Subprime Mortgages and the Financial Mess: What in the Hell Happened?

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How is it possible that

- U.S. home prices have fallen 31% since 1Q 2006
  - 51% in Phoenix
  - 48% in Las Vegas
  - 45% in Miami
  - 40% in Los Angeles and San Diego
- Home mortgage foreclosures increased by 76% by the end of 2008 with 10% of all borrowers in foreclosure or default
- Unemployment has grown from 4.6% in mid 2006 to 8.1% in Feb. 2008
- The S&P 500 fell from 1,558 in Oct. 2007 to 683 in Mar. 2009, a decline of 56%
- Financial “failure” of
  - Bear Sterns
  - Merrill Lynch
  - Leman Brothers
  - AIG
  - Wachovia
  - Fannie Mae and Freddie Mac

How could a simple financial instrument like a home mortgage lead to the most severe economic contraction in the U.S. since the Great Depression?
What is a Subprime Mortgage?

- Credit status of the borrower
  - Prime, Near Prime (Alt-A), Subprime

- Characteristics of subprime loans
  - High loan-to-value
  - Weak credit score
  - Adjustable rate

- Risky for both borrower and lenders
  - Higher rates of default $\rightarrow$ Higher interest rates
Growth of Subprime Originations

Source: Inside Mortgage Finance
What Caused the Subprime Growth?

- Historically low interest rates at start of decade caused an increase in housing demand
- Rising house prices
  - Increases in the ratio of housing costs to income have made qualifying for conventional loans more difficult
  - More households financed using ARMs or with higher loan-to-value debt levels
- Increase in home equity loans
Housing Cost Compared to Income

Source: U.S. Census Bureau; National Association of Realtors
Economic Benefits to Borrowers

- Increased liquidity for borrowers with low credit
  - Low credit households have the ability to build equity
  - Low credit households have more options to access and utilize home equity. Home equity may be preferable to borrowers alternatives
    - credit cards
    - pay-day loans

- Increased homeownership rates
  - Expansion of subprime has increased homeownership rates for large groups who previous had more limited access to capital for home purchases
U.S. Homeownership Rates

Source: U.S. Census Bureau; Current Population Survey/Housing Vacancy Survey
What Went Wrong?

- Underestimation of subprime default risk
  - Housing prices always go up!
- Housing bubble in selected housing markets
  - California, Florida, Las Vegas, Phoenix
  - Speculation
- Tightening of monetary policy in 2004 leading to higher mortgage interest rates bursting bubble
- Subprime mortgage defaults
Subprime Mortgage Defaults

Percent of Loans 60 Days or More Past Due
Within Four Months of Origination

Source: LoanPerformance

- Subprime
- Prime
House Price Contagion

- Mortgage defaults grow
- Home prices fall
- Fire sales of housing

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How did mortgage defaults lead to downfall of major financial institutions?

Securitization
Mortgage Securitization Process

- **Subprime Originator**
  - Loans

- **Securitization Conduit**
  - **Mortgage Servicer**
    - Interest and Principal Payments

- **MBS**
  - AAA
  - AA
  - A
  - BBB
  - BB
  - B
  - First Loss / Equity Tranche

MBS tranches are typically purchased by institutional investors and part of the collateral underlying Collateralized Debt Obligations (CDOs) retained by the originator.
Growth of Mortgage Securitization

Source: Asset Backed Alert
Fundamental Financial Issues

- What is the value of the outstanding mortgage-backed securities?
  - need housing markets to settle to estimate default risk and value securities
  - additional recapitalization required?
- Credit default swaps and counterparty risk
  - AIG
  - formal trading market or regulate?
- “Too big to fail”
- Future compensation contracts for traders and financial executives