

The Financial Crisis of 2007-2011?

Gerald P. Dwyer

Federal Reserve Bank of Atlanta

University of Carlos III, Madrid

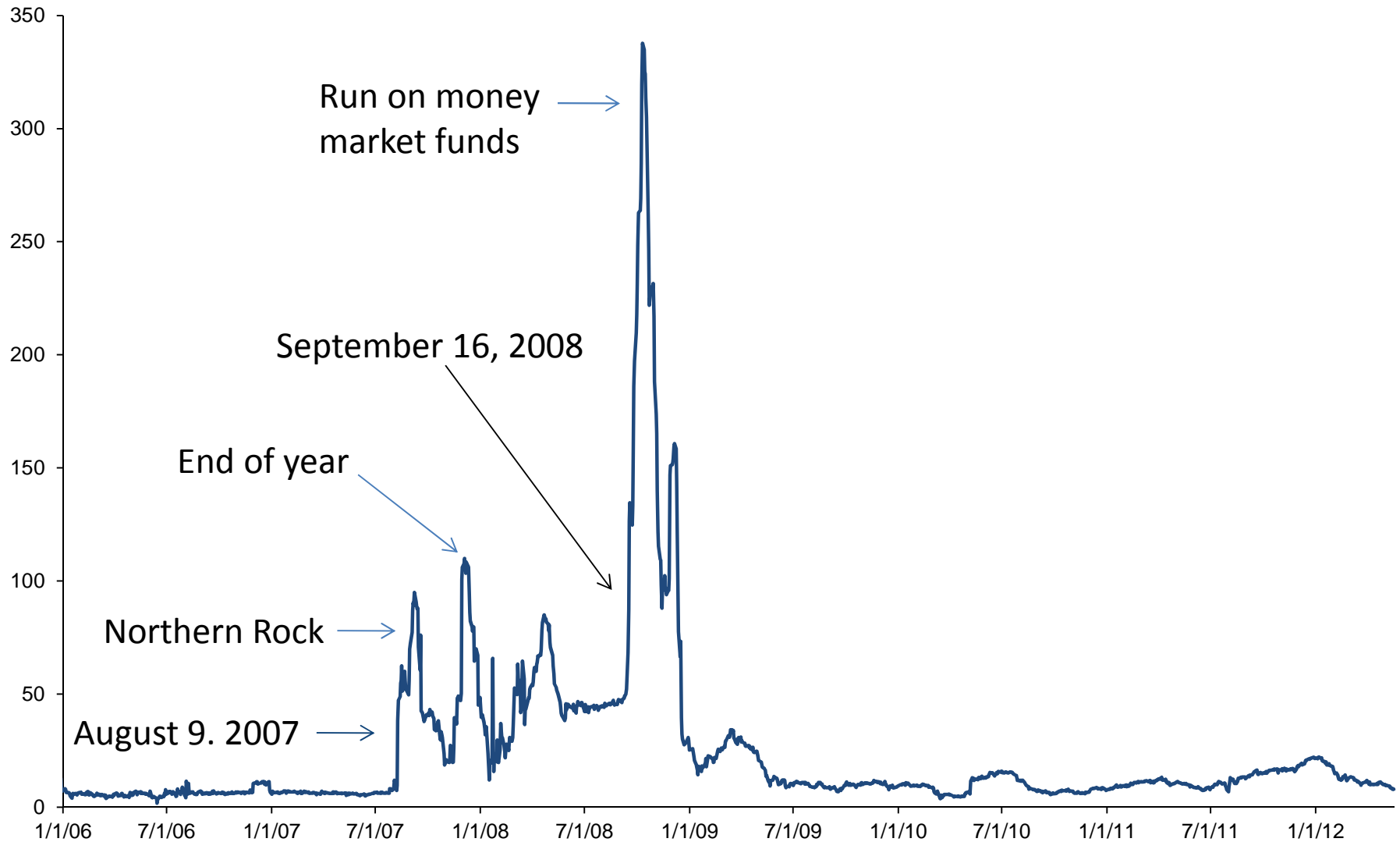
Disclaimer

- These views are mine and not necessarily those of the Federal Reserve Bank of Atlanta or the Federal Reserve System.

How To Interpret Recent Events?

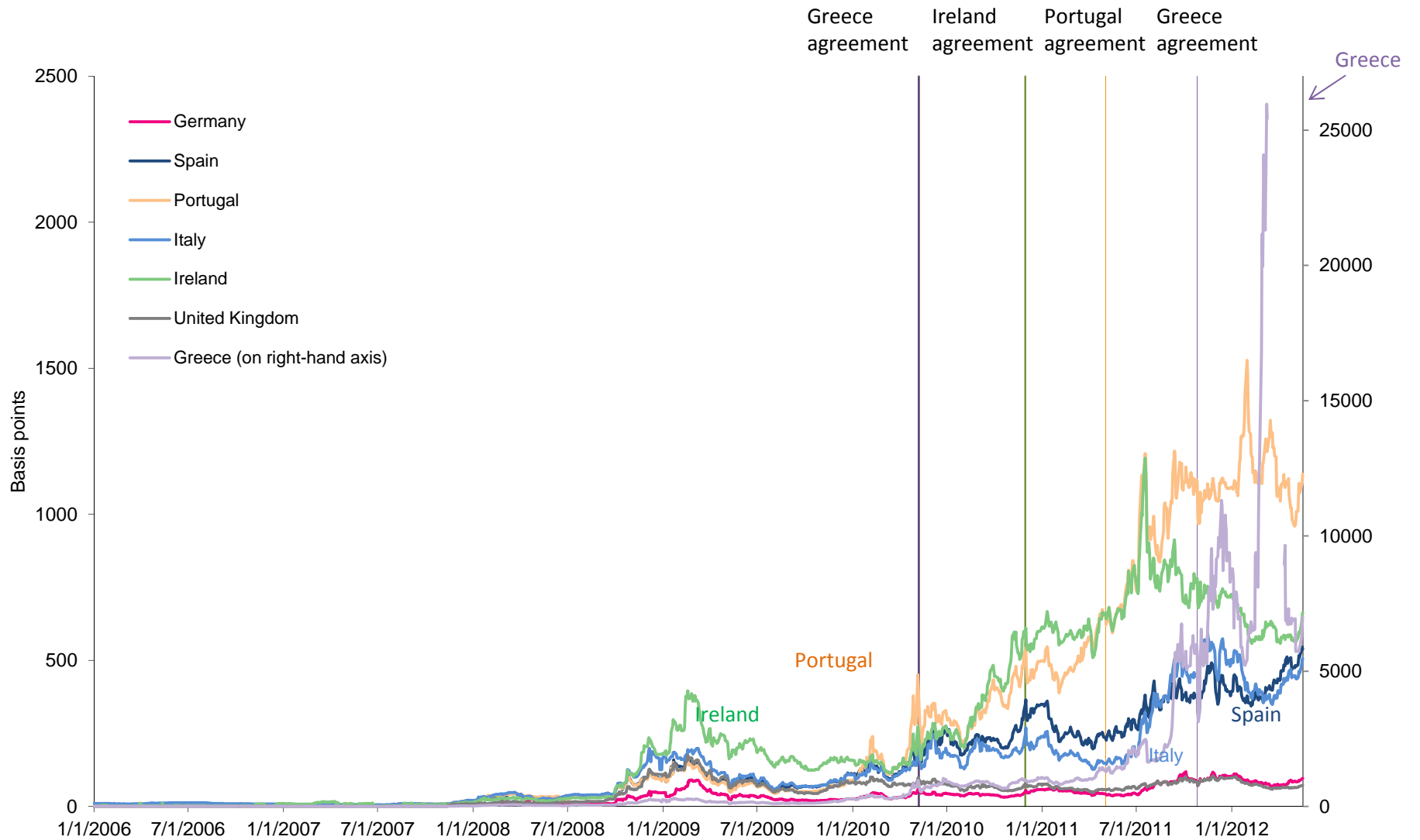
- Financial Crisis of 2007-2008
 - Private Banking and Debt Crisis
- Sovereign Debt Crisis of 2009-2011?

LIBOR less OIS - 30 days
January 1, 2006 to May 16, 2012



Sources: Financial Times, Bloomberg, Haver Analytics

European CDS Spreads January 2, 2006 to May 16, 2012



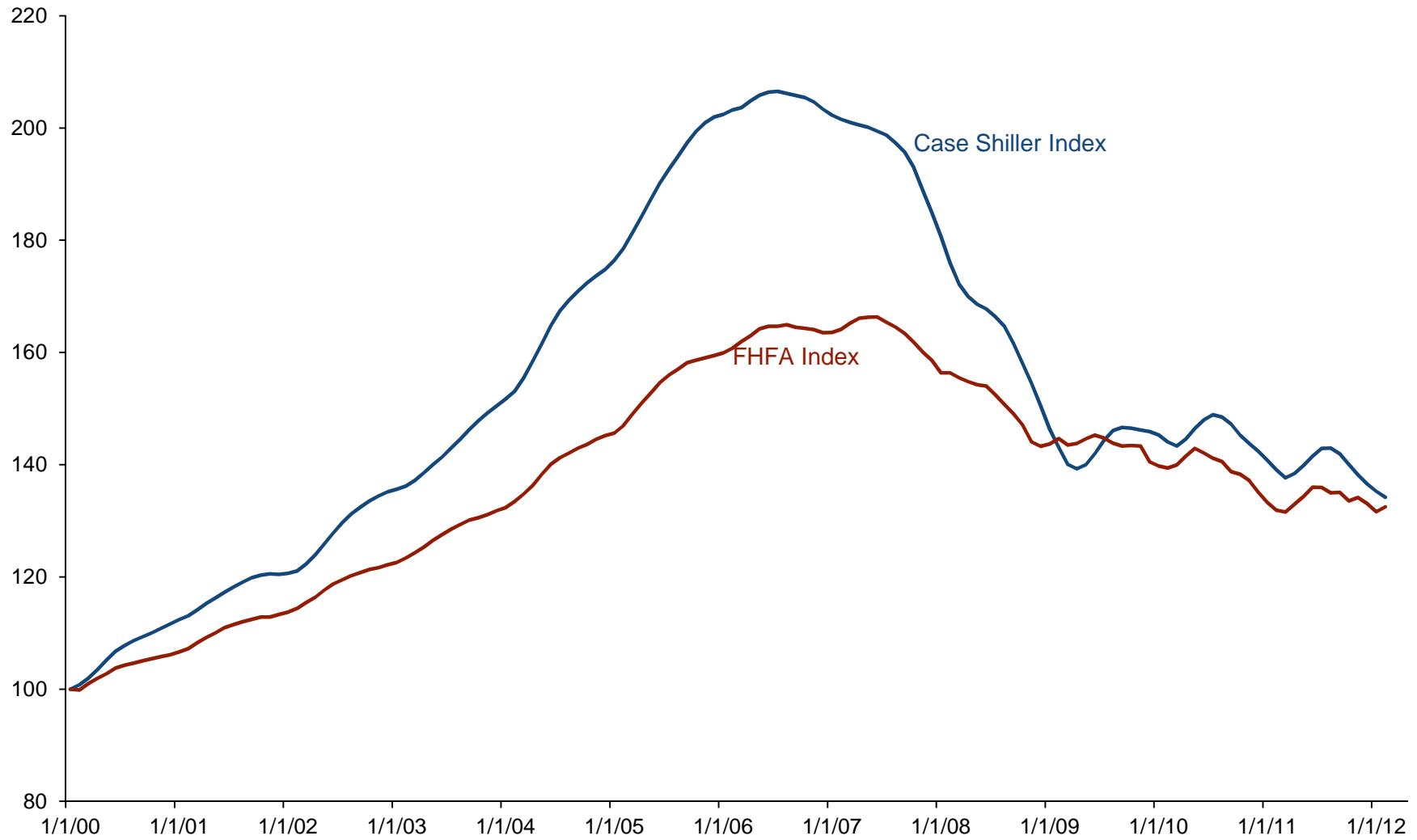
Source: Datastream, Bloomberg

Summary of Developments

- Private Debt Crisis of 2007-2008
 - Prelude until August 9, 2007
 - Main Act from August 9, 2007 to September 16, 2008
 - Climax from September 16, 2008 to early 2009
- Sovereign Debt Crisis of 2009 to 201?

Housing Price Indices

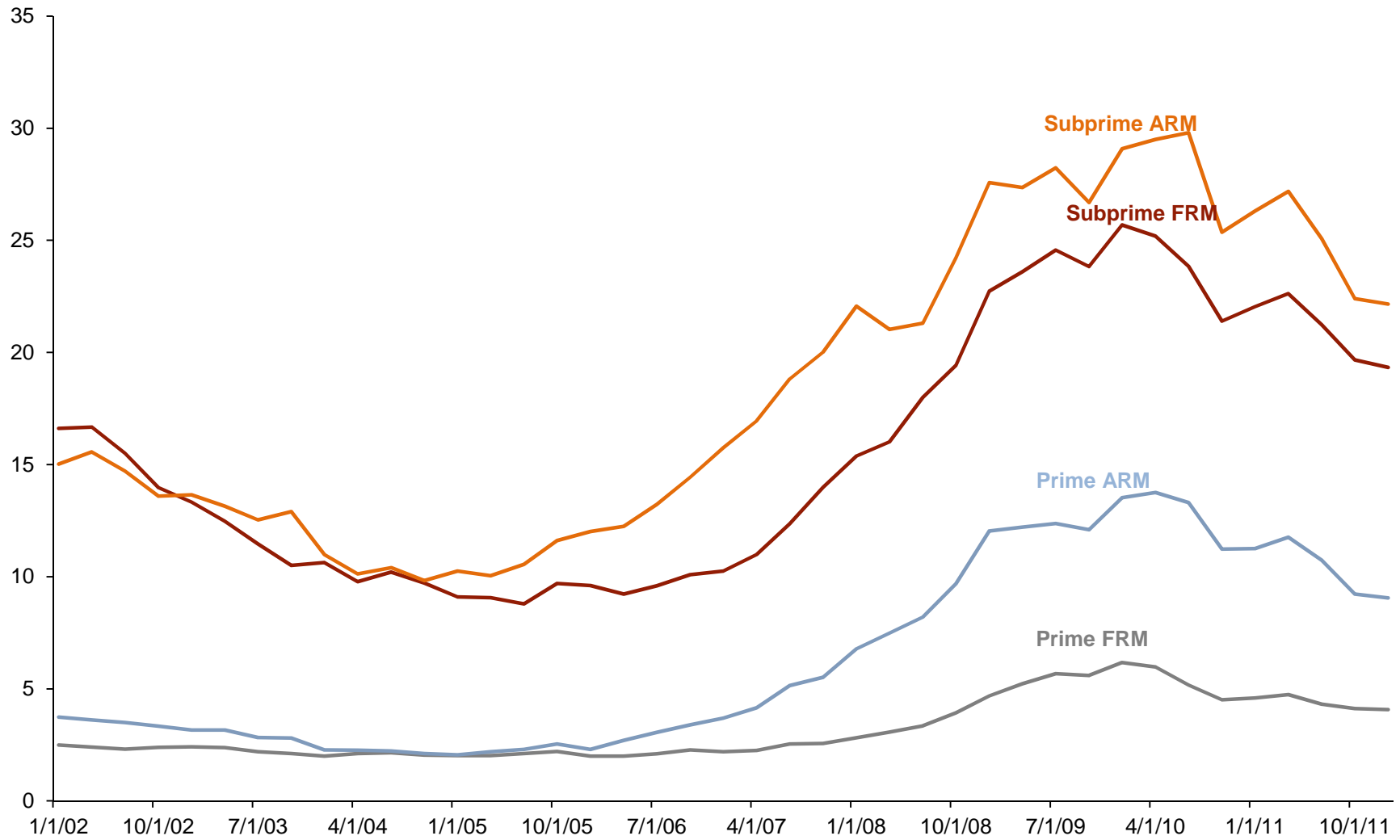
January 2000 to February 2012



Sources: S&P, FHFA, Haver Analytics

U.S. Delinquencies by Loan Type

First Quarter 2002 to First Quarter 2012

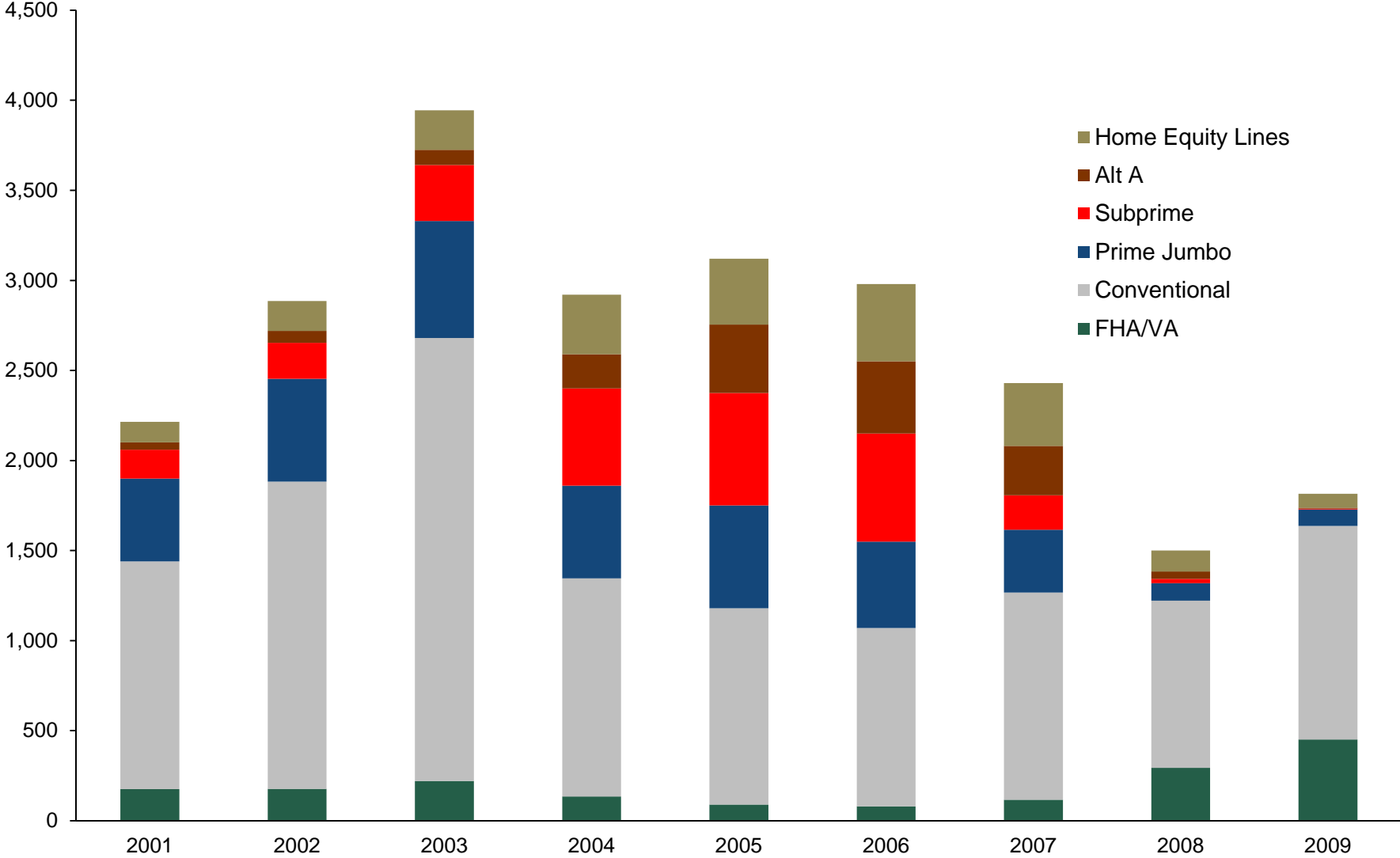


Sources: Mortgage Bankers Association, Haver

US Mortgage Originations by Type

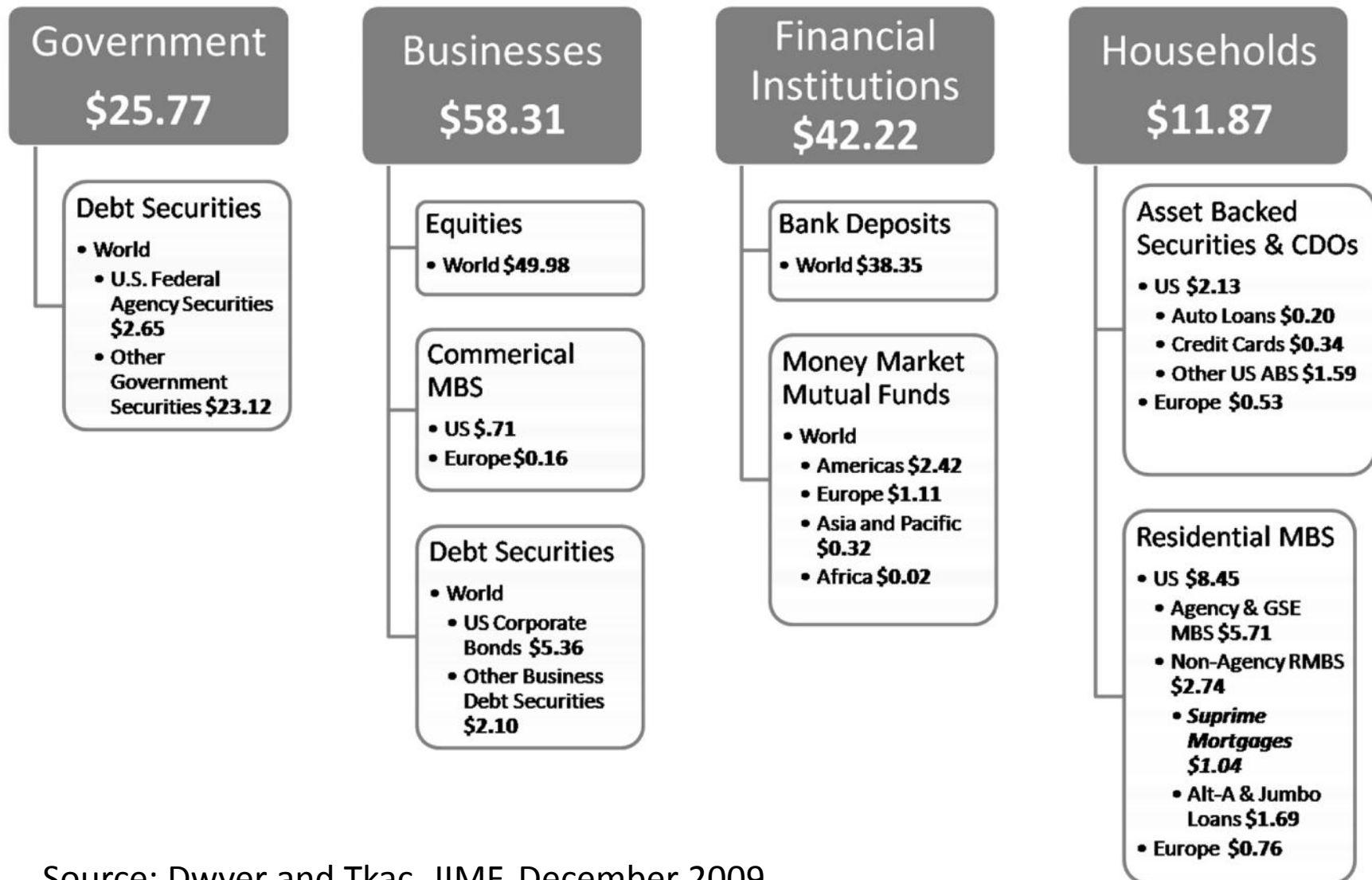
2001 through 2009

Billions \$



Source: Inside Mortgage Finance

Size of Global Financial Markets



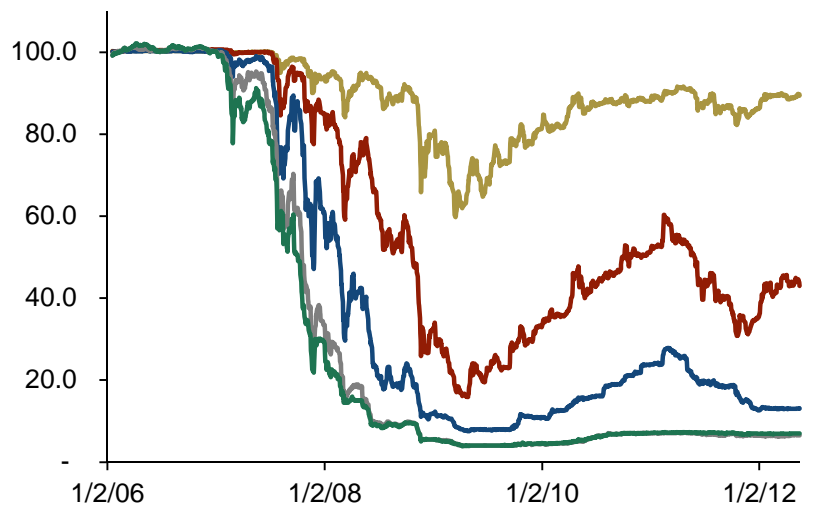
Source: Dwyer and Tkac, JIMF, December 2009

Story

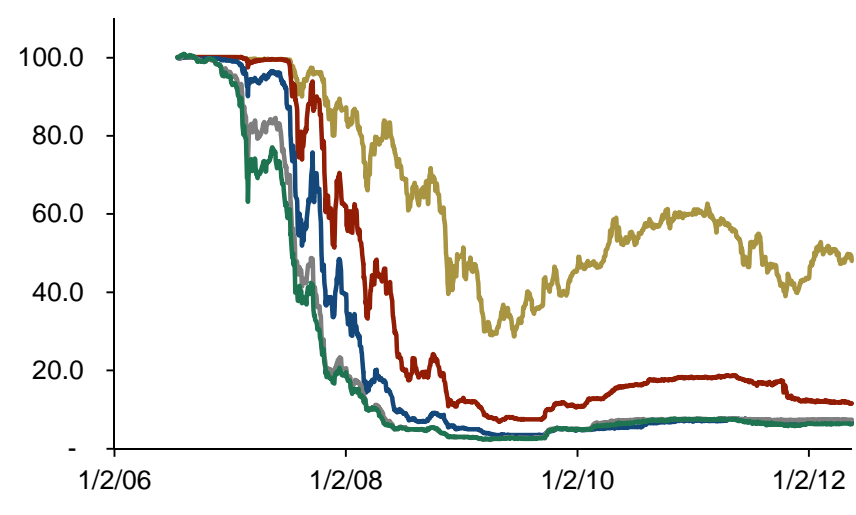
- A tiny part of securities markets put asset markets around the world in a state of turmoil
- How can that be?

ABX Indices by Vintage

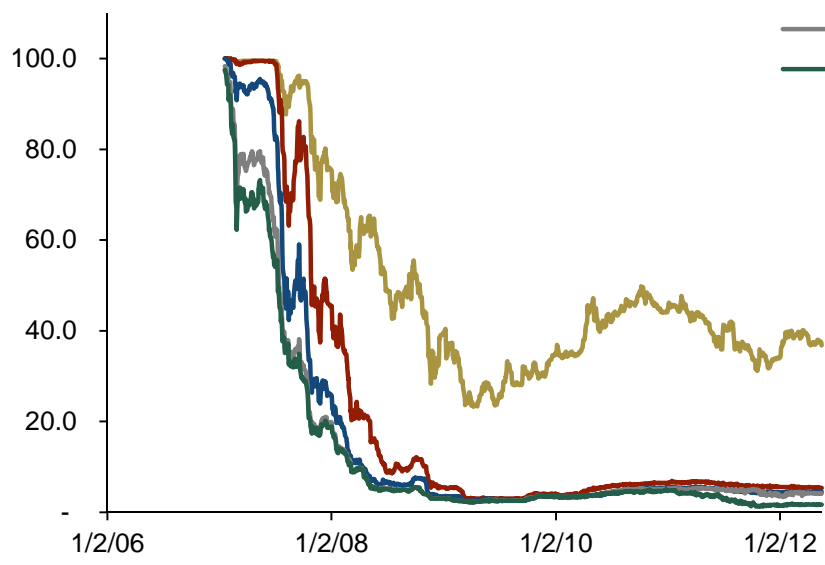
06-1 vintage



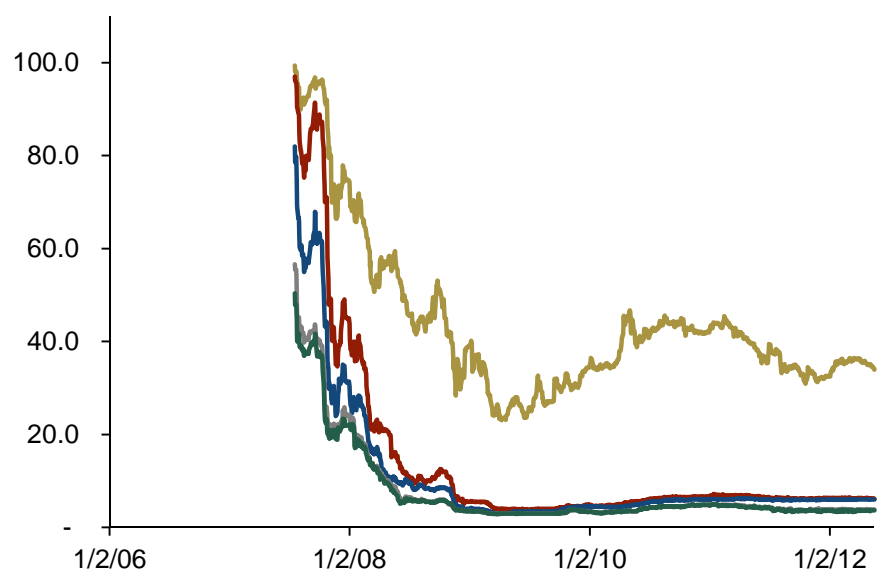
06-2 Vintage



07-1 Vintage

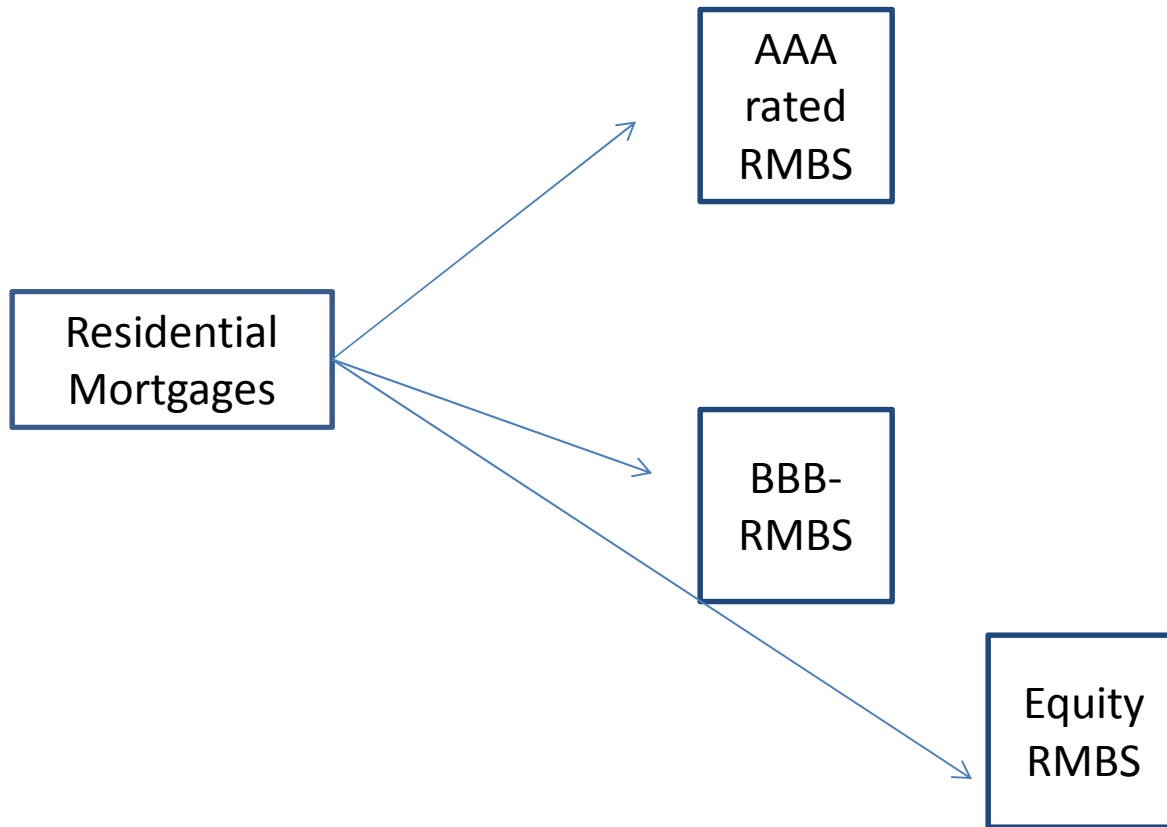


07-2 Vintage

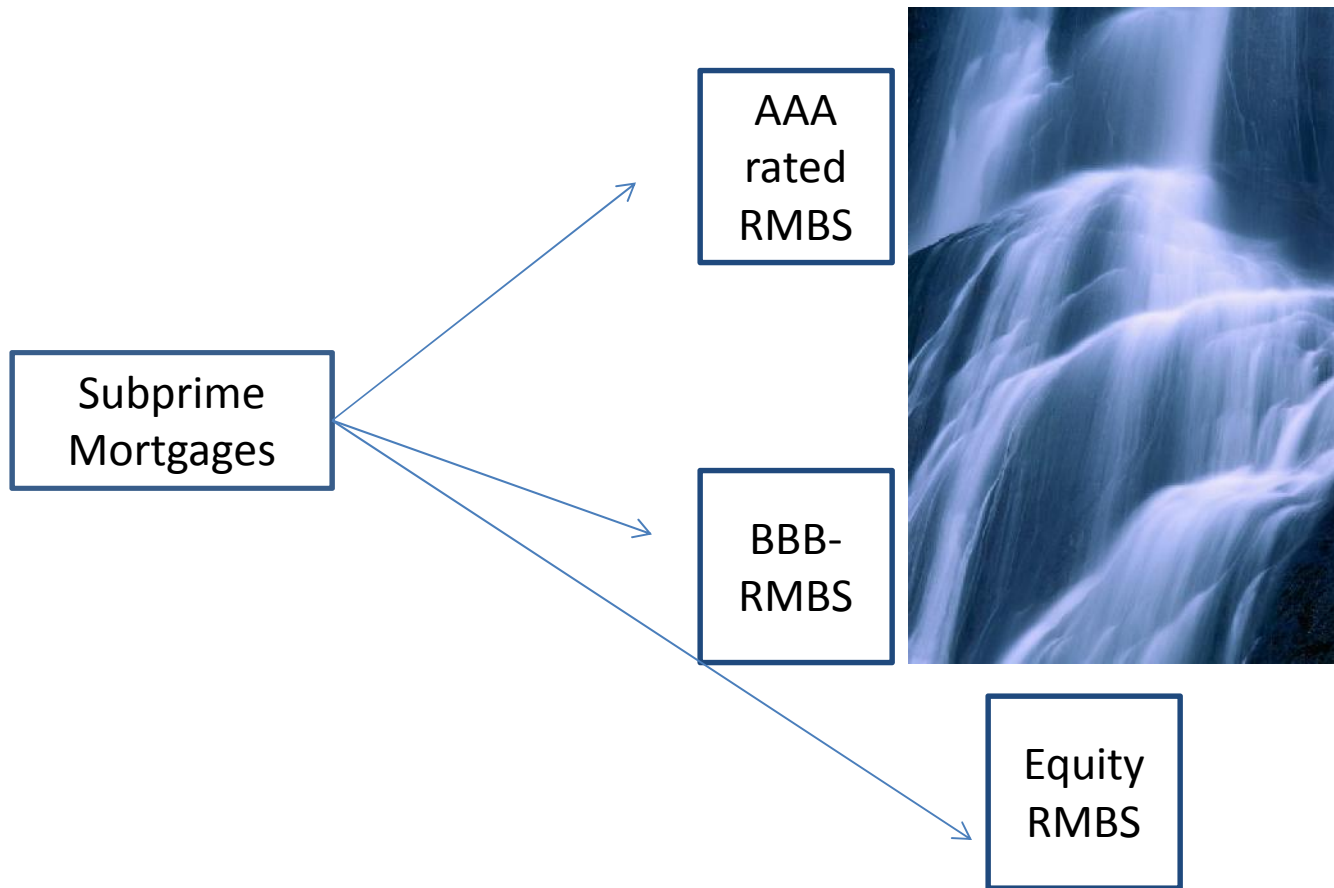


- AAA
- AA
- A
- BBB
- BBB-

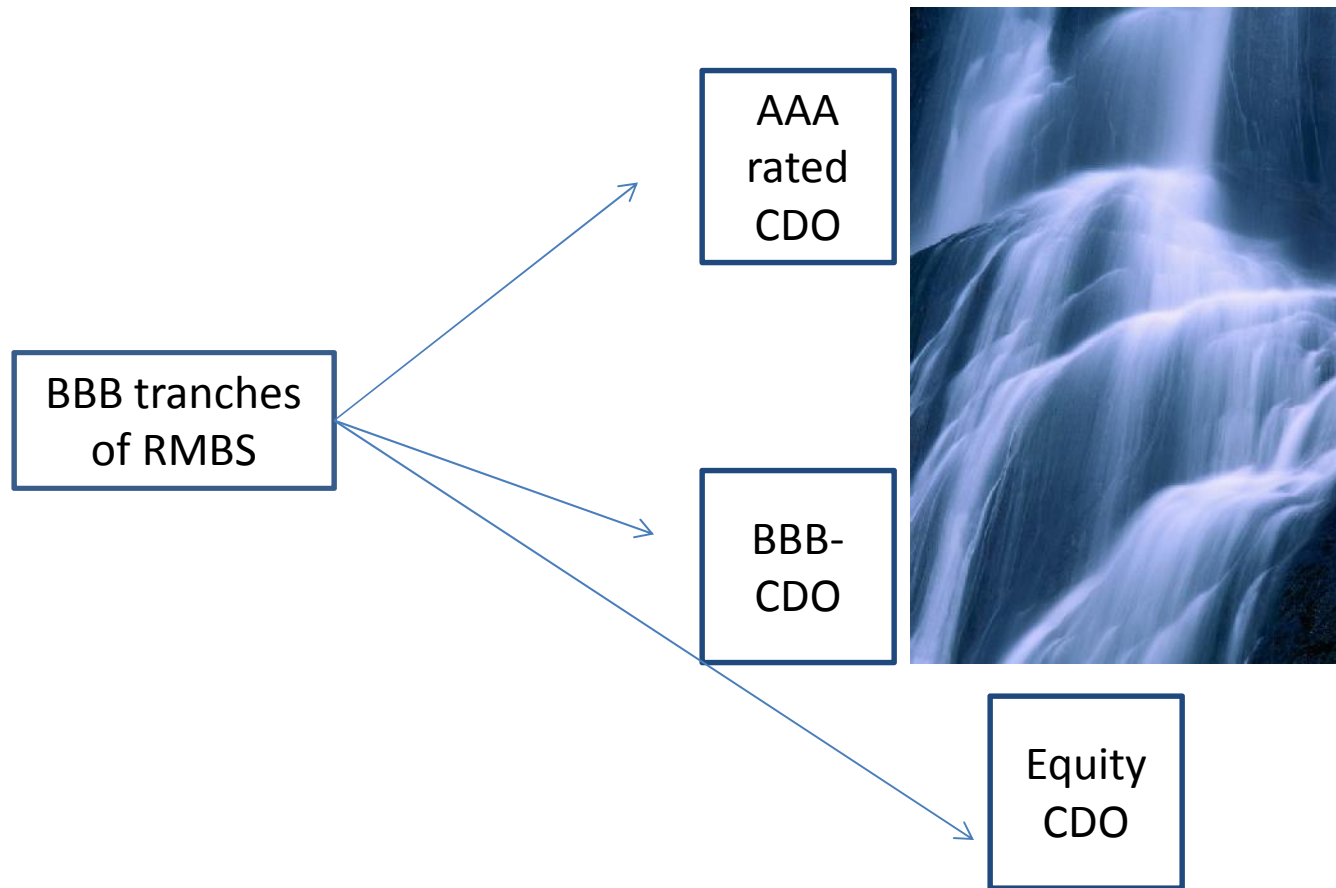
Three Securities Instead of One



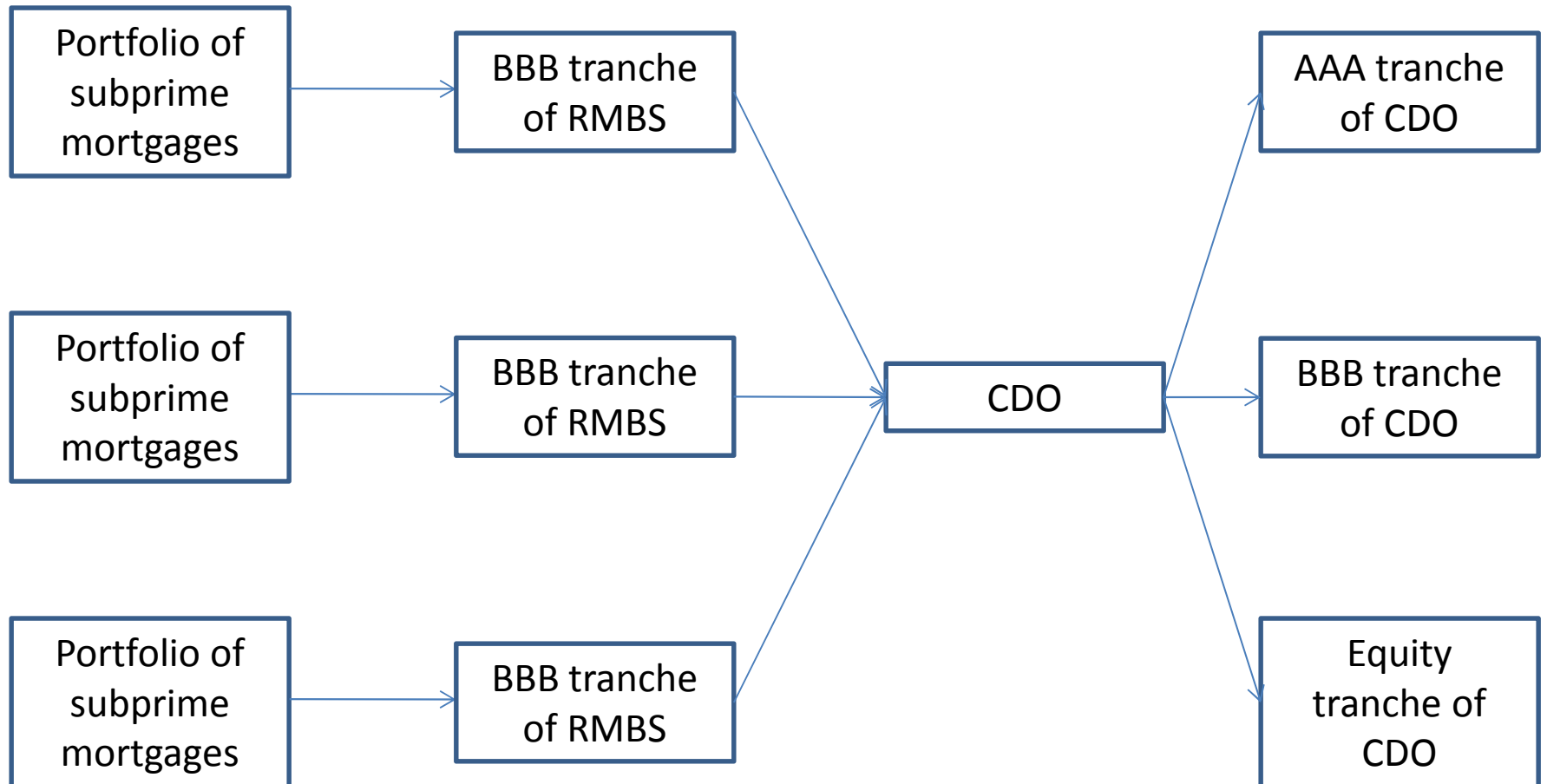
Three Securities Instead of One



CDOs from Tranches



Mortgages to CDOs

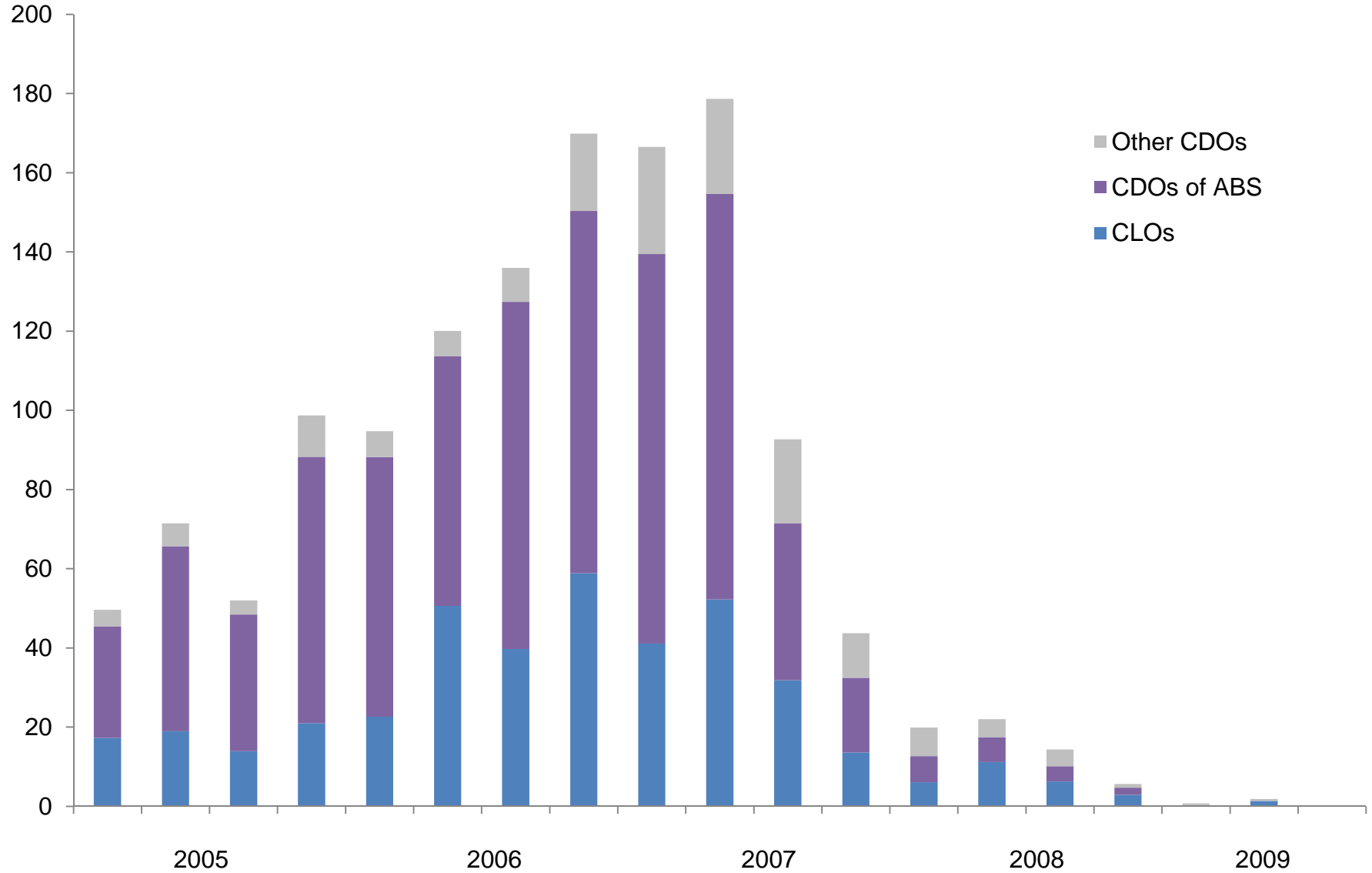


CDO Deals Idiosyncratic and Traded over the Counter

- A trust, generally in the Cayman Islands, owns the assets backing the CDOs and distributes payments
- Not standardized contracts
- Over-collateralization and triggers
 - Can build up a reserve account for possible losses
 - Can be contingent on delinquencies and losses
- Payment order can change over time
 - Principal may be paid initially to AAA holders
 - Proportionately to all after a couple of years
- Manager can be passive or active
- Traded over the counter

Global Issuance of Collateralized Debt Obligations

First Quarter 2005 to Third Quarter 2009



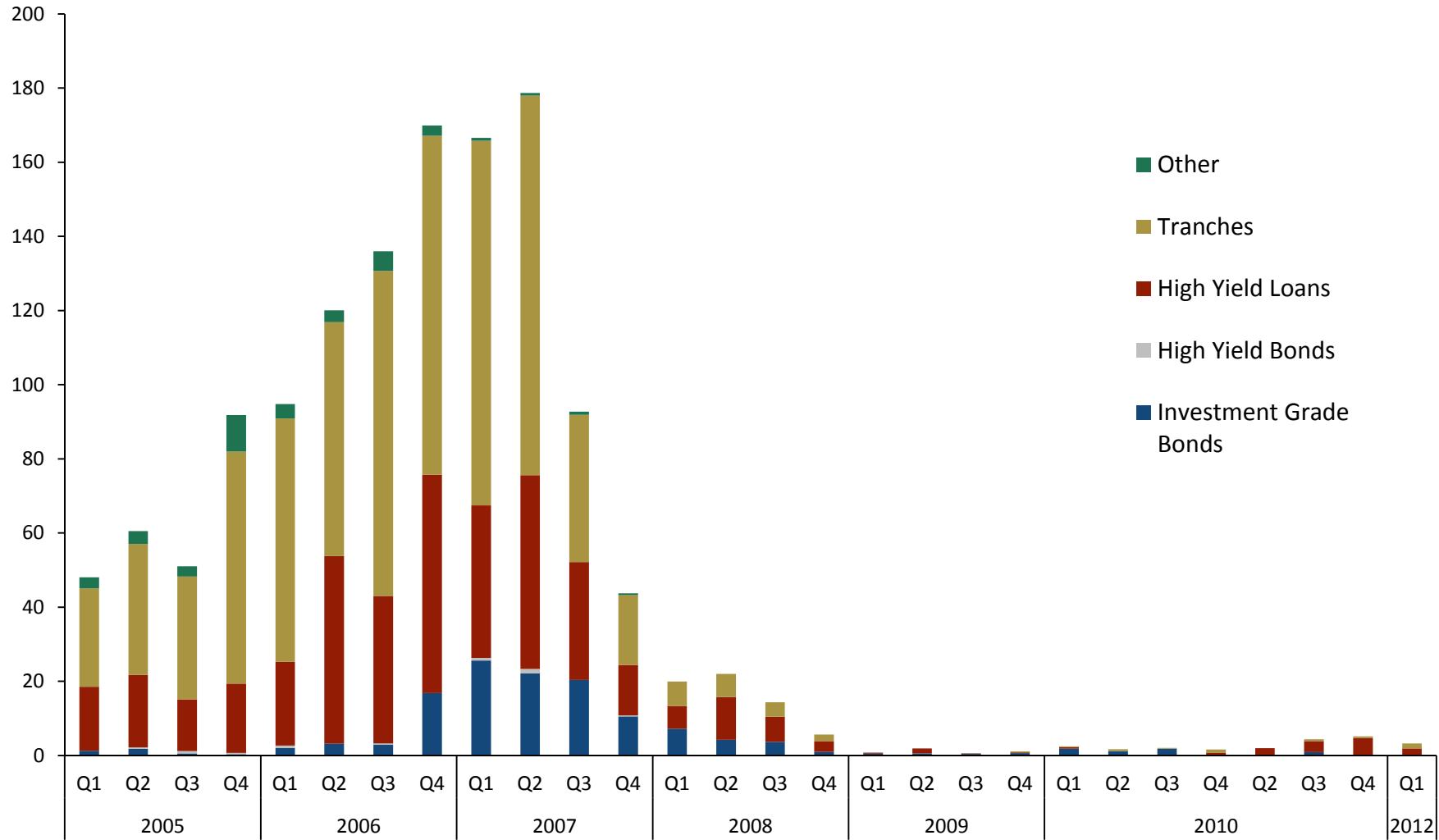
Source: SIFMA

Source: SIFMA

Global Issuance of Collateralized Debt Obligations

First Quarter 2005 to First Quarter 2012

Billions \$



Source: SIFMA

Securities and “Risk Sharing”

- CDOs were purchased by entities all over the world
- AAA rating made them seem like a fine purchase
 - AAA CDO is not a AAA corporate bond
 - CDO is based on a portfolio of loans
 - Behavior of cash flows in default is different
 - Ratings were conditioned on rising house prices
- Very hard to value if mortgagees start to default

Synthetic CDOs

- Can create a CDO without owning any of the underlying securities
- Sell protection on the underlying securities using credit default swaps
- Can replicate cash flows from owning the securities
- Done using ABX or custom synthetic CDO

Global Financial Crisis?

- Other countries
 - Iceland
 - Ireland
 - United Kingdom
 - Spain

Global Financial Crisis?

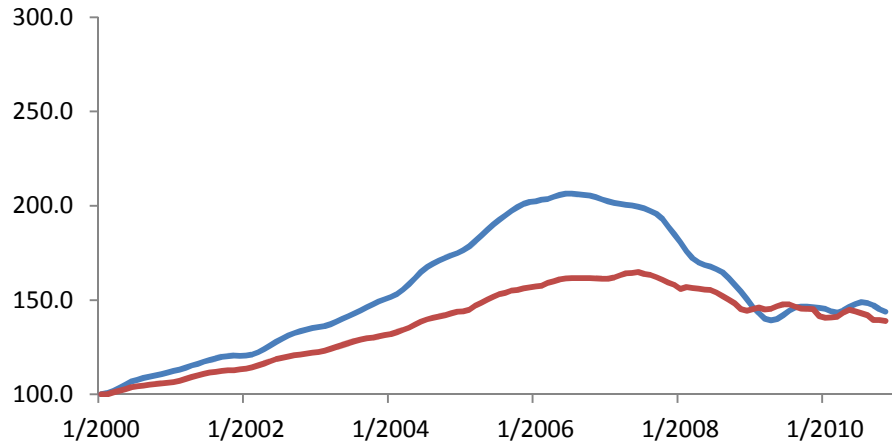
- Other countries
 - Iceland
 - Ireland
 - United Kingdom
 - Spain
- Not really “global”
 - Australia
 - Canada
 - Japan
 - Korea

U.S. Not Only Country with Housing Problems

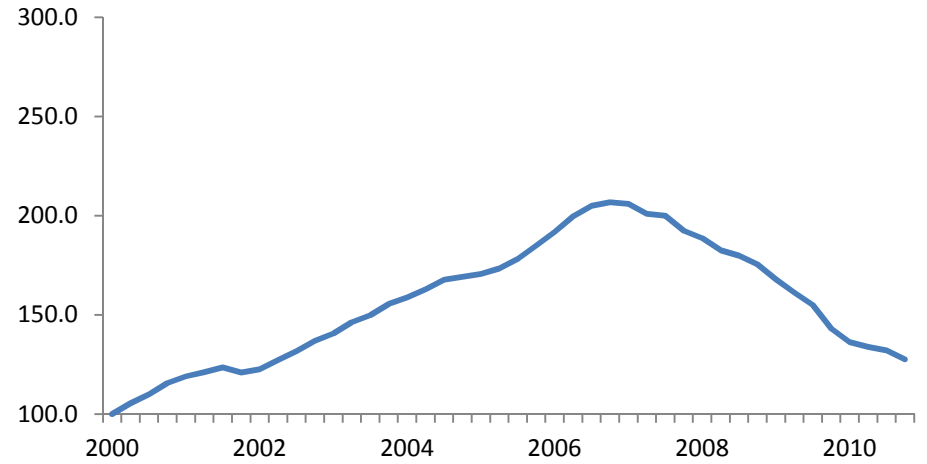
- House prices rose in many countries besides U.S.
- Widespread increases of leverage
- Widespread increases of maturity transformation

Housing Prices

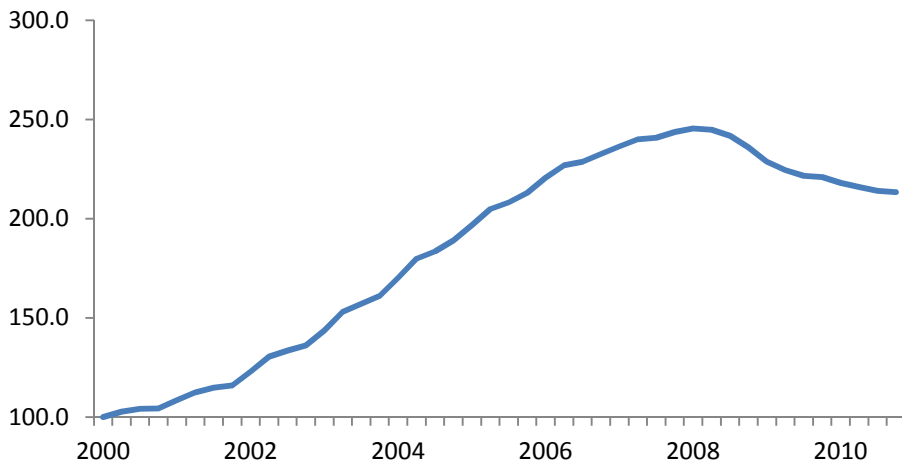
United States



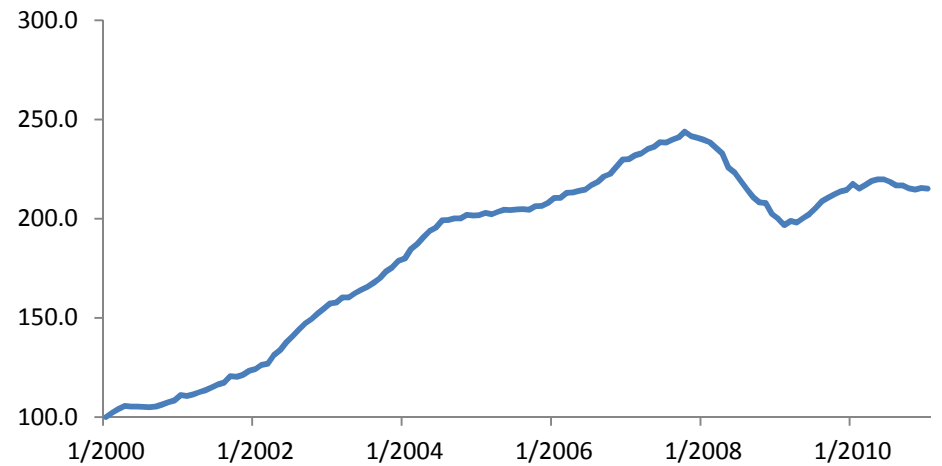
Ireland



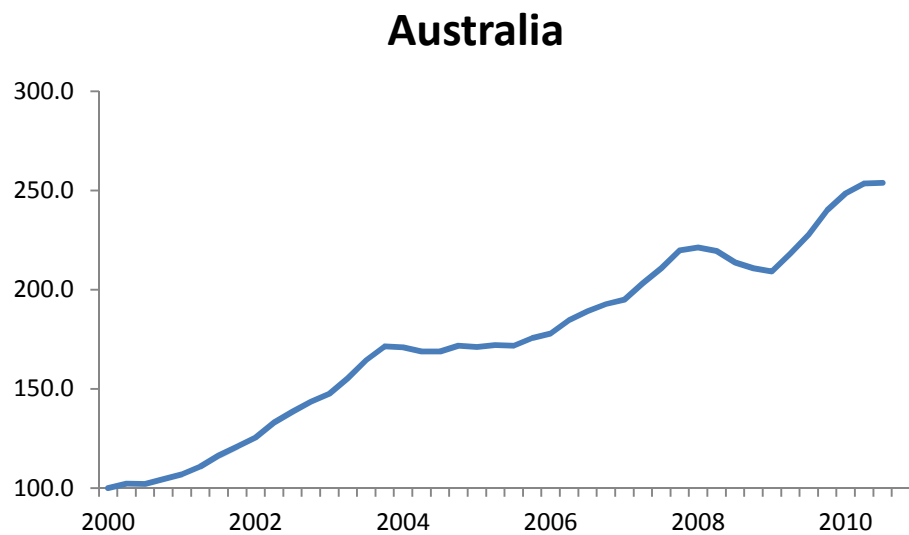
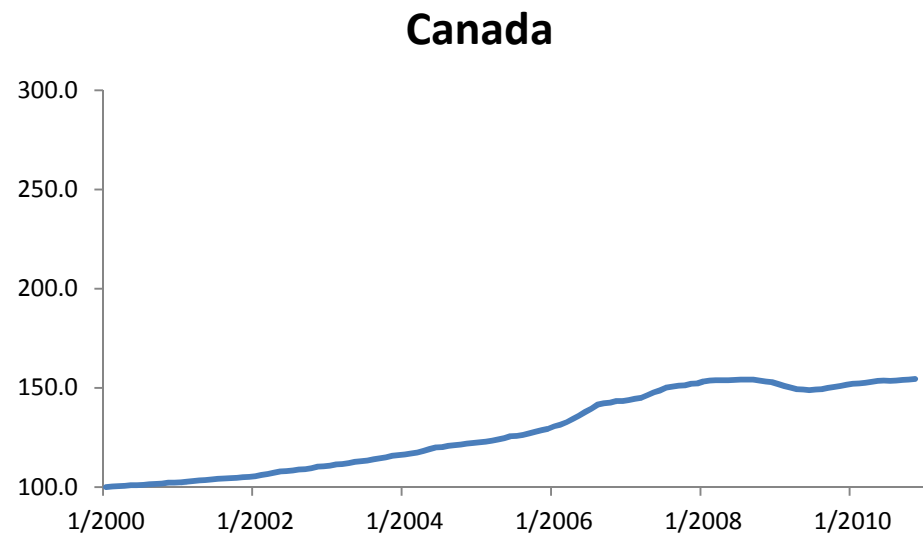
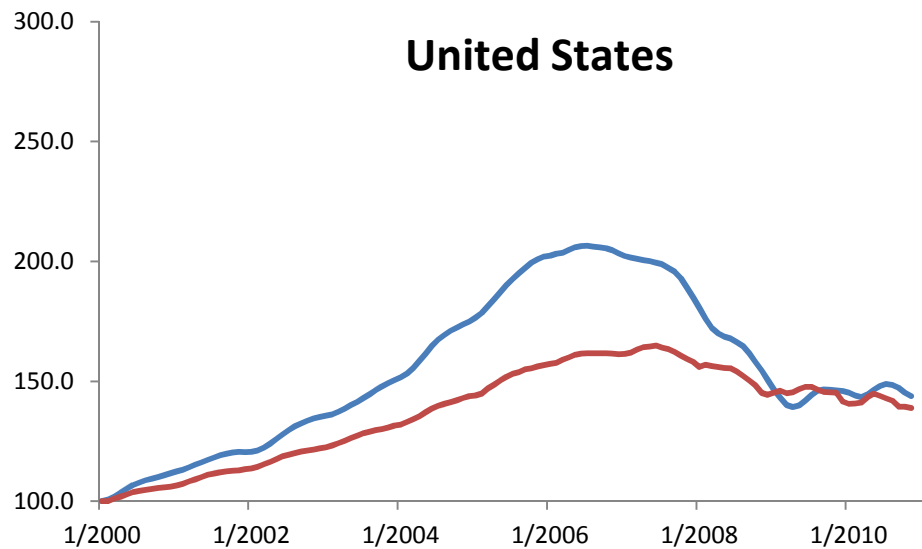
Spain



U.K.

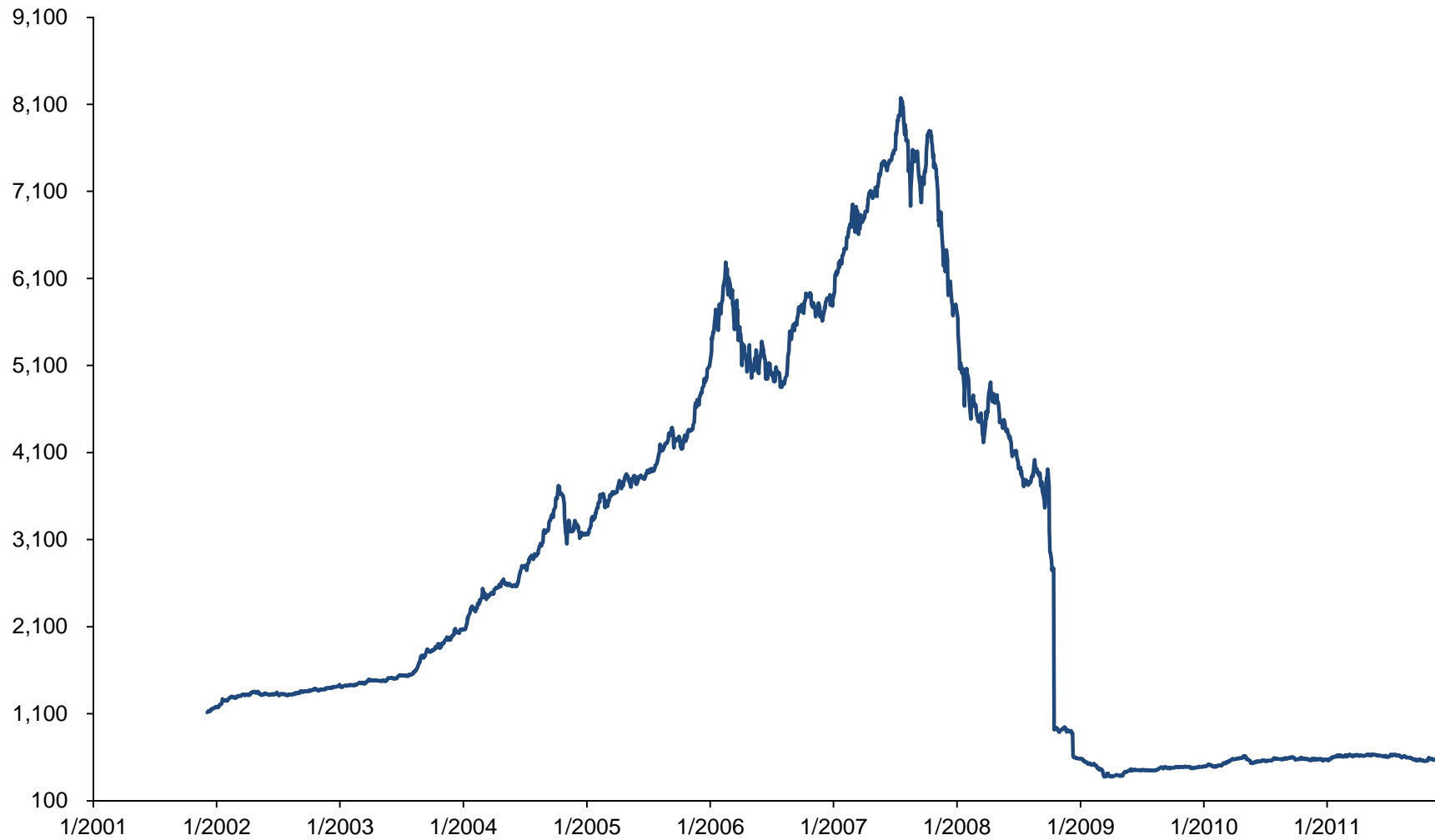


Housing Prices



ICEXI Icelandic Stock Price Index

December 4, 2001 to November 29, 2011



Source: Bloomberg

Run on Northern Rock



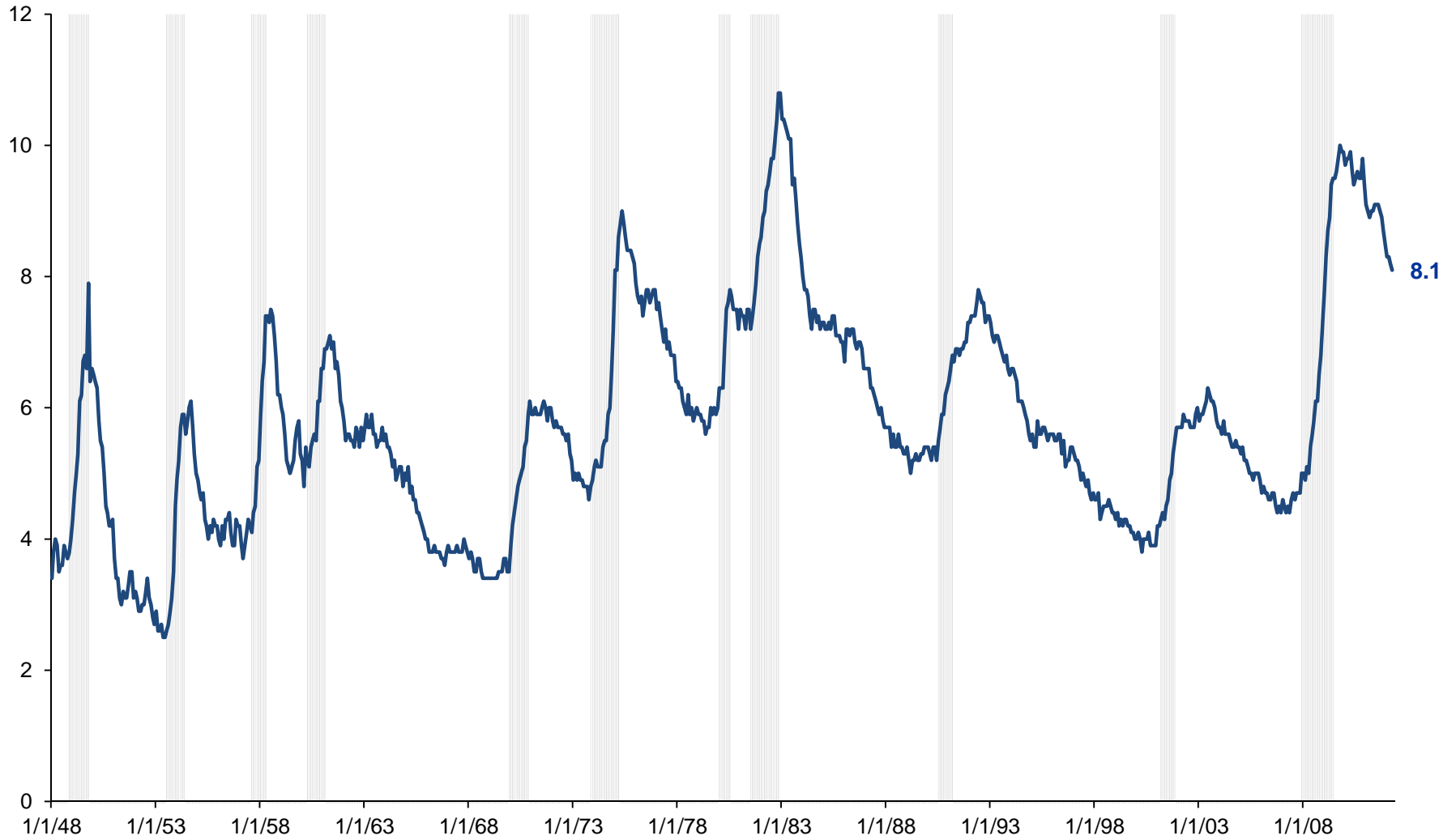
Source: <http://www.wealthbuildinglessons.com>

An Hypothesis

- Common elements are
 - Increases in leverage
 - Increases in maturity transformation
 - Funding long-term assets by short-term borrowing
- Best response
 - “World is riskier than many thought”
 - Reduce leverage
 - Reduce maturity transformation

The Great Moderation: U.S. Unemployment Rate

January 1948 to April 2012



Sources: BLS, NBER, Haver Analytics

A Quest for Stability



Source: <http://img2.travelblog.org/Photos2/>

Financial Regulation

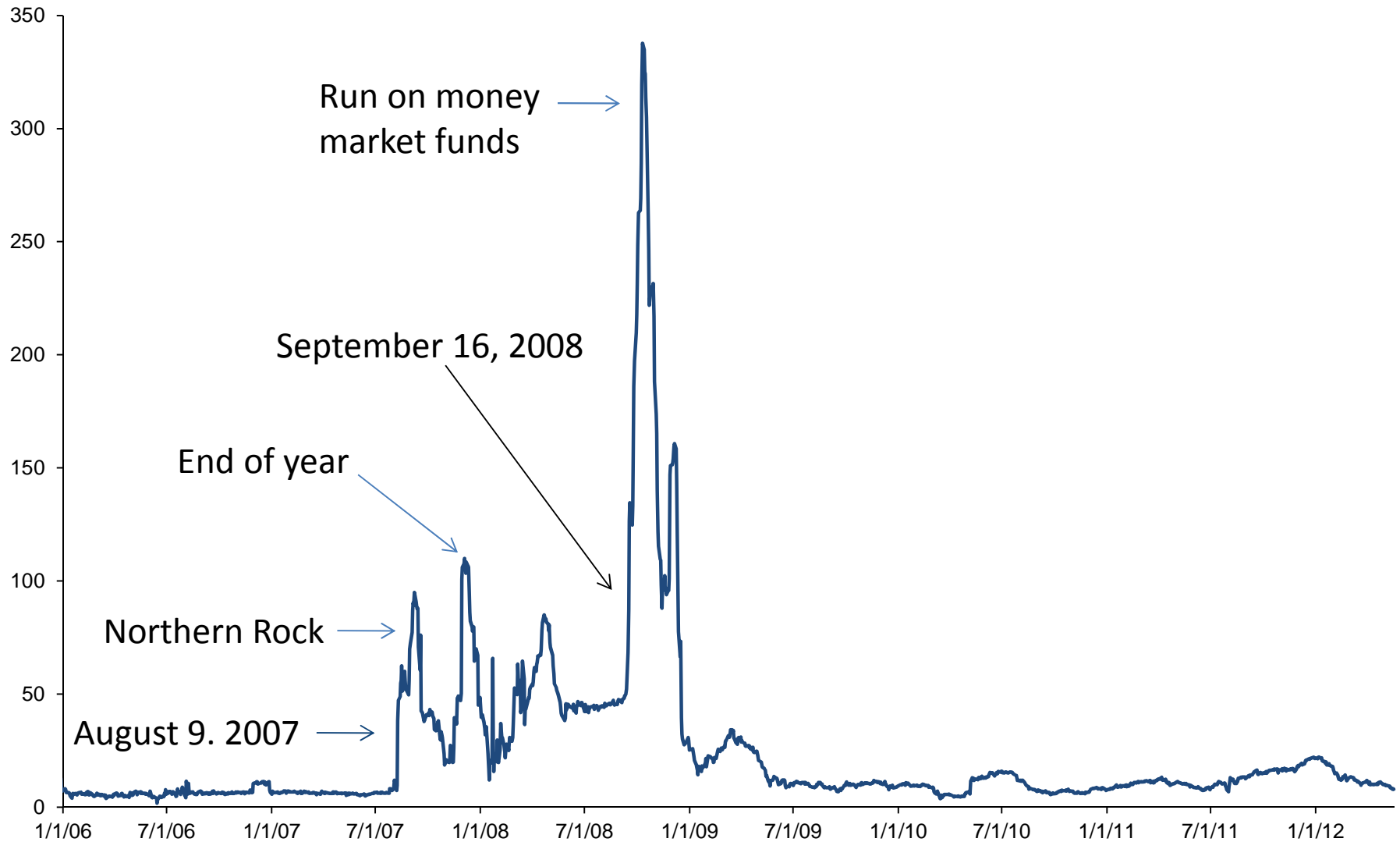
- What have we learned?
- I would suggest that more capital is desirable
- What about systemic risk regulator?
 - Depends on someone's ability to
 - See problems coming
 - See when problems are not coming
 - Actually be able to do something about problems seen coming
 - Issue is what behavior consistent with equilibrium

Financial Regulation

My Thoughts

- Make financial system more resilient
- Don't try to avoid what will happen anyway

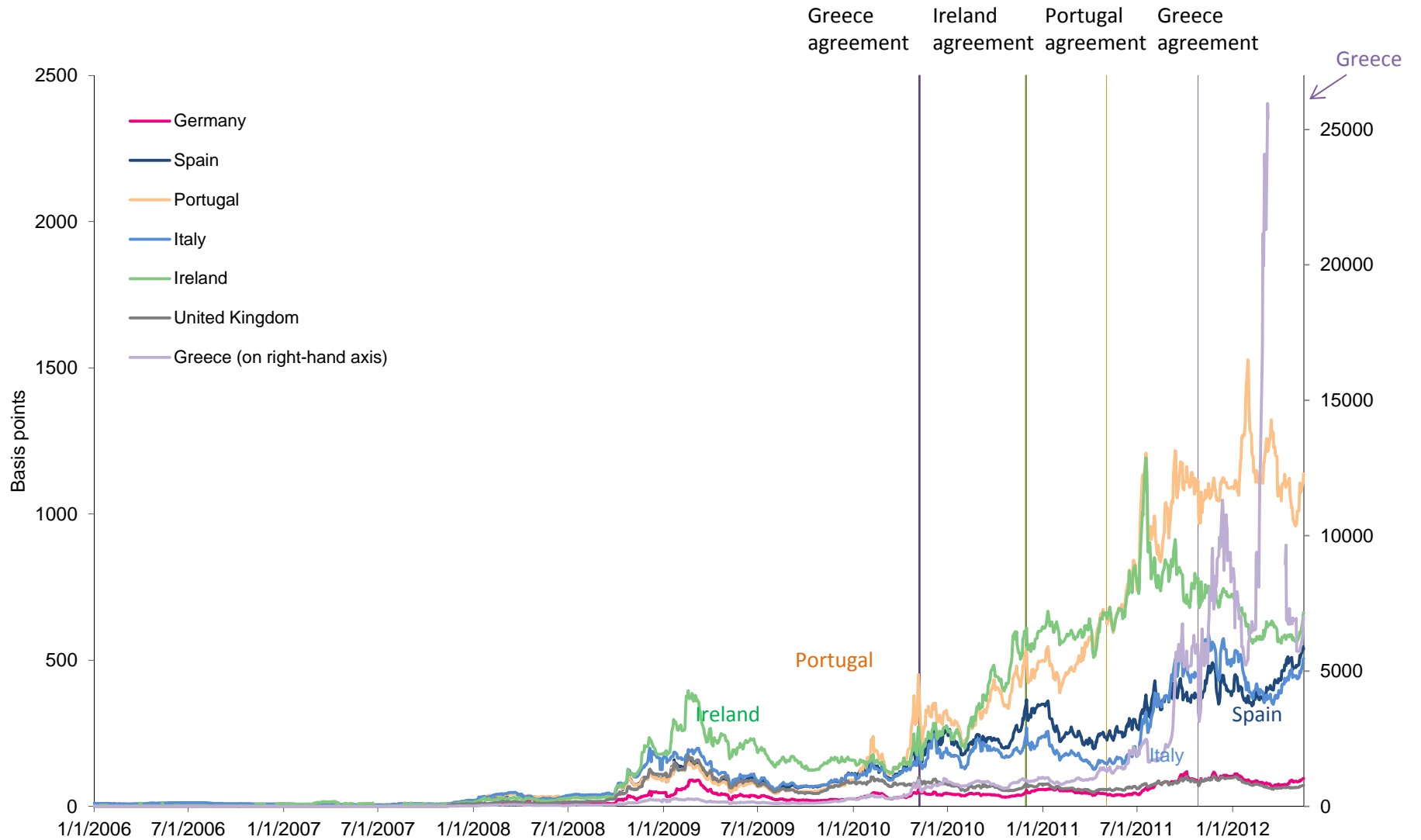
LIBOR less OIS - 30 days
January 1, 2006 to May 16, 2012



Sources: Financial Times, Bloomberg, Haver Analytics

European CDS Spreads

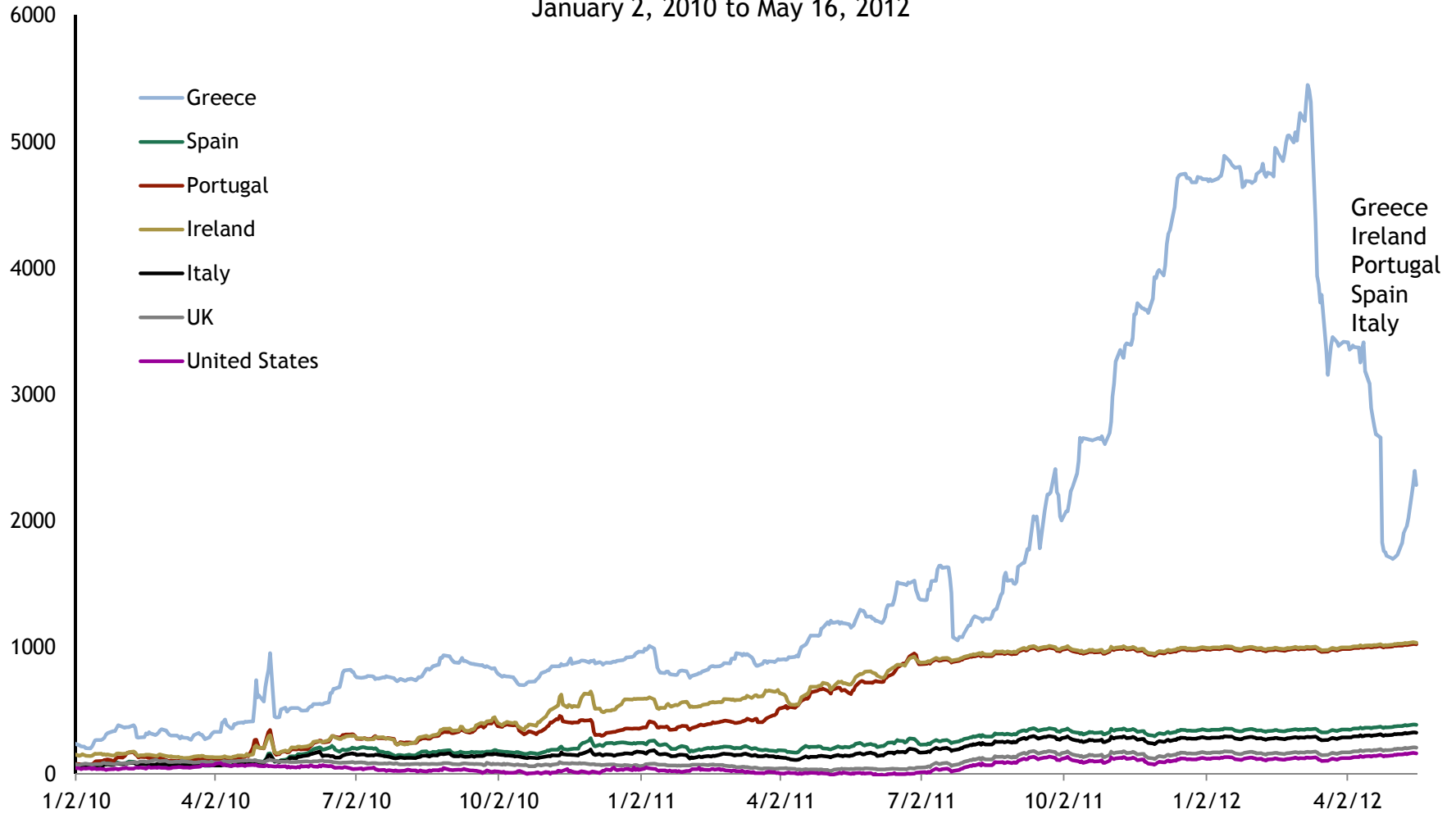
January 2, 2007 to May 16, 2012



Source: Datastream, Bloomberg

European Bond Spreads

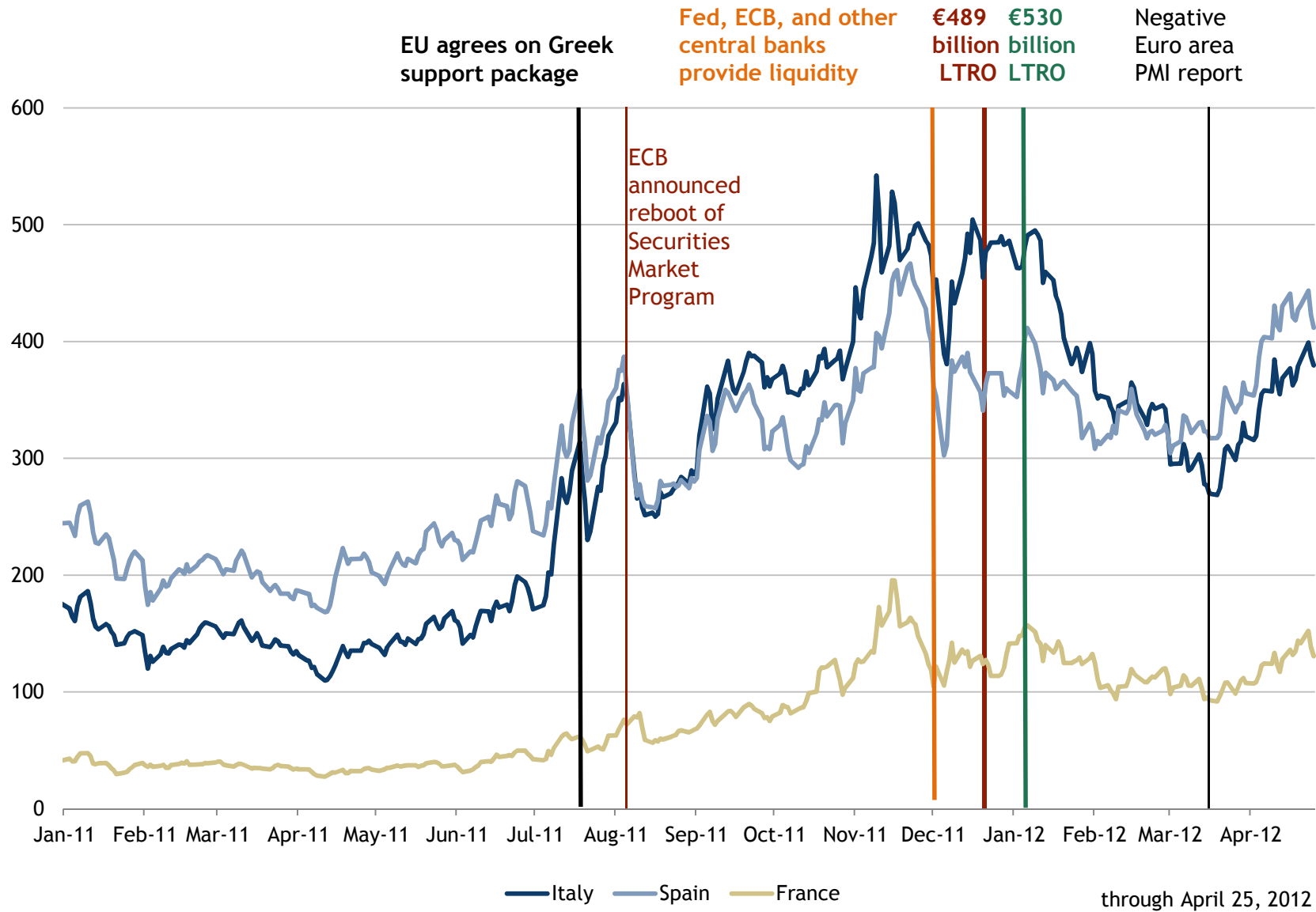
Basis points, 10-year bond spread to German bonds
January 2, 2010 to May 16, 2012



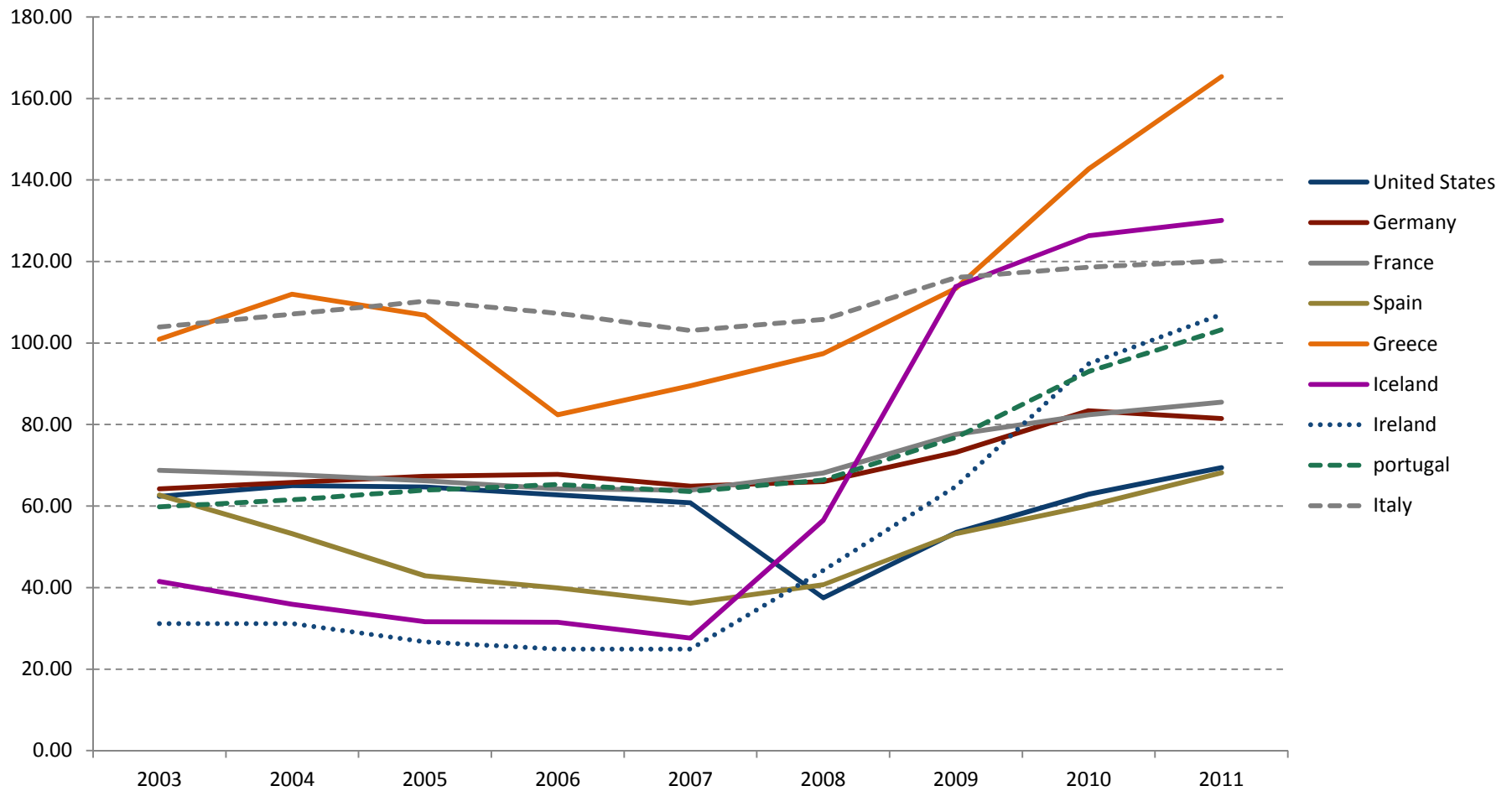
Source: Bloomberg

European Bond Spreads

Basis points, 10-year bond spread to German bonds

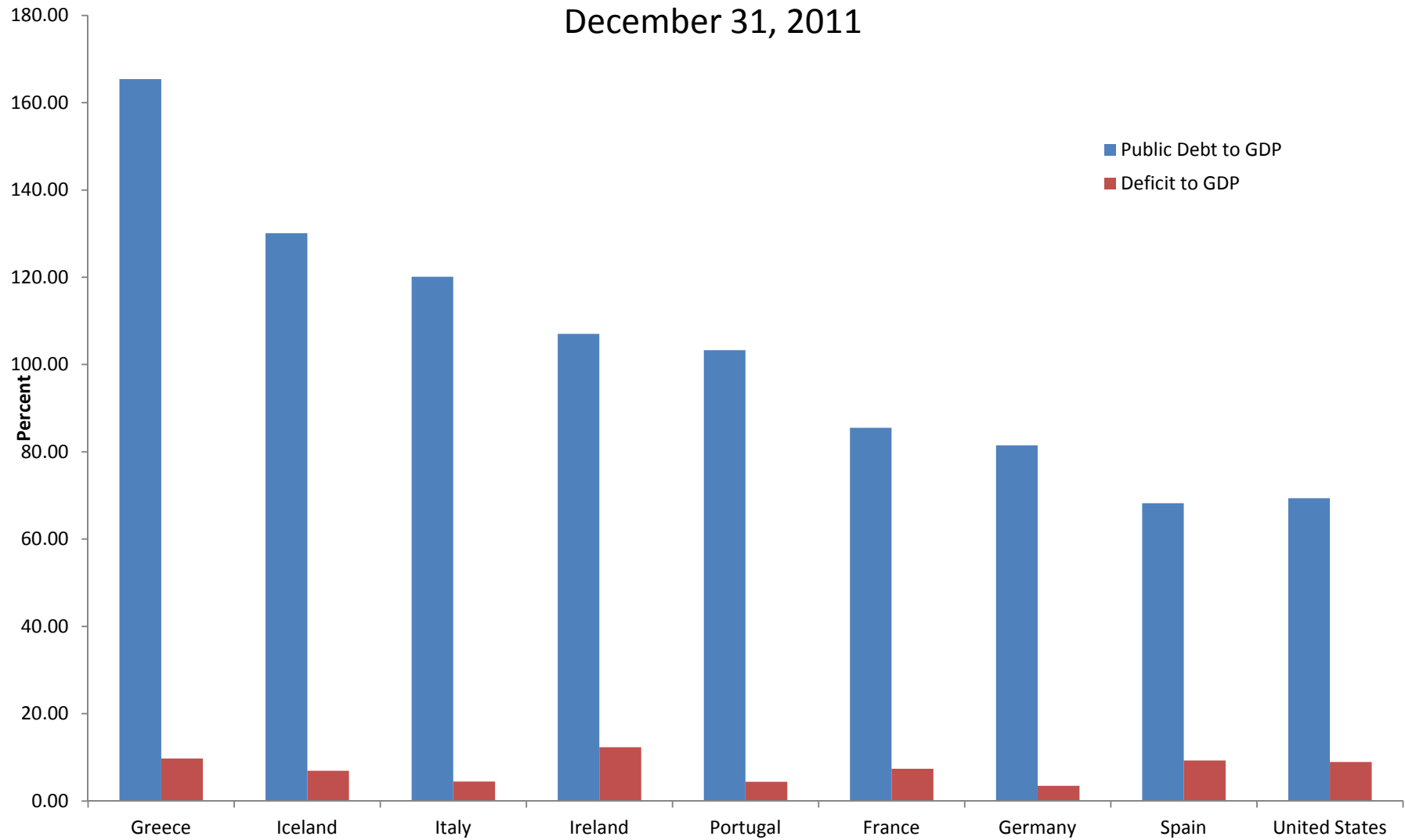


Ratio of Debt to Gross Domestic Product 2003 to 2011



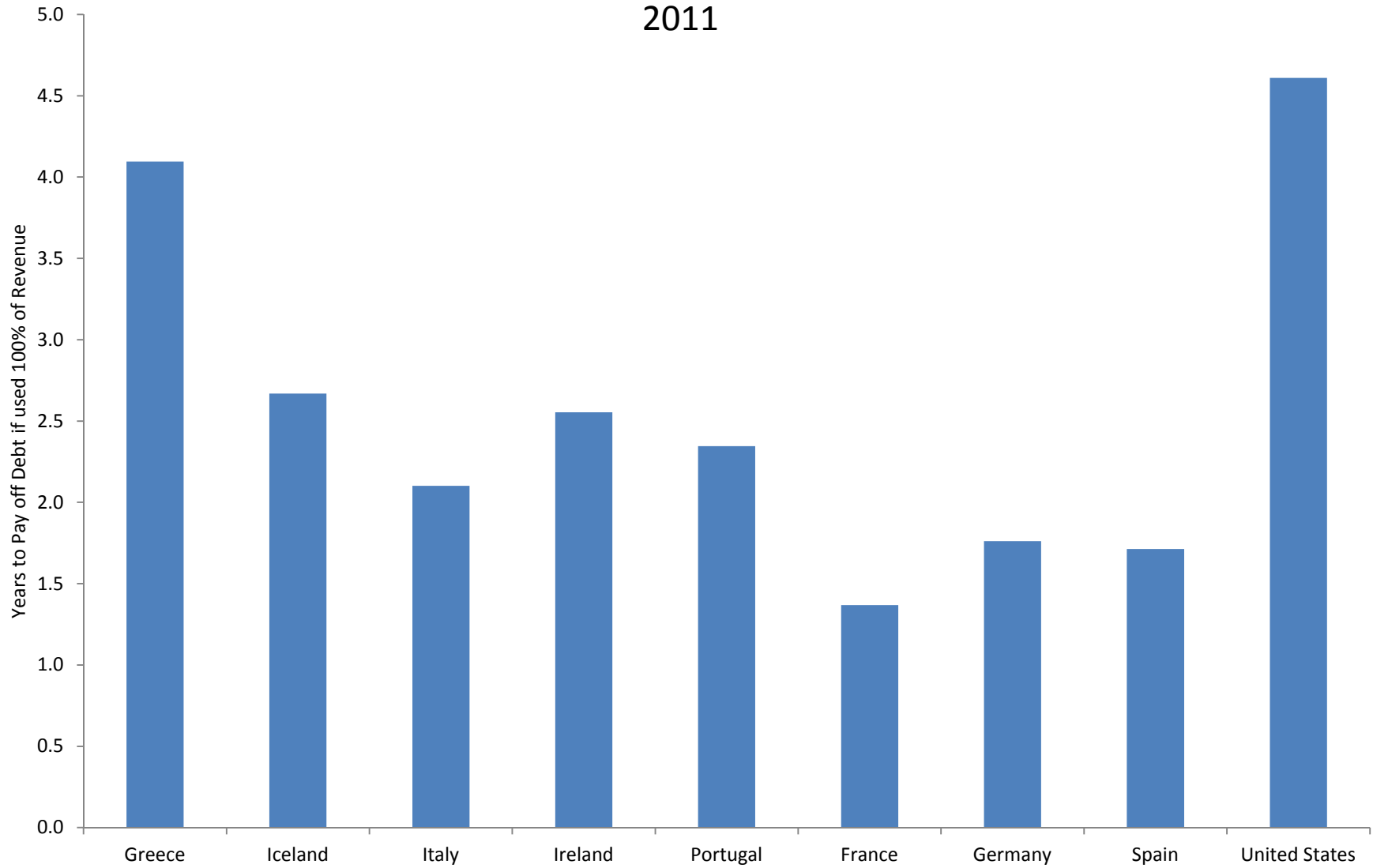
Source: CIA World Factbook, estimates

Debt to GDP Ratios and Government Deficits December 31, 2011



Source: CIA World Factbook, estimates

Debt Relative to Government Revenue 2011



Source: CIA World Factbook, estimates

Rankings on These Measures

Debt/GDP

Deficit/GDP

Debt/Revenue

Greece

Ireland

United States

Iceland

Spain

Greece

Italy

France

Iceland

Ireland

United States

Ireland

France

Greece

Italy

Portugal

Iceland

Portugal

Germany

Portugal

Spain

Spain

Italy

Germany

United States

Germany

France

Rankings on These Measures

Debt/GDP

Deficit/GDP

Debt/Revenue

Greece

Ireland

United States

Iceland

Spain

Greece

Italy

France

Iceland

Ireland

United States

Ireland

France

Greece

Italy

Portugal

Iceland

Portugal

Germany

Portugal

Spain

Spain

Italy

Germany

United States

Germany

France

Current Euro Area Arrangement

- European Financial Stability Facility
 - EFSF can lend up to €440 billion
 - This is an increase in lending ability
 - Can lend less than securities issued
 - Currently limited because of a reserve fund
 - Securities issued backed by governments' guarantees
 - Have to issue more securities than lend
 - Some of funds are used to buy AAA-rated securities to help get and keep AAA rating

New Euro Area Arrangement

- European Stabilization Mechanism
 - Euro area states to be members
 - Initially can lend up to €500 billion
 - €700 billion pledged funds
 - €80 billion of funds paid in
 - €620 billion pledged and callable
 - Language interpreted as indicating bondholders will take losses
 - In accordance with IMF practice, in exceptional cases an adequate and proportionate form of private sector involvement shall be considered in cases where stability support is provided accompanied by conditionality in the form of a macro-economic adjustment programme.

Fiscal Compact

- Signed January 2012
- Possibly come into force by January 2013 and affect eligibility for funds from ESM
- Government restrictions at constitutional level
- Structural deficit $\leq 0.5\%$ of GDP
 $\leq 1\%$ of GDP if debt/GDP low enough
- Reduce debt/GDP by $1/20$ if debt/ GDP $> 60\%$
- Fine up to 0.1% of GDP

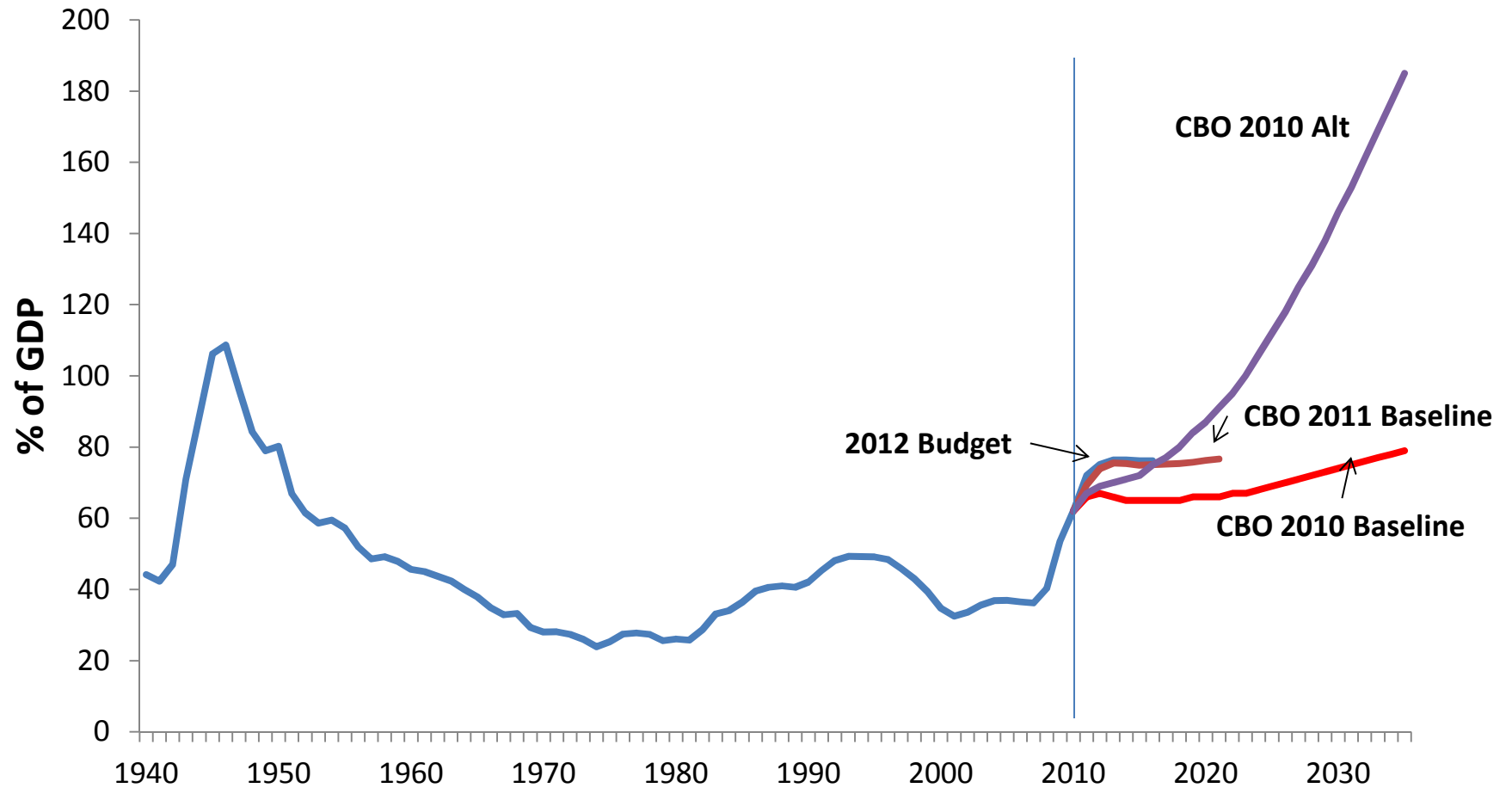
How Deal with Sovereign Debt Problems?

- Problem before: Relatively high leverage
- Problem now: Relatively high leverage
- Solution is the same: decrease leverage
 - At least stop future increases

What? No Stimulus?

- Stimulus temporary
 - Increase spending
 - Reduce taxes
- Long-run fiscal problems if run deficits for a long time
 - Obvious to voters and people in country
 - Creates concern about future taxes and reduces private spending

U.S. Debt Held by the Public as a Percentage of U.S. GDP



Eurozone

- Distinguish between eurozone and European Union
- Monetary union need not involve any other sort of entanglement
- Greece's current situation is not likely to last
 - Raise tax rates to increase tax revenue
 - GDP falls, which decreases tax revenue
- Perhaps other countries

Eurozone

- Banking Crisis?
- Banks hold substantial amounts of government debt

Different Monies



Different Monies

United States



Greece



Inflation



Eurozone Choices



Source: www.wtf.si

Good Choice for Greece?

- Default and leave eurozone
- Don't default

Good Choice for Greece?

- Default and leave eurozone
- Don't default
 - Debt / GDP of 120 percent in 2020
 - Have to lower debt or raise GDP

Good Choice for Greece?

- Default and leave eurozone
- Don't default
 - Debt / GDP 120 percent in 2020
 - Have to lower debt or raise GDP
- Think of it like the collapse of the Soviet Union
 - Drastic measures

Good Choice for Greece?

- Default and leave eurozone
- Don't default
 - Debt / GDP 120 percent in 2020
 - Have to lower debt or raise GDP
- Think of it like the collapse of the Soviet Union
 - Drastic measures
 - Lower tax rates and enforce payment
 - Privatization: give shares to taxpayers