The European Debt Crisis and Its Implications for the United States

Christopher J. Neely
Assistant Vice President
Federal Reserve Bank of St. Louis

The University of Missouri–St. Louis,
St. Louis, MO

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Disclaimer

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Really.

I thank Brett Fawley for excellent assistance in putting this presentation together.
The Agenda

- Why borrow?
- Budget constraints
- The problem in Europe?
  - PIIGS’ problems
- The crisis in the data?
- Four options
- Origins?
- Countermeasures?
- The financial crisis and the fiscal crisis?
- Implications for the United States
Why do governments borrow?

- Wars
- Investment
- To live it up
The Government budget constraint

In the absence of default, the present value of total expenditures (forever) cannot exceed the present value of taxes (forever).

- A government doesn’t have to balance its budget every year; neither does your family.
- Governments live approximately forever. (Or something close.)
The Government budget constraint

- Defaults are very common.
  - See Reinhart and Rogoff: “This Time Is Different.”
  - Explicit vs. implicit (inflation) defaults.

- Debt crises are a type of asset bubble.
  - High prices; too much debt is issued.
  - Asset bubbles are associated with innovation or exploration.

**How large of a deficit/debt can a country run?**
  - Deficits approaching 100% of GDP become a big problem.
What is the problem in Europe?

- Too many types of cheese? No.
What is the problem in Europe?

Big budget problems in euro land

- “Peripheral countries”: Some commonality; some differences.
- Portugal, Italy, Ireland, Greece, Spain, (and) Belgium (PIIGS)
- Euro-area entry usually played a role in facilitating overconsumption, borrowing, and deficits.
  - An innovation!
- Financial crisis/recession triggered budget problems. Didn’t cause them.
What is the problem in Europe?


Percent of GDP

Belgium  Germany  Greece  Ireland  Italy  Portugal  Spain
Portugal: High debt load and low growth

- Large fiscal deficit (6% of GDP) even prior to the financial crisis.
- Euro entry in 2001 => financial integration, optimism, lower borrowing costs and consumption boom.
- Slow growth, rising unemployment
  - Higher unemployment, rising wage/productivity, huge current account deficit (10% of GDP).
  - Rising wages => lack of competitiveness. No exchange rate to adjust.
- No monetary policy to make adjustments.
Ireland: Banking recapitalization (20% of GDP)

- Ireland has grown very fast since 1980.
- Ireland had a very large banking sector that suffered serious losses in the subprime crisis.
- The Irish government guaranteed the banks’ liabilities. (Why?)
Italy: High public debt and slow growth

- Italy’s public debt (118% of GDP) is the second highest in EMU.
- No boom-bust in Italy, just slow growth.
  - Maximum potential growth is about 1%.
- Low productivity/wage growth.
- Highly regulated economy; low competition.
Greece: Bloated public sector, tax evasion

- Public pensions
  - Early retirement: 55 for men, 50 for women for “arduous” work like hairdressers & musicians.

- Huge inefficiency in government
  - Railroads and schools

- Widespread tax evasion
  - Tax collectors are pulled in election years.

- Terrible/dishonest government accounting.

- Goldman Sachs helped the Greek govt securitize future income.
Greece: Bloated public sector, tax evasion

- Debt problem unearthed by a change of government precipitated by a real estate scandal involving a monastery in October 2009.
  - Led to a huge revision in estimated fiscal deficits.
  - See an excellent article by Michael Lewis in the October 2010 Vanity Fair.

- Greece has already effectively defaulted by negotiating large reductions in bond payments.

- Will Greece default again?
Spain: Housing bubble

- Spain is the fourth-largest economy in the euro-zone and about 10% of the bloc’s economic activity.
- Spain has had a big housing bubble.
- High internal demand; large current account deficit (10% of GDP).
- Banking recapitalizations have cost the Spanish government 1% of GDP.
- Spain’s 10-year bond yields are about 4 percentage points higher than Germany’s.
Belgium: High public debt and slow growth

- Belgium has also developed a fiscal problem.
- In December 2010, the IMF said Belgium needed to control spending as its debt grew to over 100% of GDP.
- The 10-year yield spread has grown to more than 150 basis points over German bonds, which could result in a funding squeeze. (April 25, 2012)
How do we see the crisis in the data?

- 2011 deficits versus gross debt
- Bond yields
- CDS rates (insurance premia for government bonds)
- How big is the relative burden of the PIIGS on Germany?
2011 deficits v. gross debt (net debt)
The effect of deficits/debts on bond yields?

These countries all borrow in euros. Same FX risk.

Note two-scale
What are CDS rates?

- **CDS**: Credit default swap.
- **CDSs** function much like insurance for bonds.
  - The buyer pays an annual premium in exchange for the seller’s agreement to buy the bond at face value (par) if the bond issuer defaults.
- One can use CDS rates to derive “risk-neutral” probabilities of default.
  - What are “risk-neutral” probabilities?
The effect of deficits/debts on CDS rates?

CDS Spreads (bps)

Portugal
Italy
Ireland
Greece (Left Axis)
Spain
Germany

Note two-scale
How big are the PIIGS debts?

2011 PIIGS Gross Government Debt

- % National GDP
- % German GDP

Portugal | Ireland | Italy | Greece | Spain
What are the PIIGS’s options?

1. Grow out of the debt as the U.S. did after WWII.
   - Fundamentals don’t look good for growth.
2. Inflate the debt away.
   - ECB won’t cooperate.
3. Outright default
   - Will probably require a “trigger?”
   - Consequences for future debts?
4. Muddle through; hope for good luck.
   - Fairly tight budgets; ECB indirect lending at low rates; 30 years of good luck.
1. Growth prospects

- How do countries grow?
  - More people, more capital and/or better technology.

- Demographics:
  - Low birthrates.
  - Scope for higher labor force participation/hours. (Lower taxes?)

- Capital accumulation?
  - Workers already have plenty of capital.

- Technological improvement
  - Europe is already on the technological edge. Its technology can’t improve faster than the world’s.
1. Growth prospects

Average Annualized GDP Growth (%)
1995-2012

[Bar chart showing the average annualized GDP growth for various countries from 1995 to 2012. The chart compares the performance of Portugal, Italy, Ireland, Greece, Spain, Austria, Belgium, Denmark, Finland, France, Germany, Netherlands, Slovak Republic, Slovenia, Sweden, and United Kingdom against the United States.]
2. Inflate the debt away?

- Countries that issue debt in their own currency never have to explicitly default; they simply print currency to pay off bonds.
  - This leads to rapid inflation, soaring interest rates and is a bad idea.
  - Soon, one cannot roll over one’s debt.

- Euro-area countries do not have this option, as no individual country controls the ECB.

- But let’s consider the implications of inflating away the debt.
2. Inflated the debt away?

- Unexpected inflation reduces the real value of nominal bonds.
- It’s harder to reduce the value of short-term bonds and/or real bonds (TIPS).
- Inflating debt away is hard and would produce much economic chaos.
- Unexpected inflation greatly reduces the usefulness of money.
- An outright default is preferable in my opinion.
3. Outright default

- Sovereign default usually leads to negotiated debt restructuring.
- A huge tax on government bondholders.
- Terrible consequences for the financial system as financial firms go bankrupt.
- Perhaps great difficulty in borrowing in the future.
4. Muddle through

- Create a “firewall” between Greece and the rest of the EMU.
- Exercise some fiscal discipline.
- The ECB lends to banks that buy and hold government debt over long periods.
  - Long-term refinancing operations
- Create some vehicle to hold low yield, short-term debt over long periods?
- Hope for 30 years of good luck.
How did the Euro fiscal crisis arise?

Structural problems

- Large public sectors, generous pension plans, low tax efficiency, high wage growth, slow growth

The introduction of the euro and financial integration facilitated consumption and government borrowing.

- Euphoria and disappointment
- The euro removed an adjustment tool. Europe is not an optimal currency area.

The financial crisis of 2007-2008 triggered the fiscal crises.
France & Germany break the stability pact

- Budget deficit < 3% of GDP
- Debt < 60% of GDP or approaching that value.

Fiscal rectitude.

Fiscal cheating!
What has Europe done to ease the crisis?

- May 2, 2010: €110 billion bailout plan for Greece from Eurozone & IMF
- May 9, 2010: Create the European Financial Stability Facility (EFSF) with €750 billion in assets.
  - EFSF has authority to buy bonds or lend national governments money to do so.
  - Enlarged to €780 billion on July 21, 2010.
- November 28, 2010: €85 billion bailout plan for Ireland from Eurozone & IMF
What has Europe done to ease the crisis?

- February 21, 2012: Greece and its creditors agree to a debt restructuring, reducing the face value of the debt by 53.5%.
  - The International Swaps and Derivatives Association rules that this Greek debt restructuring is not a default event.
- March 9, 2012: Greece and its creditors agree to a €200 billion restructuring.
  - The ISDA rules that this is a default event; CDSs pay off.
- March 30, 2012: European leaders add a lower-than-expected €500 billion to the current “firewall” of €300 billion.
What has Europe done to ease the crisis?

- ECB has been acting as a lender of last resort through it’s Securities Markets Programme (SMP) purchases of periphery sovereign debt and LTROs.
- Regulators have essentially forced European banks to buy sovereign debt. (Buiter and Rahbari (2012)).
- August 2, 2012: ECB President Mario Draghi announced options for supporting sovereign debt.
  - The European Stability Mechanism (ESM) buys bonds in the primary market
  - The ECB buys “unlimited” amounts of bonds on the secondary market.
- September 6, 2012: ECB clarifies how it will purchase bonds. (OMT)
How did a financial crisis trigger a fiscal crisis?

“When the tide goes out, the dead fish stay behind…” (?)

The financial crisis triggered the fiscal crisis through

- Direct effects on taxes and expenditures.
- Indirect effects through shaken confidence in institutions.

Multiple equilibria models

- The financial crisis shook expectations.
- Expectations determine the actual result. E.g., Bank runs
What are the implications for the United States?

- An actual (disorderly) European default would
  - be a huge problem for the euro area.
  - create big problems for the United States through the international financial system.
  - “Orderly” is a hard thing to define.

- Some sort of restructuring (a default) seems to be very likely for some of the countries.
What are the implications for the United States?

- Costs:
  - Information cascades: Doubts about the PIIGS sow doubts about other sovereign debt, including that of the United States.
  - Direct financial losses: U.S. banks have $640 billion in PIIGS’s assets.
  - Financial turmoil with unpredictable results.
  - Export reductions in case of a Euro recession.
What are the implications for the United States?

Benefits:

- Doubts about European debt hold down Treasury yields and buoy the USD.
  - A strong dollar is a two-edged sword.
- Changes in CDS rates for the PIIGS are negatively correlated with changes in U.S. Treasury yields.

So far: European problems have probably temporarily benefited the United States.

- This is not a promise for the future… at all.
2010-2011 Co-movement: U.S. 10-year yields v. PIIGS CDS spreads

Correlation of 2-Day Log Changes

Correlation does not necessarily imply causation, of course.
U.S. advantage

- Difficult for international bond buyers to find enough good substitutes for U.S. government debt.
  - The Chinese have few options: the euro, the yen, the pound.
  - The “Officer and a Gentleman” scenario: “I’ve got nowhere else to go.”
The Bottom line

Entry to the euro system helped create the fiscal crisis.

- Lower borrowing costs, easier financial integration led to higher consumption and fiscal ease.

Europe and the United States face difficult fiscal situations.

- The financial crisis has strongly affected current budget balances.
- The long run is actually a more serious problem.
  - Europe: Slow growth, large public sectors, pensions.
  - United States: Medicare growth, social security.

Some sort of restructuring (a default) seems to be likely for some of the countries.
The End
Extra slides to follow
Timeline: August 2012

Some international data comparisons

- Current deficits
- Deficits versus Gross Debt
- Deficits versus Net Debt
- Bond yields
- CDS rates (insurance premia for government bonds)
2010 deficits/GDP

PIIGS
- Portugal
- Italy
- Ireland
- Greece
- Spain

Other euro area
- Austria
- Belgium
- Denmark
- Finland
- France
- Germany
- Netherlands
- Slovak Republic
- Slovenia
- Sweden
- United Kingdom

Non-euro area
- Canada
- Japan
- United States

% of GDP

-5
-10
-15
-20
-25
-30
-35
-40
-45
2011 deficits/GDP

PIIGS
- Portugal
- Italy
- Ireland
- Greece
- Spain

Other euro area
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- Belgium
- Denmark
- Finland
- France
- Germany
- Netherlands
- Slovak Republic
- Slovenia
- Sweden

Non-euro area
- Canada
- Japan
- United States
2011 deficits v. gross debt

Gross Debt (% of GDP)
2011 deficits v. net debt (back to gross debt)
What effect have these deficits/debts had on bond yields?

These countries all borrow in euros. Same FX risk.

10 YR Bond Yields (%)

- Portugal
- Italy
- Ireland
- Greece (Left Axis)
- Spain
- Germany

Lehman Brothers/financial crisis

TARP

PIIGS (ex. Greece) and Germany

2005 2006 2007 2008 2009 2010 2011 2012
What effect have these deficits/debts had on bond yields?

10 YR Bond Yields (%)

Lehman Brothers/financial crisis
TARP

- United States
- Canada
- Japan

2005 2006 2007 2008 2009 2010 2011 2012
What are CDS Rates?

- CDS: Credit default swap.
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What effect have these deficits/debts had on CDS rates?

CDS Spreads (bps)

- Portugal
- Italy
- Ireland
- Greece (Left Axis)
- Spain
- Germany

Greece

2007 2008 2009 2010 2011 2012

PIIGS (ex. Greece) and Germany
What effect have these deficits/debts had on CDS rates?

![Chart showing CDS Spreads for United States and Japan from 2007 to 2012.](chart.png)
What are the implications for the United States?

Costs: Information cascades: Doubts about the PIIGS sow doubts about other countries, including the United States.

Benefits: Doubt about European debt holds down Treasury yields and buoys the USD.

So far: European problems have probably temporarily benefited the United States.
What are the implications for the United States?
What are the implications for the United States?

- CDS rates for the PIIGS are negatively correlated with decreases in US Treasury yields.
- Doubts about the PIIGS hold down Treasuries.
What are the implications for the United States?
United States debt time series (back to options)
How high can debts get? (back)
Growth in the control countries?

Average Annualized GDP Growth (%)
1995-2012

Canada: 2.5%
Japan: 1.0%
United States: 2.0%