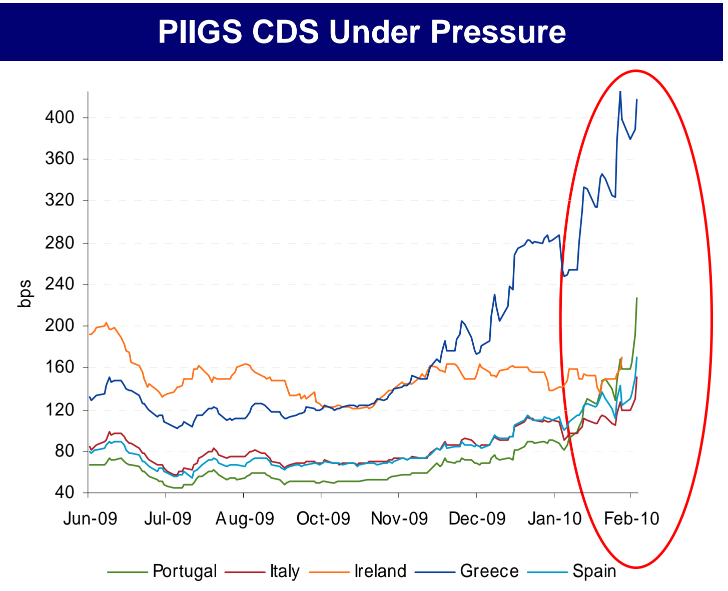
Market Response: Credit and CDS Spread Spikes

On February 11, European leaders announced that they will take "determined and coordinated action, if necessary, to safeguard the stability of the Euro area as a whole"

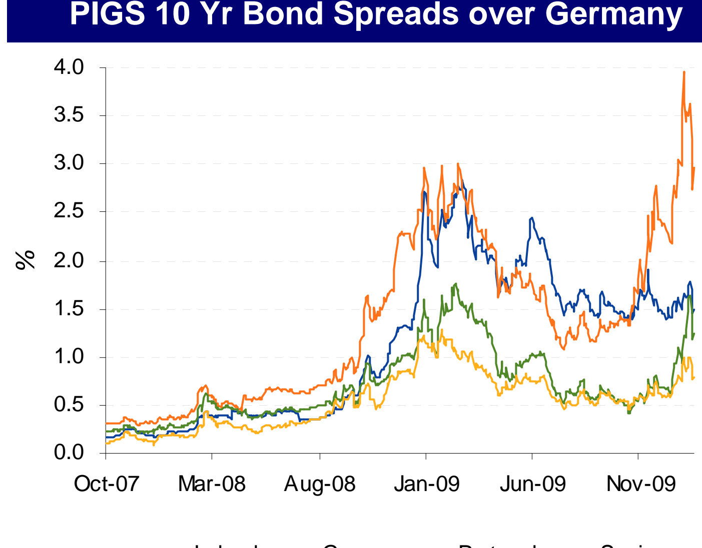
However, with little detail provided, markets do <u>not</u> appear inclined to give Greece (and Europe) the benefit of the doubt

Similar to the run-up to the U.S. Government's bailout of Fannie and Freddie in Sept '08, we expect markets to continue to push Europe until concrete actions are taken

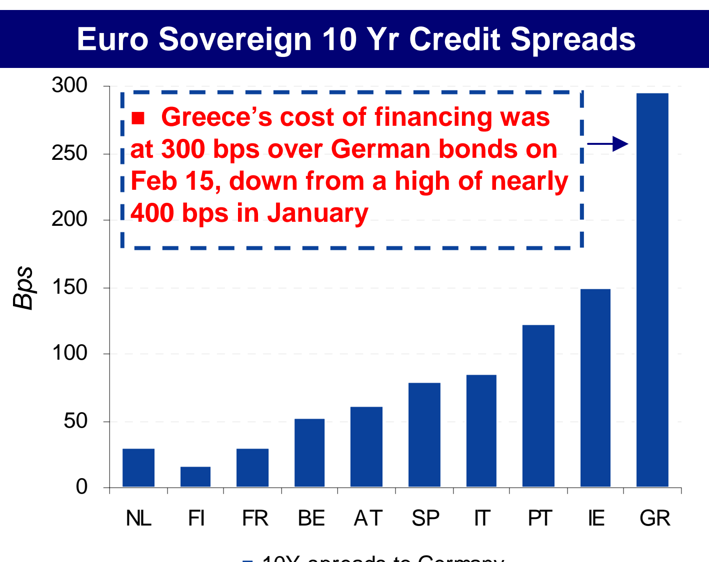
PIIGS CDS Under Pressure



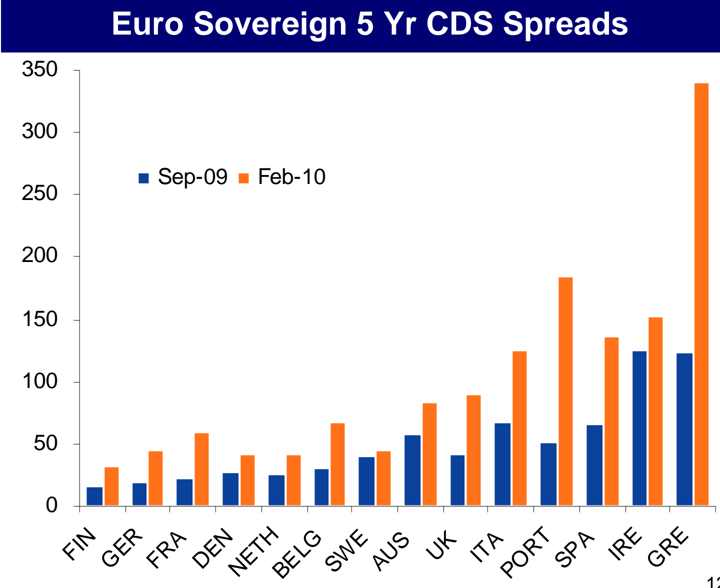
PIGS 10 Yr Bond Spreads over Germany



Euro Sovereign 10 Yr Credit Spreads



Euro Sovereign 5 Yr CDS Spreads



Source: Deutsche Bank Global Markets Research.

The Rating Agency Response

Moody's Investors Service

FitchRatings

	Moody's Investors Service		Standard & Poor's		FitchRatings	
	Rating	**Recent Action**	**Rating**	**Recent Action**	**Rating**	**Recent Action**
Portugal	Aa2 (Neg)	Negative outlook in Sep '09	A+ (Neg)	Negative outlook in Dec '09	AA (Neg)	Negative outlook in Sep '09
Ireland	Aa1 (Neg)	1 notch downgrade in Jul '09	AA (Neg)	1 notch downgrade in Jun '09	AA- (Stable)	1 notch downgrade in Nov '09
Greece	A2 (Neg)	1 notch downgrade in Dec '09	BBB+ (Neg)	1 notch downgrade in Dec '09	BBB+ (Neg)	1 notch downgrade in Dec '09
Spain	Aaa (Stable)	n/a	AA+ (Neg)	Negative outlook in Dec '09	AAA (Stable)	n/a

- **Ratings could be a loose cannon as the Sovereign Crisis unfolds, and could lead to a spiraling of both sovereign and, by market reaction, bank spreads throughout the region, and globally**

- **Further, if all 3 Rating Agencies were to rate Greece below A-/A3, Greek public debt would no longer be eligible as collateral for repo operations when and if the ECB returns to its standard collateral requirements at the end of 2010**

Source: Bloomberg

The Rating Agency Response

Moody's believes that its "New Misery Index" provides a good measure of the challenges facing many economies over the next decade

Key Themes in Moody's 2010 Sovereign Credit Outlook

- **In the 1970s, the concept of a "Misery Index" captured the negative implications of (i) inflation, and (ii) unemployment**
- **In 2010, Moody's has adapted this concept to a "New Misery Index" focused on (i) fiscal deficits, and (ii) unemployment**
  - Sharp unemployment increases lead to large fiscal deficits (government spending increases while tax revenue falls), thereby hindering economic output
  - Lower economic output then creates a feeding cycle on the above
- **Further, from a ratings perspective, Moody's believes that EMU participation protects against liquidity risk, but less against long-term insolvency risk**

Moody's Sovereign "Misery Index"

Spain
Latvia
Lithuania
Ireland
Greece
UK
Iceland
US
France
Estonia
Portugal
Hungary
Germany
Italy
Czech Republic

0 5 10 15 20 25 30

%

■ Fiscal Deficit (2010F) ■ Unemployment Rate (2010F)

Source: Moody's: Sovereign Risk: Review 2009 & Outlook 2010 (December 2009).

Potential Solutions

Section 2

A Passion to Perform.

Solutions: What Will Not Happen?

A break-up of the EMU, and a default of Greece, are almost certainly "off the table" in the near term resolution efforts of this looming crisis

A bailout led by the ECB is not permitted by EU legal provisions in the Maastricht Treaty

What Will Not Happen?

- **4 things that will almost certainly Not happen (over the near-to-medium term):**
  1) **Break-up of the European Monetary Union (and abandonment of the Euro):**
     - Very complex construction that took decades of effort to create
     - Exceptionally difficult to unwind; massive reputational issues at stake
  2) **Removal of a member from the EMU:**
     - Although patience is not unlimited, the removal of a member near-term is very unlikely
     - Contagion effect could impact other members; precedent; market response
  3) **Default of Greece:**
     - Although patience is not unlimited, Germany, France and the European Union will almost certainly not allow this to happen (at least not near term)
  4) **Bailout from the European Central Bank (ECB); prohibited by Maastricht Treaty of 1992 (see key Articles below)**
     - Central banks are the lenders of last resort to banks, not Governments

The 2009 Treaty of Lisbon provided additional flexibility for the possibility of direct financial assistance for a Member State in a bilateral arrangement with other Member States, if needed

- ***Article 125:*** Explicit "no bail-out clause" for any member states by other member states
- **Article 123:** Explicit "no bail-out clause" by ECB or national central banks for a member state (either by purchasing debt or extending loans)
- **Article 122**: Creates an exception for assistance by member states (not by the ECB) for "severe difficulties caused by natural disasters or exceptional occurrences beyond its control…"

"Because throwing (a state out) would have momentous, uncontrollable consequences… we must prevent a state from getting close to bankruptcy."

~ Eurogroup Chairman, Jean-Claude Juncker (Feb 13, 2010)

Germany and France Will Likely Drive the Solution

Germany and France at the Center of the Storm

Germany and France are monitoring the "contagion" impact of the developing crisis very closely…

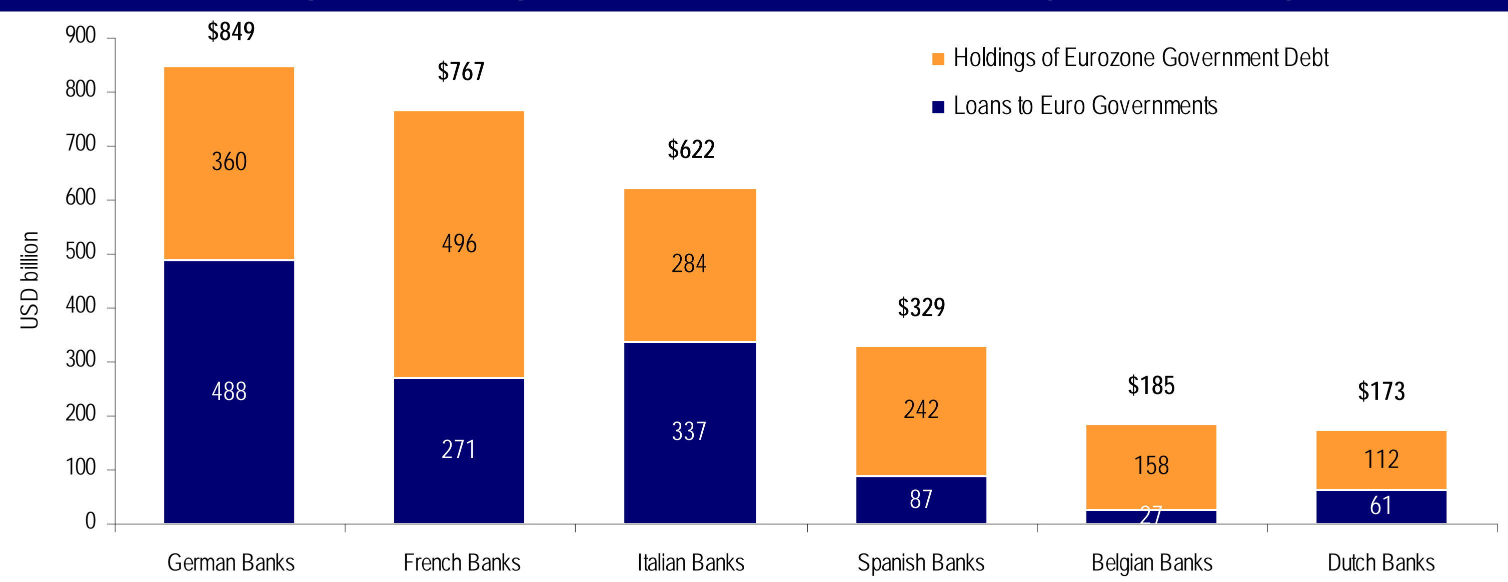
…and will be prepared to act very quickly when needed

- **To be sure, there is a small silver lining in the sovereign credit crisis for France and Germany**
  - Weak Euro driving higher exports at a time of economic weakness (especially for the German export engine)
  - Bond markets forcing highly indebted nations to respond in a way Germany or France could not force
- **However, the crisis is clearly being taken very seriously and being watched very closely**
  - Very close monitoring on "contagion" effects (be they economic, liquidity, or cost of funding)
  - Very aware that funding crises can develop exceptionally quickly and become self-feeding
- **Germany, France and the EU may be able to buy time on the liquidity crisis, but they cannot avoid the challenges raised by very high member state debt burdens, and related weak economic outlook**

Contagion?

- Systemic risk (**most significant risk**)
- Limited lending
- Higher funding costs
- Higher cost of capital
- Drag on GDP
- Lower revenues
- Eastern Europe
- Higher NPAs and losses

European Bank Exposure to Eurozone Governments (December 2009)



"Greece is in the hands of countries using the Euro."
- Gordon Brown, Prime Minister of the U.K.

Source: Autonomous, February 8, 2010. Based on Euro Exchange Rate of 1.36

Critical Step #1: Address Liquidity Problem

Key Concerns?

- Liquidity risk
- Insolvency risk
- Implementation risk
- Contagion

Each of these liquidity-based solutions only solves short-term liquidity needs…

…however, fundamental Greek fiscal restructuring and austerity measures are still critical toward addressing solvency risk

The Euro area does <u>not</u> have a robust mechanism to help a member that cannot fund itself in the public markets

Solution	Description and Considerations
EU Debt Guarantees	■ Analogous to FDIC guarantee for U.S. banks (neat and simple) ■ Would possibly violate Article 125 of EU Treaty ■ Which nation(s) would ultimately backstop in event of default? ■ Impact on cost of debt for country providing guarantee?
Create a EU Monetary Fund	■ Starting a new regional fund analogous to the IMF ■ Appears unlikely; creation would raise too many questions about the future of the EU and the monetary union
EU Bond Issuance	■ A direct loan, backed by an EU bond issuance ■ All countries contribute by size, or only large countries contribute? ■ The UK has already indicated it will not participate in EMU "bailouts" ■ Would have to be reconciled with Article 125 of EU Treaty
Bilateral Arrangement	■ Bi-lateral arrangement from Germany and/ or France ■ Raises significant moral hazard issues for the future ■ Limited domestic socio-political appetite for "bailing out" Greece ■ Impact on cost of debt for country providing direct funds?
Infrastructure "Advance"	■ Possible "advance" on disbursement of future expected EU structural and investment funds (estimated at ~ US$20 billion for Greece) ■ Possible channeling of funds through the *European Investment Bank*

Greece has approx US$73 bn of maturities in 2010, with ~ US$27 bn coming due in April and May

"If I owe you a pound, I have a problem, but if I owe you a million, the problem is yours."
~ John Maynard Keynes (English Economist, 1883 – 1946)

Critical Step #2: Address Long-Term Solvency

Key Concerns?

- Liquidity risk
- Insolvency risk
- Implementation risk
- Contagion

Necessary Greece Austerity Measures

- **Key Question: How will Greece implement the aggressive targets set forth in its 3 Year Stability and Growth Program?**
  - ANY short-term liquidity solution MUST be accompanied by strong austerity measures to address long-term solvency concerns
- **Details of Greece's 3 Year Stability and Growth Program are still underway, but will focus on 2 critical areas:**

The EU's role in Greece will be unprecedented for Europe…

- **Greek interest rate policy**: to be determined by the ECB
- **Greek currency policy**: to be determined by the EMU
- **Greek fiscal policy:** to be (effectively) determined and monitored by EU
- **Economic policy?**

***** The EU has embarked on a path of not just intensely monitoring Greek policy, but actually steering Greek policy***

#1: Potential Revenue Raising Initiatives

- **Tax reform measures** (i.e., tax evasion is a massive problem in Greece)
- **Income tax increases**
- **Taxes on large property holdings**
- **Taxes on alcohol and luxury items?**
- **VAT rate hike?**
- **Sale of state assets** (likely more than the Euro 2.5 billion projected for 2010)

#2: Potential Expenditure Reduction

- **Pension reforms** (Greece has among the most expensive among 30 OECD countries)
- **Public sector wage freezes & cuts**
- **Raising retirement and eligibility ages**
- **Broad range of budget and discretionary spending cuts**

- ***A concrete resolution regime for a EU member insolvency does not currently exist***
- ***Scenario planning underway; no current consensus; complicated legal issues***

Greece's 3 Year "Stability and Growth Program"

To be sure, Greece's 3 year Stability and Growth Program is an ambitious one…

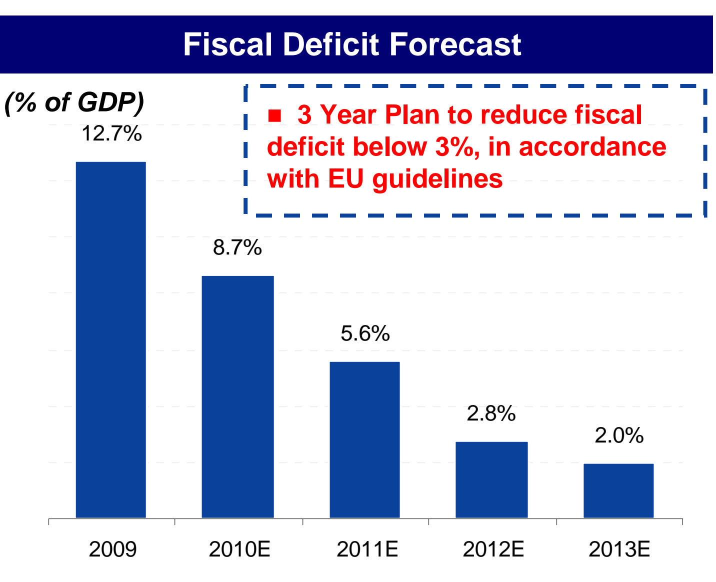
…with important details still TBD

Timeline

- **Endorsed:** by European Commission on February 3, 2010
- **Approval:** Initial approval by European Finance Ministers on February 15 - 16, 2010
- **Key Progress Report:** Detailed assessment at March 16, 2010 ECOFIN Meeting

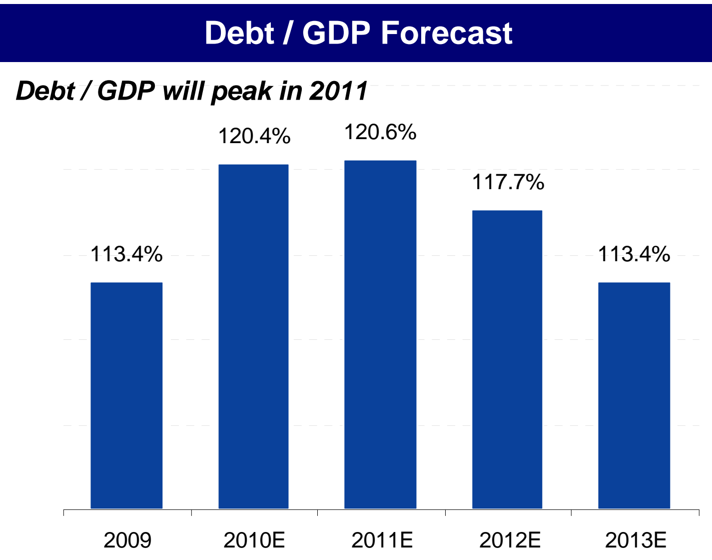
****** Eurogroup Chairman Juncker made it clear that a weak economic environment will not be accepted as a reason to miss fiscal targets***

Fiscal Deficit Forecast

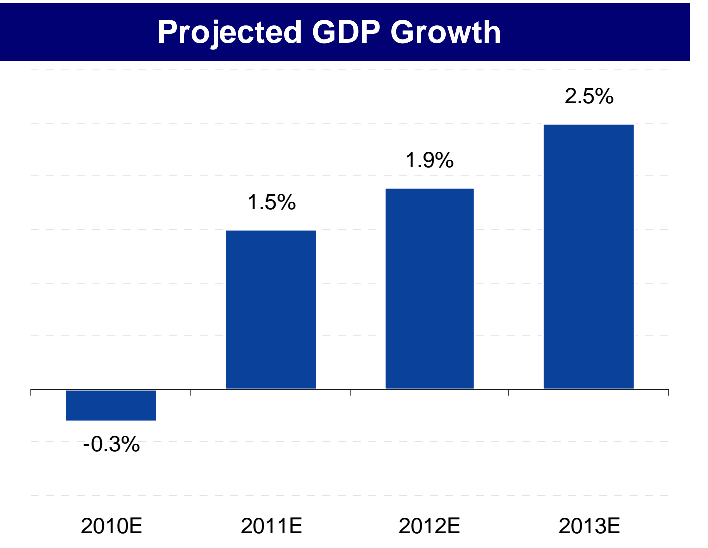


■ 3 Year Plan to reduce fiscal deficit below 3%, in accordance with EU guidelines

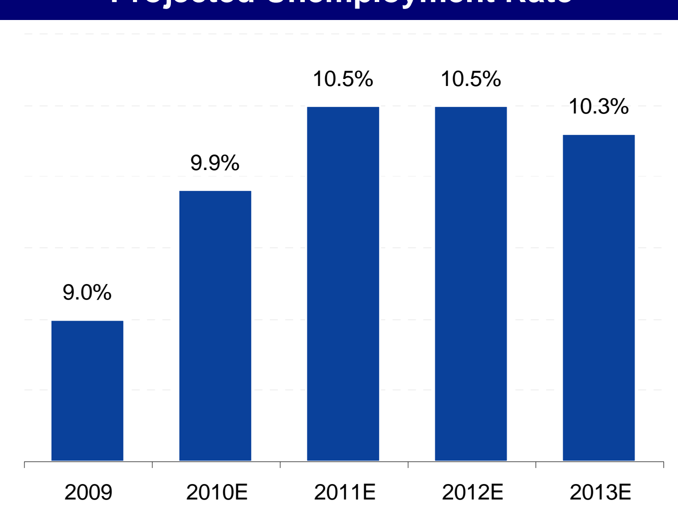
Debt / GDP Forecast



Projected GDP Growth



Projected Unemployment Rate



Source: Deutsche Bank

Who are the Key Players?

Greece

- **Prime Minister:** George Papandreou
- **Finance Minister:** George Papaconstantinou
- **Opposition Leader:** Antonis Samaras
  - *Currently endorsing Government plan*

Germany

- **Chancellor:** Angela Merkel
- **Finance Minister:** Wolfgang Schaeuble

France

- **President:** Nicolas Sarkozy
- **Finance Minister**: Christine Lagarde

European Union

- **European Central Bank President**: Jean-Claude Trichet
- **European Union President**: Herman Van Rompuy
- **(Rotating) President of EU**: Spain (Prime Minister Jose Luis Rodriguez Zapatero)
- **European Commission President:** Jose Manuel Barroso (former Prime Minister of Portugal)
- **Eurogroup Chairman (Chair of Euro-area Finance Ministers):** Jean-Claude Juncker (also Prime Minister of Luxembourg)
- **Economic & Monetary Affairs Commissioner:** Olli Rehn

IMF

- **Managing Director** (President): Dominique Strauss-Kahn

- **Historical Note**: **The origins of Greece's current credit crisis can be traced to current Prime Minister George Pandreou's late father, Andreas, who's excessive borrowing as Prime Minister in the 1980s required an emergency bailout from Brussels in 1985**

- **Political Perspective**: **IMF Managing Director, Dominique Strauss-Kahn, sought the Presidential nomination for France's Socialist Party in 2007; he is also well positioned to receive the nomination in 2012, which would make him Sarkozy's main rival in the 2012 French Presidential election**
  - **For this, and other reasons, Sarkozy may resist any significant IMF role in the current crisis, beyond oversight**

Key 2010 Dates

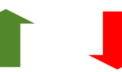
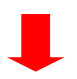
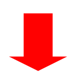
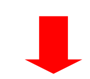
Issue	Description
February 15 - 16	■ **Feb 15:** EMU-16 area Finance Ministers, led by Eurogroup Chairman Jean-Claude Juncker (also Prime Minister of Luxembourg), meet in Brussels and review Greek plan – Portuguese Central Bank Governor, Vitor Constancio, nominated as Vice President of the ECB (gives him an edge over Germany's Central Bank chief, Axel Weber, as Trichet's successor) ■ **Feb 16:** EU-27 area Finance Ministers meet in Brussels to approve Greece's 3 year "Growth and Stability" deficit reduction plan
Late February	■ Portugal to provide its fiscal turnaround and stability plan to EU for approval
February 28	■ Deadline set by EU's statistics office, Eurostat, for more detail on swap transactions between securities firms and Greece that may have allowed Greece to mask certain national debt numbers
March 16 *(important date)*	■ **Next Greek ECOFIN meeting** (EU Finance Ministers; chaired by Eurogroup Chairman Juncker – ***Critical date for Greece to show progress on tax raising and expenditure reduction to reduce fiscal debt position***; will entail joint EC / ECB / IMF reviews – Potential EU sanctions for Greece if they do not make sufficient progress ■ **Mid March:** EU also to review stability plans of Portugal, Italy, Ireland and Spain in mid-March
April / May	■ Peak 2010 redemption period for Greek sovereign bonds (Approximately US$27 billion due)
Mid-May	■ Commencement of rolling 3 month oversight assessments of Greece fiscal turnaround (expected to continue on a quasi-permanent basis every three months)
June 26 - 27	■ Next G-20 meetings scheduled to take place in Toronto, Canada
October 2011	■ 8 year term for ECB President, Jean-Claude Trichet, expires

A number of labor strikes and public demonstrations have also been scheduled in the weeks ahead, events that will be important to monitor closely

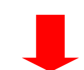
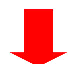
Potential Implications

Section 3

Summary of Potential Implications

Markets / Entities	Directional Impact	Potential Implications (Depending on Crisis Depth)
US$ Bond Market New Issue Conditions		■ **Strategic:** ***Pre-funding more important than ever*** (volatility creates shorter issuance windows) ■ **Spreads:** Upward pressure on new issue, risk and liquidity premiums ■ **Treasury yields**: Creates downward pressure on rates if volatility and global systemic risk rises
U.S. Economy		■ **Increases risk of double-dip**; lower overseas earnings; lower U.S. exports on stronger USD; high debt levels creates higher inflation over time; contagion effects; higher costs of capital
European Economy		■ **Significant potential drag on recovery:** Large exposures for banking system; systemic risk and contagion; reduced lending; austerity measures to reduce debt; social unrest; coordinating policy; higher taxes; lower corporate earnings; sharply higher cost of capital; repo eligibility with ECB
U.S. Banks		■ **Limited direct lending and/or derivative losses (especially vis-à-vis capital)** ■ **More indirect impact:** bank spreads very vulnerable to exogenous shocks at this time; contagion effect; higher cost of capital; increases focus on financial regulatory reform
European Banks		■ **Very significant direct bank exposures:** In excess of 20% of GDP for France, Germany and many of the PIIGS sovereigns themselves ■ **Sharply higher costs of capital** ■ **Full range of meaningful indirect impact:** already vulnerable; less lending; contagion; Eastern Europe
Central Bank Policy		■ **Generally creates downward pressure on Central Bank tightening and "exit strategies"** ■ **Will vary by region:** Little impact on **U.S. Fed** unless crisis spikes sharply; **UK** likely to extend quantitative easing; Significantly increases full range of **ECB** considerations and variables; **China** will continue to tighten as needed; **Asia (ex-China)** will likely pause on any tightening in current environment
Bank Facilities		■ **Creates downward pressure on tenor** (more focus < 3 years); would take sharp spike in crisis to bring back down to Financial Crisis peak levels of < 365 days ■ **Potential negative impact and focus on Risk Weighted Assets (and therefore capital)** ■ **Hedging via CDS becomes more expensive** (as CDS widens); creates downward pressure on size, and upward pressure on cost, of facilities

Summary of Potential Implications

Markets / Entities	Impact	Potential Implications (Depending on Crisis Depth)
Sovereign Bond Market New Issue Conditions		■ **Supply:** increases already high needs coming out of the financial crisis to fund deficits ■ **Spreads:** Sharply wider; higher costs for PIIGS to be sure; contagion impact on other regions, as well as developed European sovereigns (depending on their role in potential bail-out and contagion) – Euro / USD basis could make USD market particularly attractive for European issuance ■ **CDS:** sharply wider for single names in particular; more liquidity in Index product; additional negative premium for Euro members than U.S. and U.K. due to coordination challenges on EMU policy ■ **Delays:** Creates a heavy pause in what is otherwise expected to be a very high issuance year
Capital Flows		■ **Not very transparent at this time** (due to 3 – 6 month lags in high quality data) ■ **USD Assets:** depending on depth of crisis, strong moves into USD assets likely (equities and bonds) – **Strong overseas demand on US$ bond deals already apparent** ■ **Repatriation strategies**: increased focus, especially for investors
Foreign Exchange		■ **USD:** potential continued rally depending on depth of crisis and volatility ■ **Euro:** Increases downward pressure (currently on 9 month decline versus USD) ■ **Euro as Reserve Currency:** could slip on a trend basis (with potential benefit to USD, CAD, JPY and gold); Euro sovereigns will clearly be viewed as 16 separate markets with distinct credit risk and liquidity profiles
Commodities		■ **Price:** If crisis escalates, economic drag and USD rally will create downward pressure on virtually all commodity asset classes, especially oil. ■ **Gold:** Potentially positive benefit depending on depth of crisis and flight to quality; still unclear
Financial Regulatory Reform		■ **Heightens focus on financial regulatory reform** (both negatively and positively) ■ **Increases focus on derivatives** (particularly on bank margin requirements for counterparty exposures, and tighter regulation of certain products) ■ **Sharply higher focus on systemic risk** (more need for international coordination, systemic regulator, Too Big to Fail, multi-jurisdictional focus, capital flows, leverage limits)

The impact on all of the above markets will ultimately depend on the depth of the crisis, the effectiveness of the response, and the level of volatility and risk aversion that follows

Implications for US$ Bond Issuance

The sovereign credit crisis has only magnified one of the key lessons of the Global Financial Crisis, that is, the importance of pre-funding

Review of Potential Implications for US$ Investment Grade Debt Issuance

Strategy

- **Strategy:** ***Significantly heightens the importance of pre-funding redemption and capital expenditure obligations***
  - As evident in the financial crisis, Issuers can no longer rely on "just-in-time financing"
  - Increased volatility increases the risk of "windows of opportunity" opening and closing with little notice

Financing Costs

- **Credit Spreads**: potentially wider as a result of several factors including negative economic implications, higher risk, potentially higher new issue premiums, less liquidity as broker-dealers push back risk
- **Bank Spreads**: particularly vulnerable given recent Financial Crisis and contagion exposure
- **New Issue Premiums**: more upward pressure (more risk; less secondary market liquidity)
- **US Treasury Yields:** creates downward pressure near-term as and if volatility rises sharply; longer-term, high debt levels in the U.S. more likely to create upward pressure
- **Liquidity:** more downward pressure, especially as and if broker-dealers pull-back on risk; creates upward pressure on spreads

Overseas Demand

- **Overseas Demand:** potentially much higher as US$ assets become more attractive; global capital flows toward US$
  - ***For example, we have seen overseas demand on several recent non-financial corporate bond financings in excess of 20% of total issuance size (for BBB type names), which historically may have been closer to 5-10% area***

Issuer Origin Focus

- **Differentiation and Focus on Country of Origin**: more pressure on bank, utility and telecom spreads from Europe that have frequently tapped US$ markets in the past

Source: Bloomberg

Implications for Foreign Exchange

The ultimate impact on Eur/USD, and related capital flows, will ultimately depend on the depth and volatility of the crisis…

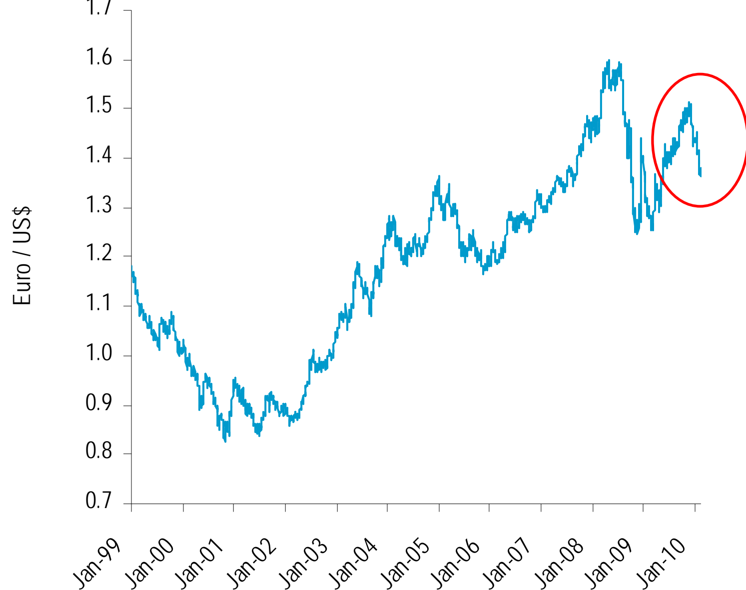
…but the impact could be significant

DB 2010 Eur/ USD Forecast: 1.35

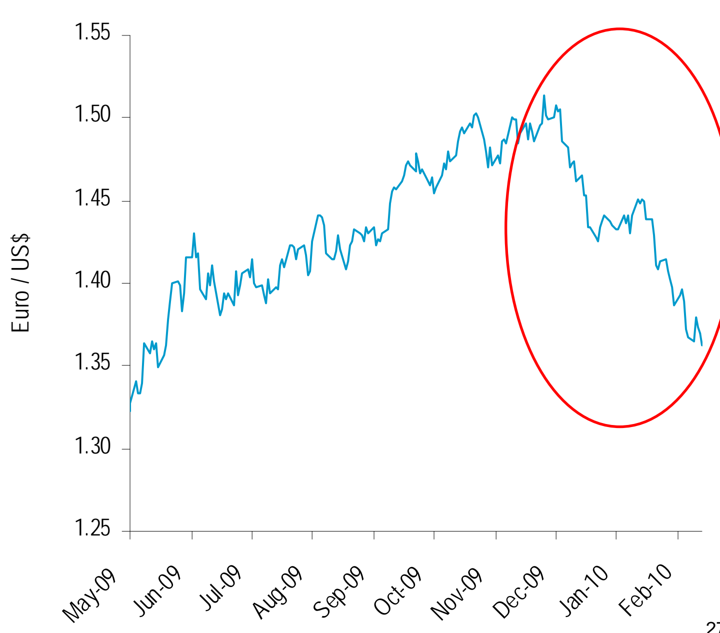
Euro Declines to 9 Month Low

- **Euro:** More downward pressure (pre-sovereign crisis, DB view that Euro is already over-valued on fundamentals and so has room to fall)
- **Euro as Reserve Currency**: Could slip on a trend basis with potential benefit to USD, JPY, CAD and Gold
  - Euro Government bond market as rival to U.S. Government bond market is still someway off
  - Euro sovereigns are clearly still 16 separate markets with their own distinct credit risk and liquidity profiles
- **USD**: strong upward pressure to rally vis-à-vis Euro, though will depend on depth and volatility of the sovereign credit crisis; strong move expected into USD assets (equities and bonds)

Euro / US$ Spot (1999 - Present)



Euro / US$ Spot (May, 2009 – Feb 2010)



Source: Bloomberg

Deutsche Bank

Implications for Commodities

A stronger USD reinforces downward pressure on nearly all commodities, especially oil…

…Gold may be the exception to the extent volatility spikes sharply if the sovereign crisis escalates

Implications for Commodities of the Sovereign Credit Crisis

- **Impact of Stronger USD:** extent of USD rally will be linked to depth of crisis and is likely to reinforce downward pressure on nearly all commodity asset classes, especially oil
- **Impact of Economic Weakness:** will depend on depth of crisis and potential contagion effects; weaker industrial capacity will negatively impact commodity pricing
  - Impact may be exacerbated by an already vulnerable financial system and global economic recovery outlook
  - In addition, could reinforce 2009 downward pressure on refining margins, negatively impacting profitability, and potentially increasing prospect of sales and/ or shutdowns
- **Flight to Quality (Risk-aversion):** to the extent the crisis spikes sharply, Gold prices would be the exception to the generally downward pressure on commodity prices

DB 2010 Gold (oz) Forecast: $1,150

DB 2010 Oil (bbl) Forecast: $65

Gold (Feb 2009 - Feb 2010)

Oil (Feb 2009 – Feb 2010)

Source: Bloomberg

Implications for U.S. Banks

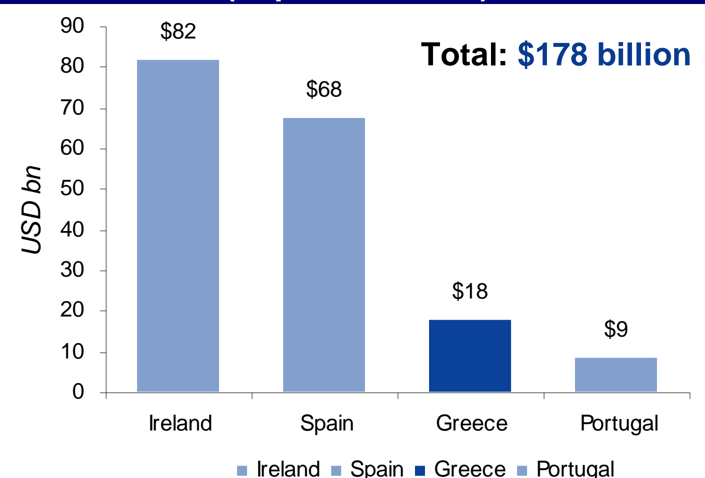
Direct exposure of the U.S. banking system to over-indebted European sovereign credits is reasonably limited…

…but the indirect impact of "contagion" effects on a vulnerable global financial system could be substantive

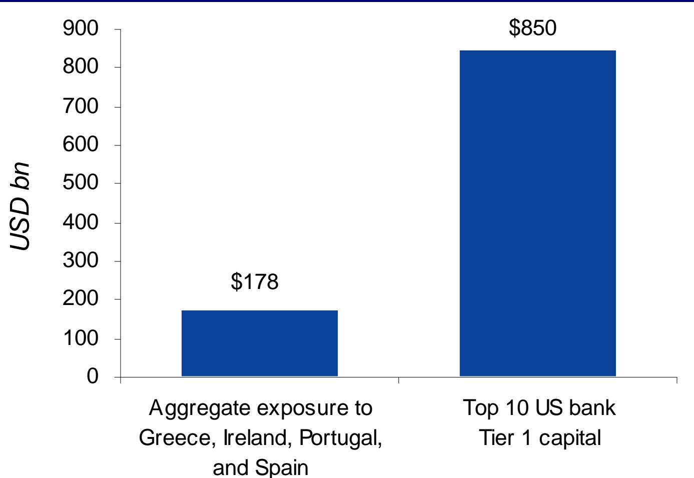
Implications for U.S. Banks

- **Direct Losses from Lending / Derivatives:** limited, especially compared to European banks
  - The U.S. banking system relies very little on overseas earnings (< 20%)
  - Tier 1 capital is well in excess of direct exposures
- **However, indirect impact of an escalating crisis could be significant**:
  - ***Bank spreads are particularly vulnerable to exogenous shocks in the global financial system***
  - Negative impact on lending and bank facilities
  - Contagion through increased systemic risk
  - Heightens focus on financial regulation (with upward pressure on capital, and downward pressure on earnings)

Claims on Sovereigns Held by U.S. Banks [1] (September 2009)



Aggregate U.S. Bank Exposure vs. Top 10 U.S. Bank Capital



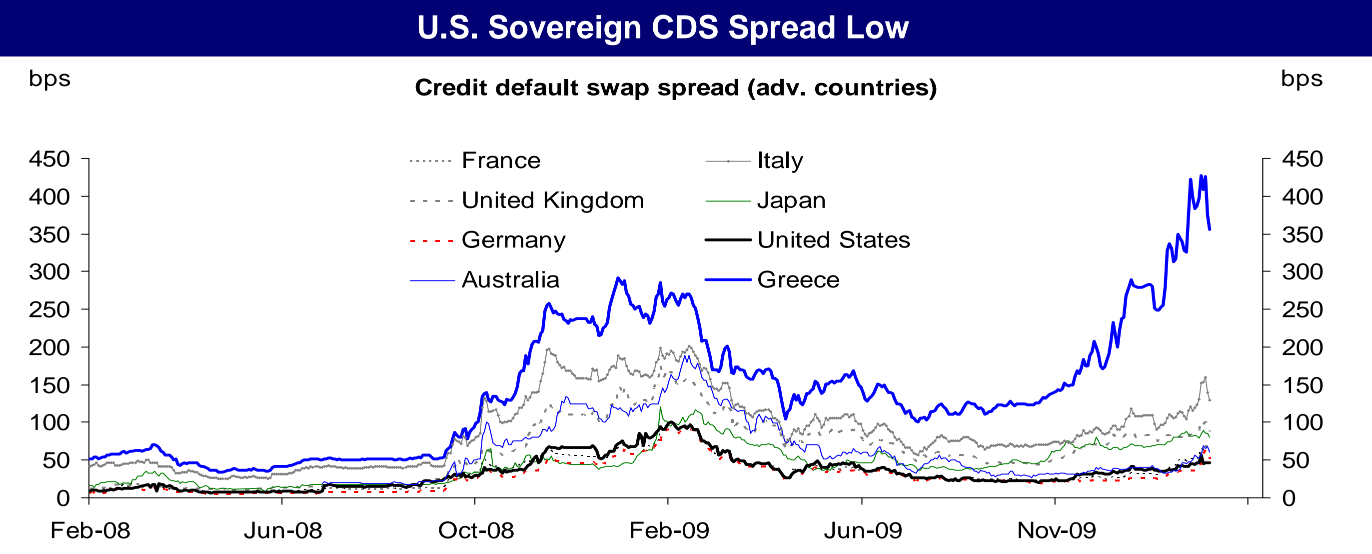
Source: Federal Financial Institutions Examination Council.

(1) Claims consist of cross-border loans, claims from derivatives, and foreign office claims on local residents

Implications for the U.S. Economy

Despite very high debt levels, U.S. sovereign CDS spreads and bond rates have remained low in this early stage of the crisis

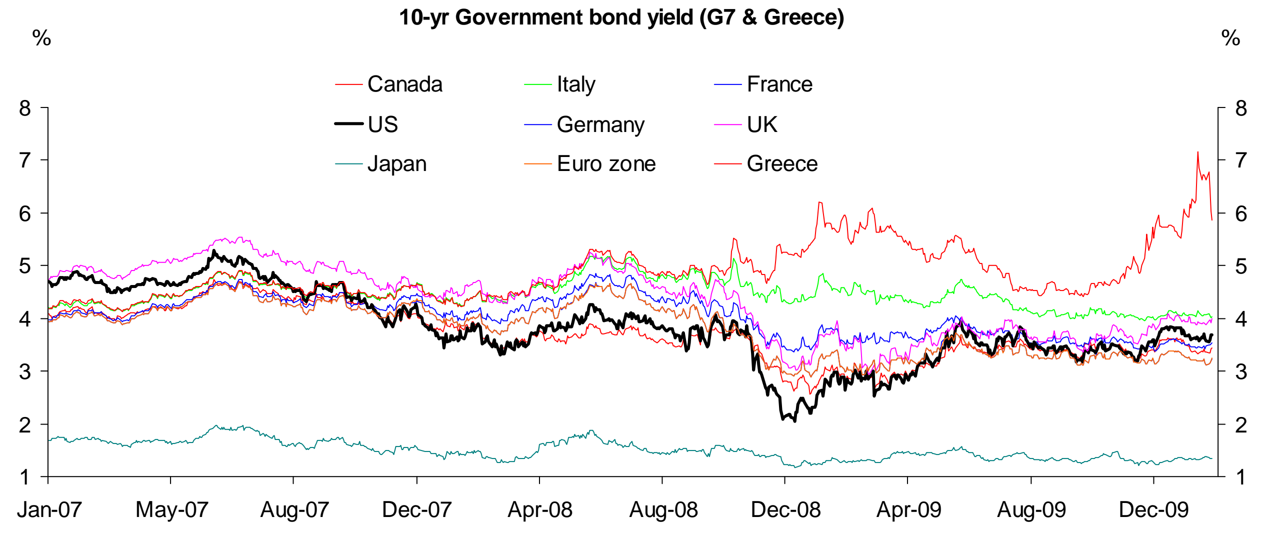
U.S. Sovereign CDS Spread Low



Downside Concerns

- Double-dip recession?
- Impact of stronger US$ on U.S. exports
- High debt levels result in higher inflation longer term
- Contagion impact through banking system
- Impact of dampened European economic growth
- Overseas corporate earnings
- Impact on Fed policy?

U.S. Government Bond Rates Also Very Low

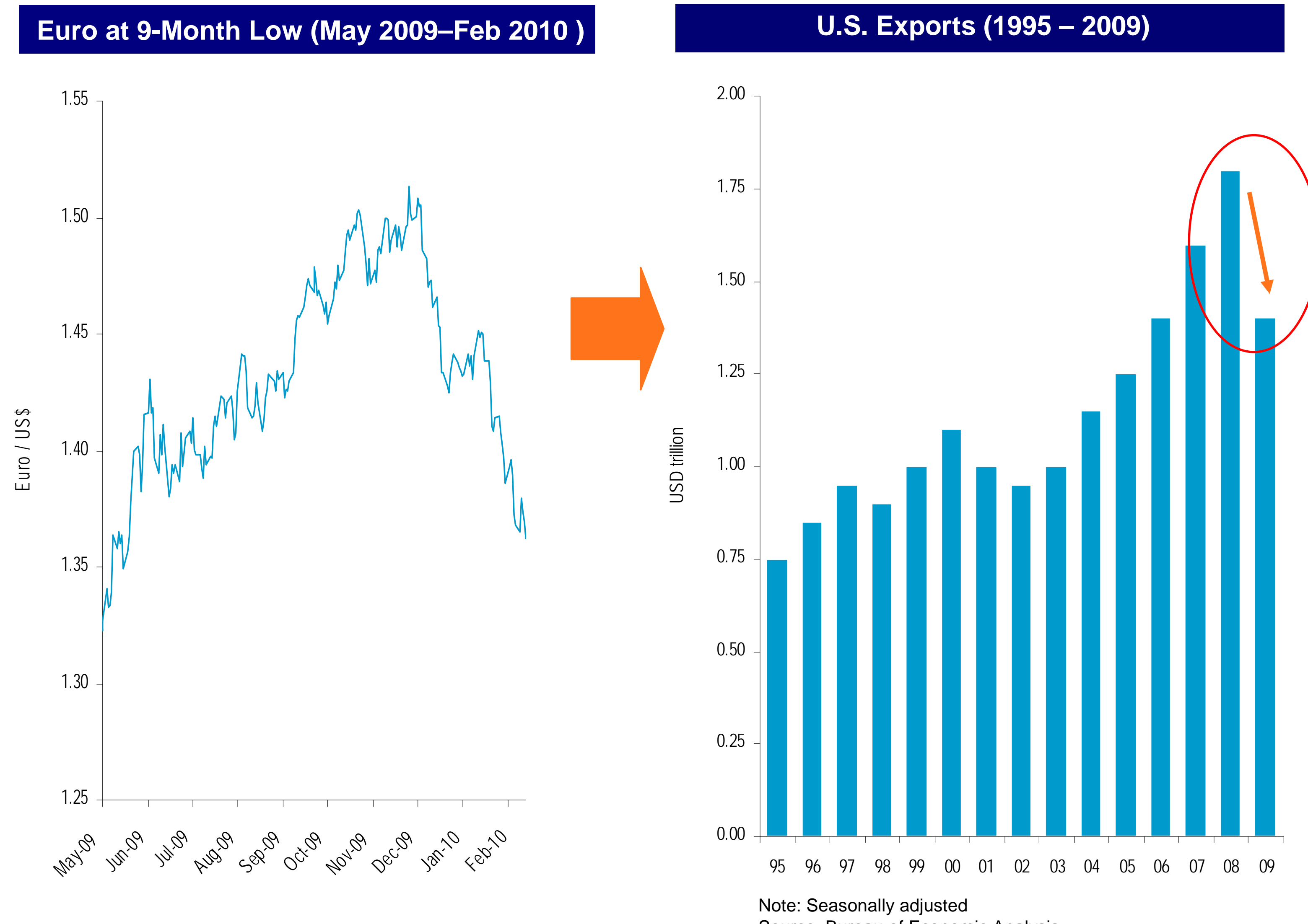


Source: Bloomberg, DB Global Markets Research

Deutsche Bank

Implications for the U.S. Economy

A substantive sovereign credit crisis will reduce demand for U.S. exports, both in terms of weaker European end-markets, and a stronger USD



Note: Seasonally adjusted
Source: Bureau of Economic Analysis

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For more information contact Tom Joyce (212-250-8754)