

The Current Financial Crisis: Origins and Some Lessons*

Sel Dibooglu, Ph.D.

Professor of Economics

University of Missouri St. Louis

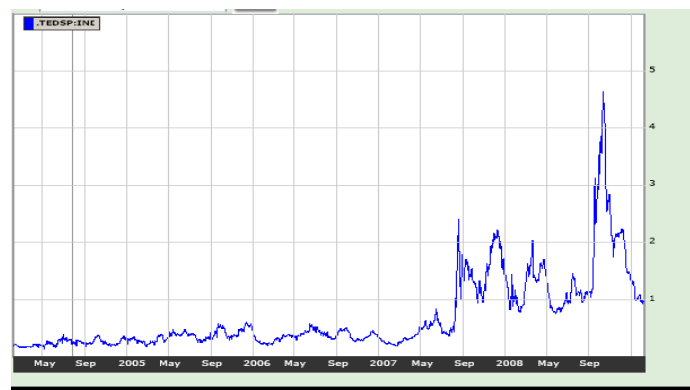


* To be presented at the National Association of County Collectors, Treasurers, and Finance Officers Conference, Washington, DC., March 6, 2009.

What Happened?

- The crisis began as a credit crunch in July 2007
 - Two Bear Stearns Hedge Funds Collapsed
 - The TED spread (difference between the three-month US T-bill and LIBOR) started to increase dramatically
 - an indicator of perceived credit risk in the general economy
 - elevated readings in the indicator point to an increased level of risk in the market, as investors flock to short term T-bills

The TED spread recent 5 years



Source: Bloomberg, retrieved February 7, 2009.
<http://www.bloomberg.com/apps/cbuilder?ticker1=.TEDSP%3AIND>

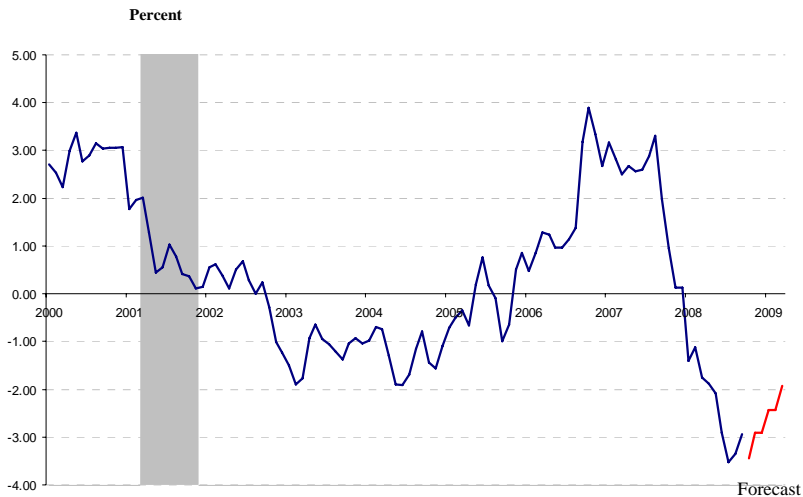
Overview

- Hundreds of billions of dollars worth mortgage related investments went sour
- Investment banks disappeared
 - In March 2008 the FED prevented Bear Stearns bankruptcy by assuming \$30 billion in liabilities and helped sell it to [JP Morgan Chase](#) for less than Bear's Manhattan skyscraper
 - On Sept. 7 2008, government-sponsored enterprises [Fannie Mae](#) and [Freddie Mac](#), were taken over by the Treasury
 - On September 14, 2008, [Bank of America](#) purchased [Merrill Lynch](#)
 - On September 15, 2008 [Lehman Brothers](#) filed for bankruptcy
 - On Sept. 16, the [American International Group](#) was bailed out by the FED \$85 billion deal.

Origins of the Crisis

- The root of the crisis is the boom-bust cycle of the 1990s
- To combat the recession in 2000-2001, the FED reduced interest rates sharply
- Lower interest rates made mortgages more affordable; the demand for homes exploded and home prices rose sharply
 - stock-wealth of the 1990s led people to buy bigger/better homes
 - the collapse of the stock bubble helped feed the US housing bubble

Target Fed Funds Rate minus Yr/Yr CPI Inflation



Source: Wheelock (2008)

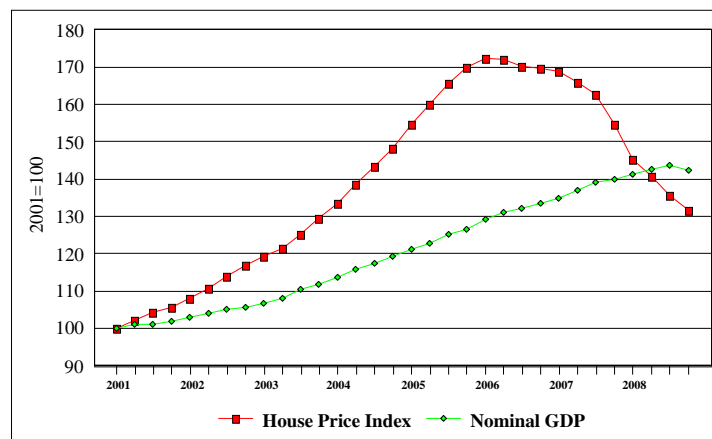
The pre-crisis phase: Global excess demand for safe assets

- For a while world has experienced a chronic shortage of financial assets.
 - savings needs by aging populations in Japan and Europe
 - the fast growth and global integration of high-saving economies
- US government and agency securities filled this demand as they were perceived to be safe.
- This was another cause for sustained decline in real interest rates in the US. (Ricardo Caballero, MIT)
- With foreign demand soaring, mortgage industry scrambled to find ways to satisfy the appetite for “credit enhanced” securities

Elements of the Housing Bubble

- Easy credit, low interest rates and optimism fueled speculation in the housing market
- Mortgage lenders followed lax standards in approving mortgages
 - Subprime loans: loans that do not meet prime underwriting guidelines (full documentation, certain income thresholds, 620 FICO score)
 - Alt-A loans: (alternative documentation) holds borrowers with good credit to different approval standards than traditional loans. Those applying for an Alt-A loan need not provide income verification or documentation of assets.
- Mortgage market innovations (“originate to distribute” – subprime loans and securitization)

House Prices and GDP Growth



Source: S&P Case-Shiller House Price Index (McGrawHill) GDP (St Louis FED)

Secondary Mortgage Market

- Mortgage securitization involves pooling of mortgages and issuing securities backed by the cash flows of these mortgages
- With *credit enhancements* and standardization, a mortgage-backed security (MBS) is also more liquid than an individual mortgage.
- "Mortgage-backed securities" were sold to investors around the world.
- Many foreign investors assumed these securities were backed by the full faith of the US government as **Fannie Mae** and **Freddie Mac** were chartered by Congress.
- This allowed Fannie and Freddie to borrow enormous sums of money using mortgages they hold as collateral.
- Credit default swaps (*the credit derivatives used to insure MBSs against failure*) and other over-the-counter derivatives reached over \$50+ trillion!

Every good thing must come to an end...

- Individuals and financial institutions increased their debt levels
- Boom in home construction
- House inventory exceeded demand precipitating decline in house values
- Borrowers with ARMs faced problems as they could not refinance
- Widespread defaults and foreclosures
 - Slowing of U.S. personal income growth
 - Rise in mortgage rates
 - Caused mortgage-backed securities to decline in value, resulting in large financial losses and uncertainty

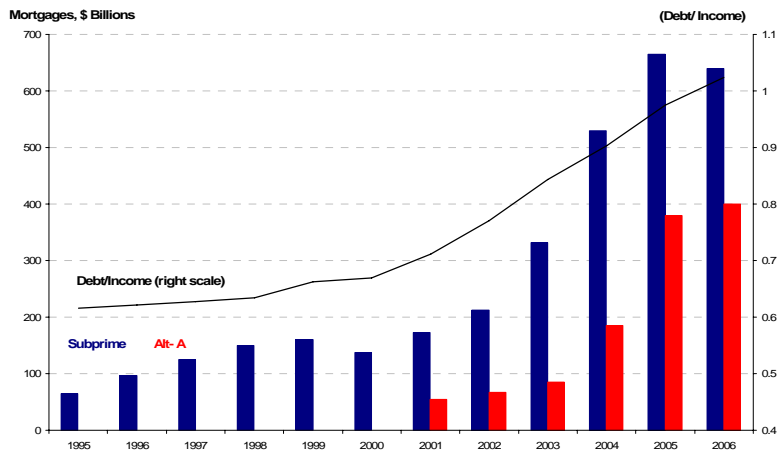
“Toxic Assets”

- When US housing market started to decline in 2007, this sent ripple effects beyond the U.S. and into the global economy.
- Because of defaults and foreclosures, US and international investors holding mortgage-backed securities began to incur serious losses.
- This included banks that issued the very MBSs.
- Before long, these securities became so unreliable that they were not being bought or sold and turned into so called “toxic assets”.
- Nobody knows their value, there is no market for them. Their value cannot be assessed with any degree of certainty because of their complexity.

How this Became a Crisis

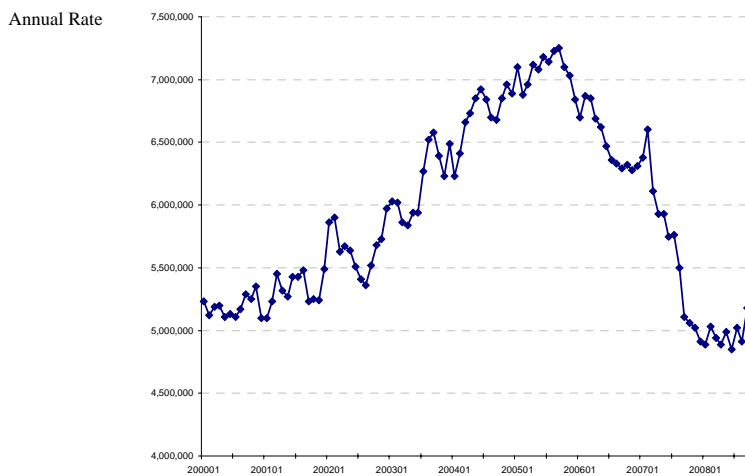
- “Originate to Distribute lending model
 - Principal/agent problems – originators often didn’t have skin in the game
 - Investors relied on ratings agencies that used backward-looking valuations and **had their own conflict of interest** (rating agencies were paid by investment banks and other firms that organize and sell structured securities to investors)
 - each link in the mortgage chain made a profit while passing any associated credit risk to the next link in the chain (**moral hazard**)
- Fannie Mae and Freddie Mac had conflicting objectives, were highly leveraged but lightly regulated.
- Uncertainty about the viability of counterparties caused risk spreads to increase and trading in financial markets to fall sharply” (David Wheelock, St Louis FED).

Large Increase in Non-Prime Mortgages, 1995 - 2006



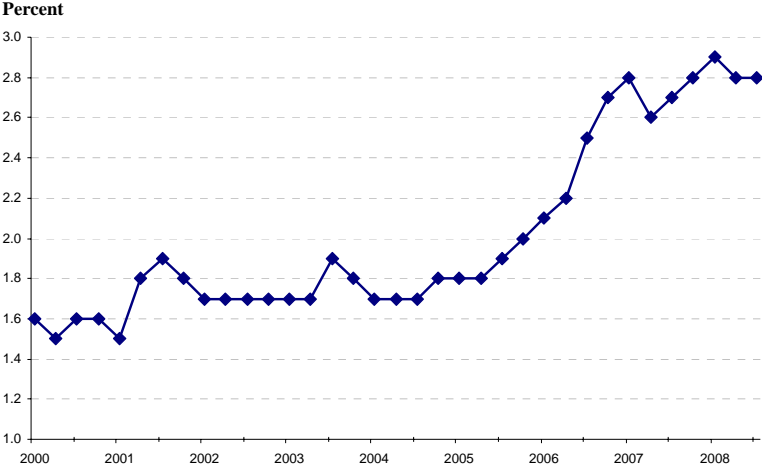
Source: Wheelock (2008)

Sales of Existing Homes



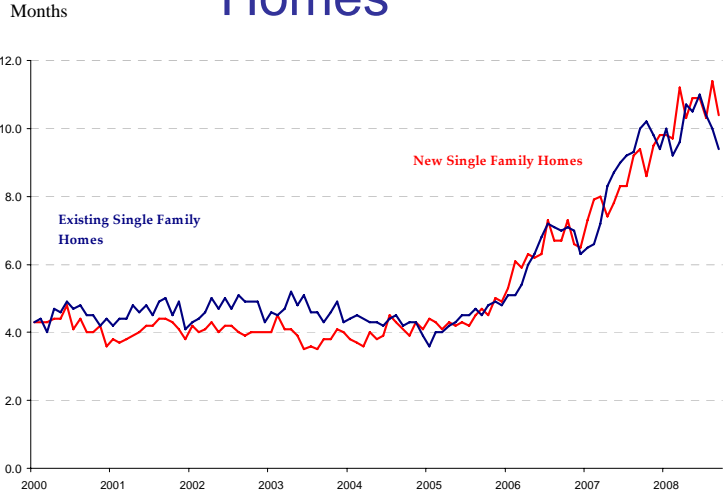
Source: Wheelock (2008), updated by the author.

Home Vacancy Rate



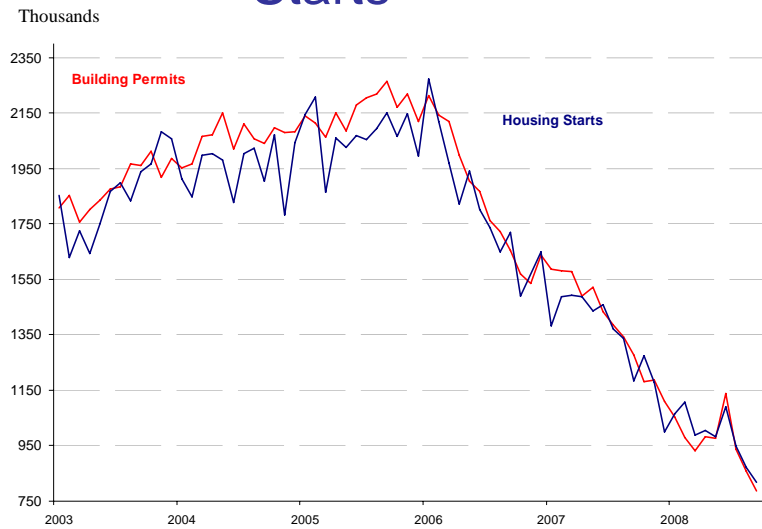
Source: Current Population Survey/Housing Vacancy Survey, Series H-111, Bureau of the Census, Washington DC 20233

Housing Inventory: Months Supply of New and Existing Single Family Homes



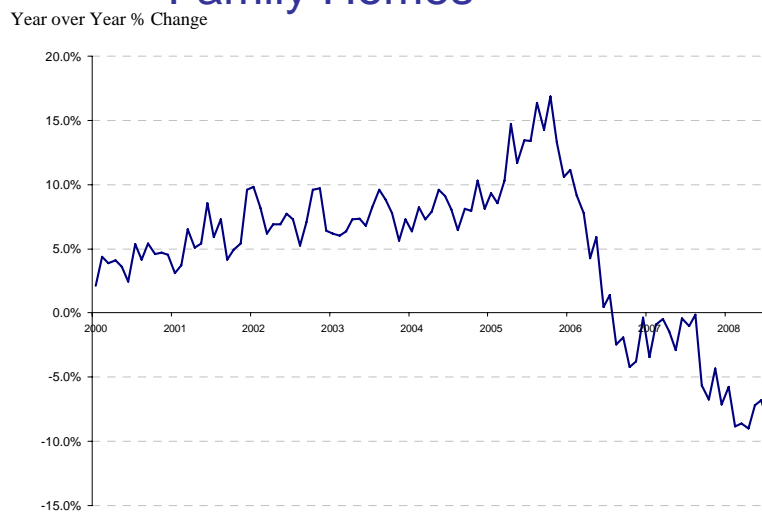
Source: Wheelock (2008)

U.S. Building Permits and Housing Starts



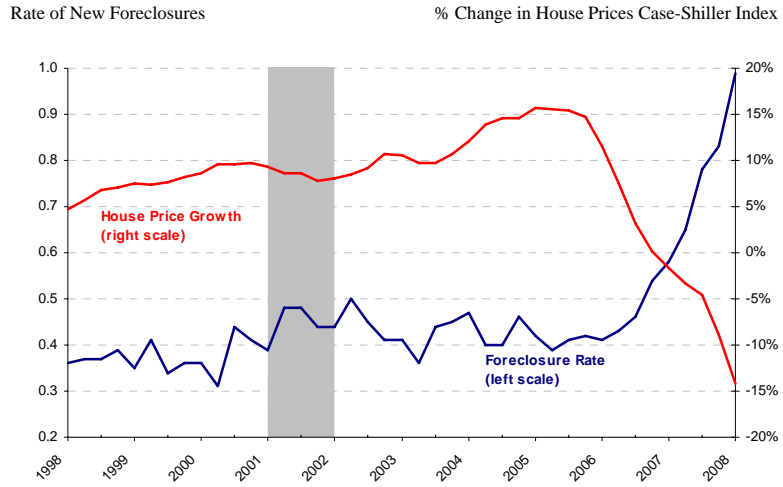
Source: Wheelock (2008)

Median Sales Price of Existing Single Family Homes



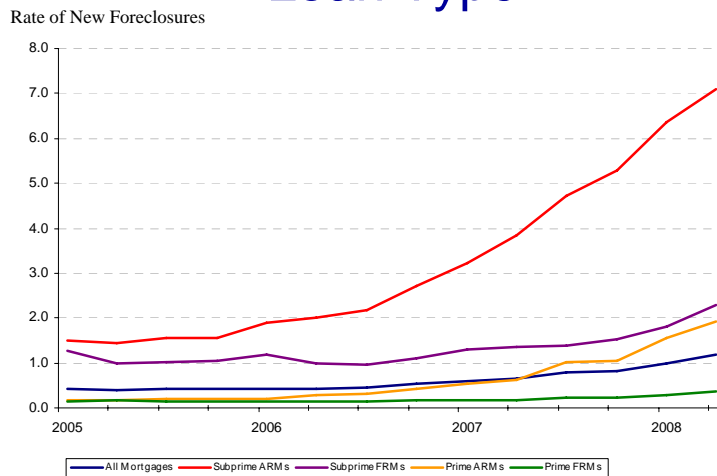
Source: Wheelock (2008)

House Prices and Foreclosure Rate



Source: Wheelock (2008)

U.S. Foreclosure Rates by Loan Type

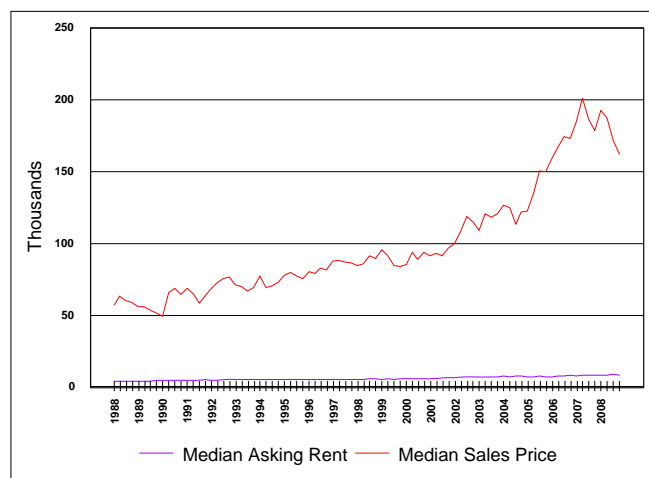


Source: Wheelock (2008)

Why did not policymakers and economists see this bubble?

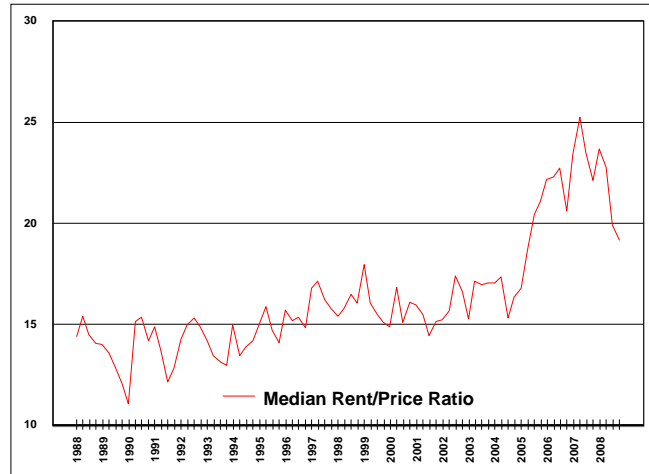
- Some economists did see a bubble forming but majority discounted it:
 - Income growth was high
 - Interest rates were low
- In retrospect though, house prices rose too much to be justified by GDP, rents, or median household income
 - Historical annual rent/house price is about 1/12 to 1/15.

House Prices Compared to Rent



Source: Current Population Survey/Housing Vacancy Survey, Bureau of the Census, Washington, DC 20233.

Price Rent Ratio Historical average = 12



Source: Current Population Survey/Housing Vacancy Survey, Bureau of the Census, Washington, DC 20233.

“Groupthink” and the desire to “fit in”

- Why majority of professionals did not see the housing bubble?
- Irving L. Janis: experts worry if they deviate too far from the consensus, they will be scorned, ridiculed, and ostracized.
- They self-censor personal doubts about the emerging group consensus
- Robert Shiller’s personal account “**Challenging the Crowd in Whispers, Not Shouts**” in the NY Times November 2, 2008.
 - Expert on asset pricing, Shiller was an adviser to the New York FED between 1990-2004 when stock market and housing bubbles went unchecked.
- SHILLER: “I felt the need to use restraint. While I warned about the bubbles I believed were developing in the stock and housing markets, I did so very gently, and felt vulnerable expressing such quirky views. Deviating too far from consensus leaves one feeling potentially ostracized from the group, with the risk that one may be terminated.”

Economy Wide Repercussions

- Recession in the US started in last Quarter of 2007; 3 million jobs were lost in 2008
- 598,000 Jobs Lost in January 2009 alone
- Unemployment 7.6% Worst Since 1974
- The economy shrank at a 3.8 percent pace the 4th Quarter 2008, the worst showing in a quarter-century
- Consumers and Businesses reduced spending

Economic Costs & Prospects

- **How costly are recessions?** The cumulative loss of a recession is typically about 3 percent of GDP (about \$500 billion in the US)
- **Are recessions associated with crunches and busts worse than other recessions?** Yes; longer on average, have much larger output losses than others. (S. Claessens A. Kose, M. Terrones, IMF)
- Many think the current recession in the U.S. will be the longest and most severe in the post war period.
- The U.S. economy is likely to contract thru 2009; cumulative output loss is likely to be around 5% and the recession will have lasted about two years.
- Some areas will be affected more than others depending on the nature of economic activity

Two contrasting views on what ails the financial system

- A panic has stricken financial markets
 - the prices of the so-called “toxic assets” have been driven below their long-run value because of fear/panic.
 - Governments should buy assets or insure banks against losses. This was the rationale for the original TARP. Liquidity will solve the problem.
- This is a problem of insolvency.
 - many financial institutions are insolvent: their assets are worth less than their liabilities.
 - restructure banks, liquidate zombie institutions at once

New proposals to restructure the banking system

- Temporarily nationalize the banks – the “N” word???
 - Paul Krugman, Alan Greenspan, Chris Dodd et al.
 - Monetary costs are low but sets a bad precedent and “un-American”
- Create new “good banks” with government provided capital, leaving old bad banks to perish
 - Willem Buiter, Joseph Stiglitz, Paul Romer, Martin Wolf
 - Avoids the problem of moral hazard
 - Avoids the problem of valuing “toxic assets”
 - Minimizes taxpayer losses
- Create a new “bad bank” to buy toxic assets
 - Taxpayer cost
 - rewards bank managers, shareholders and their lenders for risky behavior that got us into this mess
 - Goes against what Mr. Summers and Mr. Geithner warned Asians during the Asian financial crisis.

Impact on local government finance: the revenue side

- Defaults & foreclosures on properties reduce tax revenues because of defaults on tax payments
- Reduced property values mean reduced tax base
- Drop in house sales: real estate transfer taxes lower
- Reduced home values & portfolio values and associated wealth reduction make families cutback on spending
 - Reduced sales tax revenues
 - Targeted “sin tax” revenues, entertainment, hotel taxes suffer
- Recession & rising unemployment
 - Local income tax shortfalls
- Revenue shortfalls at state level: reduced transfers to cities and counties
 - Counties impacted more as they rely more on state transfers as compared to cities

Higher borrowing costs on local governments

- “Flight to quality” increased demand for treasuries at the expense of municipal bonds
- Institutional investors (hedge funds & property and casualty insurance companies) dumped munies to raise capital which raised borrowing costs
- The crisis reduced the credit rating of municipal bond insurers because they also insured mortgage backed securities
- As bond insurers suffered losses & reduced credit rating, the municipal issues they insured were downgraded raising their interest rates and hence borrowing costs
- The state of Maine could not float a \$50 million transportation **bond** (*Portland Press Herald*, Friday, September 26, 2008)
- In a letter, Feb. 26th 2009, Governor Paterson of NY asked Treasury Secretary Geithner to help protect local governments' ability to borrow: Financial Crisis has driven up costs to taxpayers
 - Asks government help for affordable bond insurance: provide capital for the municipal bond insurance market

Long term impact on local governments

- Impact on long term pension obligations
 - As markets suffered heavy losses, local government employer pension contributions will likely increase in the future to meet plan obligations
 - Governments that substantially invested in mortgage backed securities will suffer and have to make up for the losses
- Foreclosures create a *domino effect in the long run*: depreciation in property values, decreased business investments, lower tax revenues, which in turn affect the *quality of schools* and other services and decrease property values further

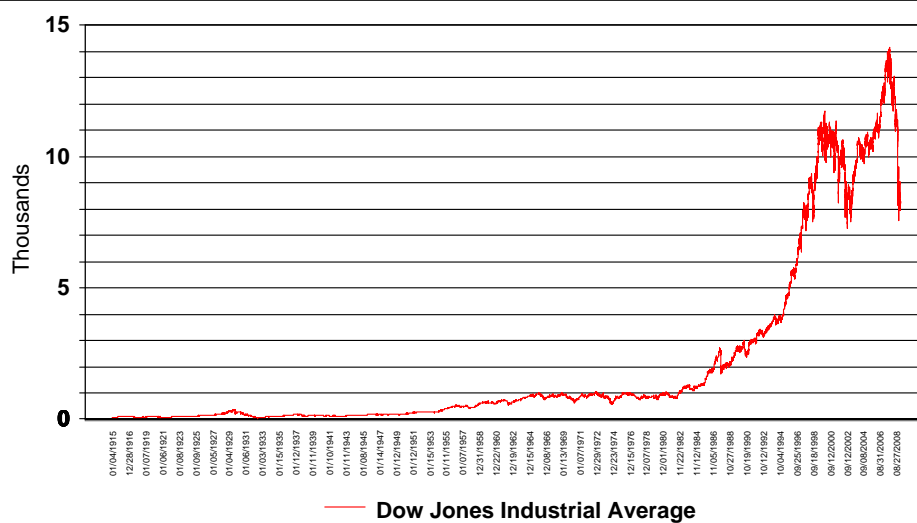
Spillover & Social Costs

- Property abandonment and foreclosures impose spillover costs
 - Reduce adjacent property values
 - Increase in police, fire, sanitary costs
 - Attract criminal activity, vandalism, trash/debris & raise fire risks requiring demolition
 - Nuisance abatement costs
- Broader social costs associated with unemployment, homelessness, crime, increased demand on the social safety net
- Disparities in lending and foreclosures
 - **Women, Low-income, and Minority Homeowners** have been principal targets for **subprime** loans and the ensuing foreclosures
- Also regional differences due to nature of economic activity: Regional assessments see **Fiscal Crisis Wiki** (<http://www.transformgov.org/FiscalCrisis.aspx?id=2128>)

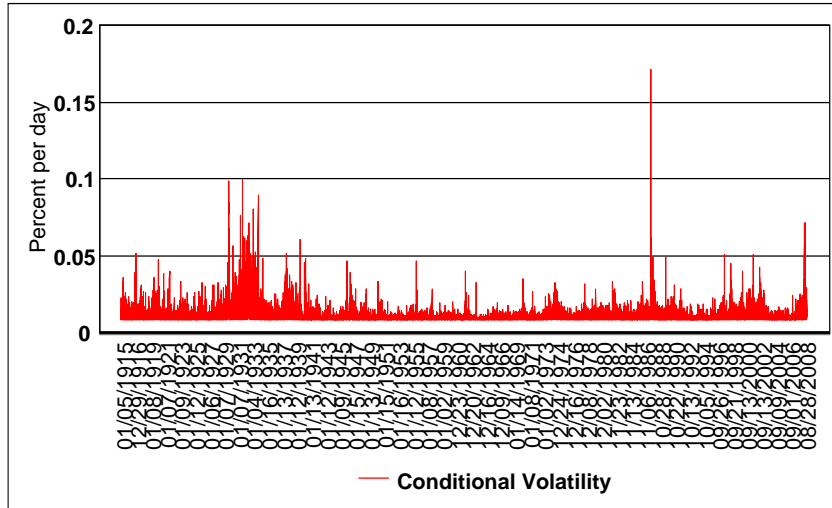
Implications for Investing

- In the short term asset prices change randomly
- Risk as measured by volatility is high
- Determine your time horizon
- Determine your risk tolerance
 - Try to find financial instruments that match your investment time horizon and risk tolerance

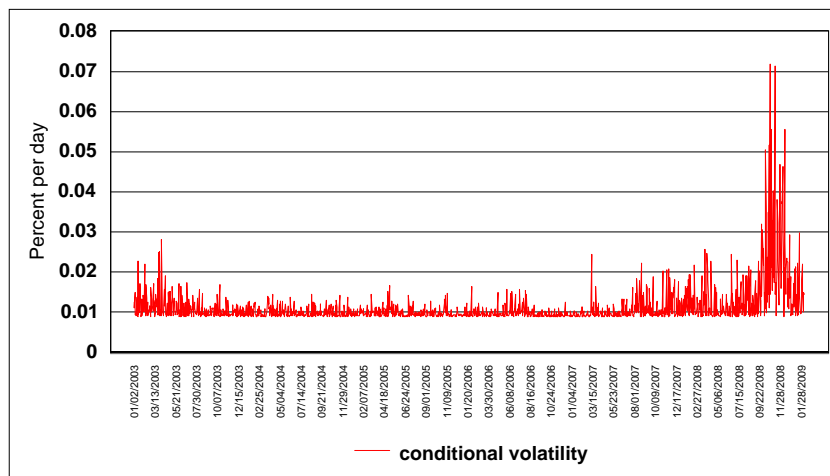
Dow Jones Industrial Average 1915-2009



Daily stock market volatility in a historical context: January 1915 – February 2009



Daily stock market volatility: January 2003 – February 2009



Safe investing

- Objectives of safe investments
 - preserve your principal
 - provide some interest income
- Investments that are considered safe
 - Treasury Securities
 - Bank Savings Accounts
 - CDs
 - Money Market Mutual Funds (now the principal is guaranteed since September '08)
 - Fixed Annuities (annuities are backed by the ability of the company to pay claims)

What should we pay attention to when investing in “safe” assets

- Inflation
 - Problematic for long term investments
- Maturity
 - Longer maturity means higher returns but you have to worry about inflation and cash flow issues
- Liquidity
- Tax issues

Cash Flow & Ladders

- **Bond Ladder to Meet Cash Flow Needs**
 - Buy bonds so that one bond matures each year for the X years, to meet cash flow needs. This would be a X year **bond ladder**.
 - In lieu of a bond ladder, you could create a CD ladder, with certificates of deposit maturing each year to meet cash flow needs.
 - Price both CD's and bonds to determine which would give you the highest yield
 - You could also use a fixed annuity, but annuities have some risk

Inflation

- Inflation is relevant in the long run
- Treasury Inflation-protected Securities
 - The bonds are available in 5-, 10-, and 20-year maturities.
 - TIPS offer yield above inflation and the principal adjusts semiannually as the CPI changes.
 - TIPS tend not to be highly correlated with other fixed-income securities, so they're a good vehicle for diversification
 - TIPS have tax disadvantages: you pay income taxes on inflation-adjusted gains before getting any of the inflation-adjusted money at maturity

Tax issues

- Some investments are tax deferred (I Savings Bonds) and some are exempt (Municipal Bonds)
- I-Savings Bonds offer inflation-protected & tax deferred returns.
 - These 30-year bonds
 - There are no commission costs
 - If redeemed before five years forfeit the three most recent months' interest, but after that there is no penalty at redemption
 - Have low rate of return

Summary

- The financial crisis was triggered when house prices began to decline and subprime mortgage defaults increased
- Subprime accounts are a small portion of loans but they account for good part of foreclosures
- The economy is in a protracted recession and the crisis has global dimensions
- Market volatility is high and we need to be cautious in our investments

Questions?