

The Origins of the Recent Financial Turmoil

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Five Keys to Understanding the Recent Credit Market Turmoil

- Maturity mismatch

- Long-term assets are financed using short-term liabilities – you can't avoid this

- Trust is a must

- People only lend if they believe the borrower will be *able* to repay the loan



Five Keys to Understanding the Recent Credit Market Turmoil

■ Illiquid vs. insolvent

- A firm is insolvent if its assets are worth less than all it owes; it is illiquid if it cannot make a current debt payment even though it is solvent
- Insolvent firms should be shut down; illiquid firms should get new loans and continue



Five Keys to Understanding the Recent Credit Market Turmoil

■ Transparency

- How do you tell who is insolvent and who is illiquid?

■ Leverage

- Financial firms often use high leverage ratios to magnify their returns
- This also magnifies risk



Leverage Example

- Suppose you have \$1 million cash that you invest
 - If the investment increases in value by 5% (\$50,000), you receive all the gain and make a 5% return on your investment
- Suppose instead that you “lever up” your investment by borrowing an additional \$24 million (a total investment of \$25 million)
 - Now the 5% return earns you \$1.25 million in profit, a 125% return on your 1 million equity investment



Leverage Example

- But what happens if your investment *falls* in value by 5%?
 - With a cash investment, you end up with \$950,000 (you lose 5%)
 - With a levered investment you end up losing \$1.25 million – You lose all of your equity investment and your lenders take a loss as well
- Small losses can make a highly-levered firm insolvent!



Traditional U.S. Housing Finance

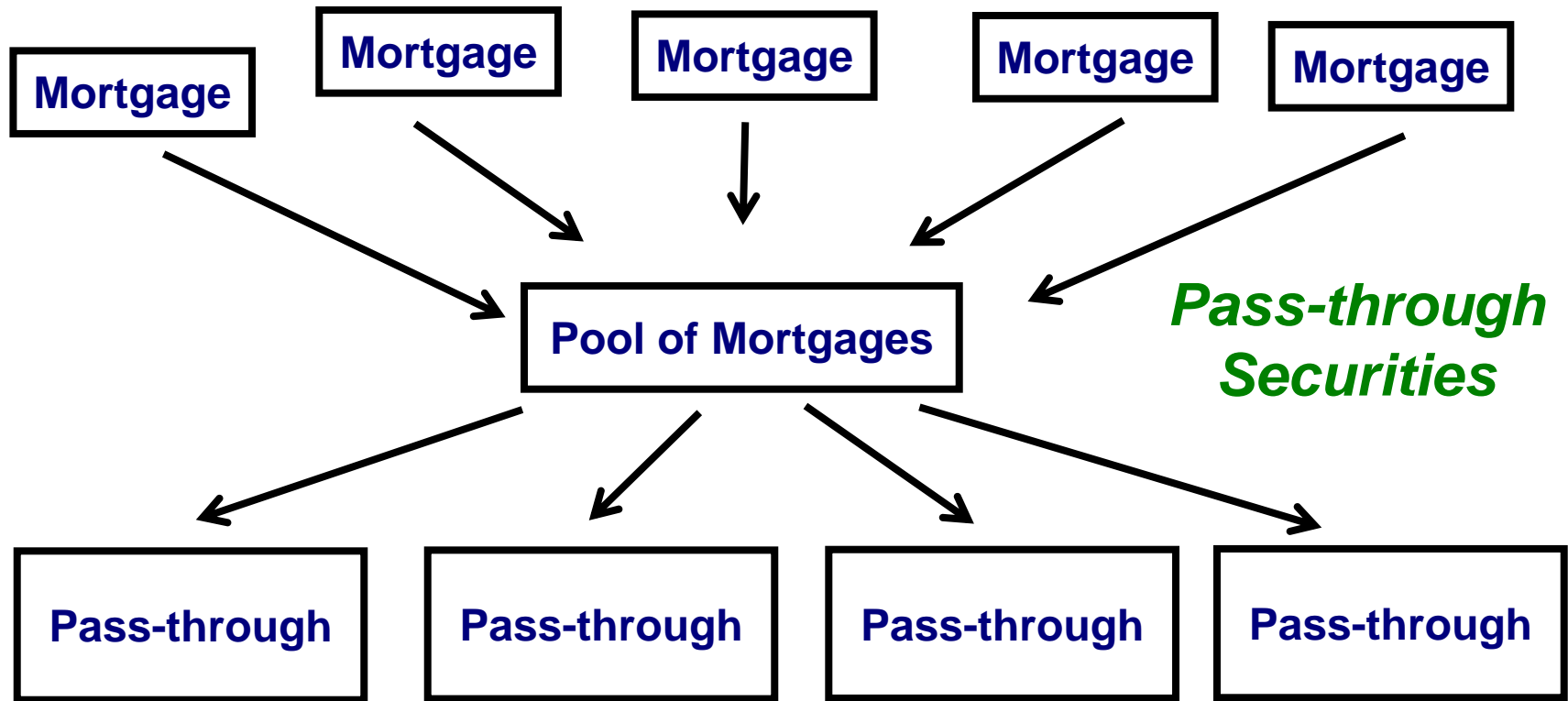
- Loans made by depository institutions
- Typical “prime” mortgage characteristics
 - Long-term (typically 30 years)
 - Fixed rates
 - Fully amortizing
 - 80% maximum LTV or PMI required
 - Good credit
 - Sufficient income



Modern U.S. Housing Finance

- Mortgages originated by mortgage banks and other lenders
- Whole loans are sold to Fannie Mae, Freddie Mac, or large financial institutions
 - These loans are packaged together into “pools” that are used as collateral for new debt securities

Securitization of Mortgages

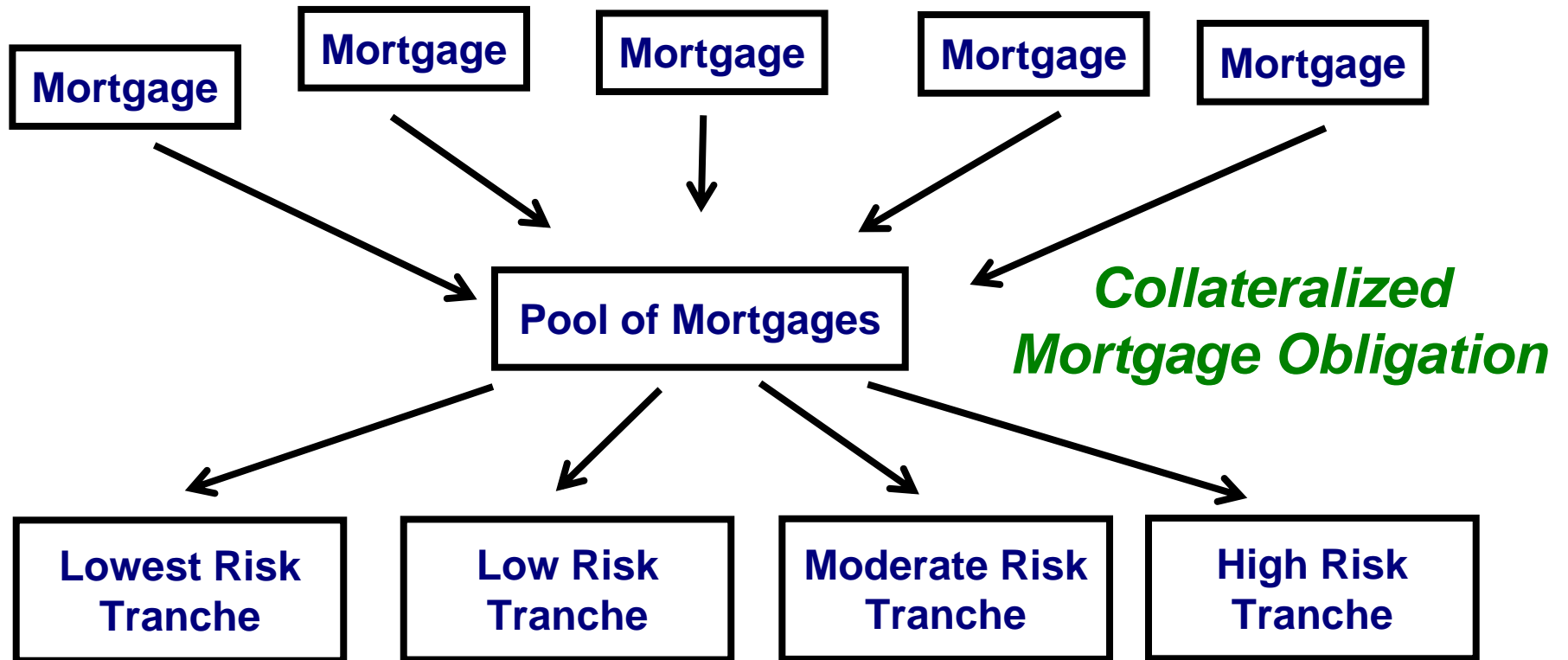




Benefits of Secondary Market

- The ability to sell mortgage loans on the secondary market has many benefits
 - Frees up funds when banks run out of deposits
 - Diversification
 - Liquidity
 - Lower cost of funding for borrowers
- One challenge is that many investors may not like the cash flow pattern that mortgages provide

Securitization of Mortgages





Subprime lending

- Originally, only prime loans were sold in secondary markets
- Over the past 10 years, new “subprime” products have been developed
 - 80-20 loans and other 2nd mortgages
 - Borrowers with poor credit histories
 - Low- and no-documentation loans



Prelude to a “Crisis”

- Subprime mortgage loans would be bundled into pools and used as collateral for mortgage-backed securities
 - Their popularity as investments is why so many alternative financing options (including zero-down mortgages) were available to home buyers
- These subprime MBSs were then often repackaged into collateralized debt obligations (CDOs)
 - This could sometimes be layered several levels deep



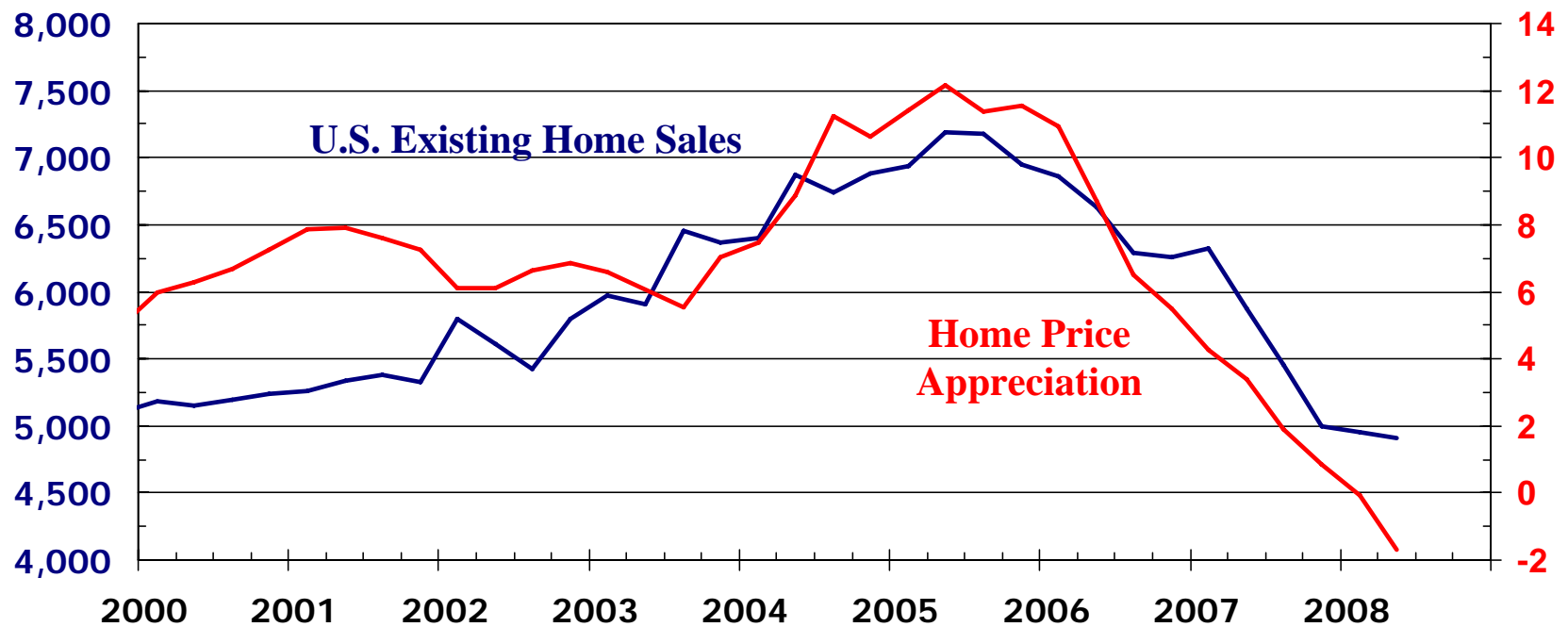
Prelude to a “Crisis”

- Wall Street investment banks and other firms would create structured investment vehicles (SIVs) to purchase these CDOs
 - Off-balance sheet investments
 - High leverage used to increase returns
 - Financed using short-term debt (commercial paper)
- These were great investments as long as home sales were strong and prices were rising

U.S. Existing Home Sales

Sales in 1,000s (SAAR)

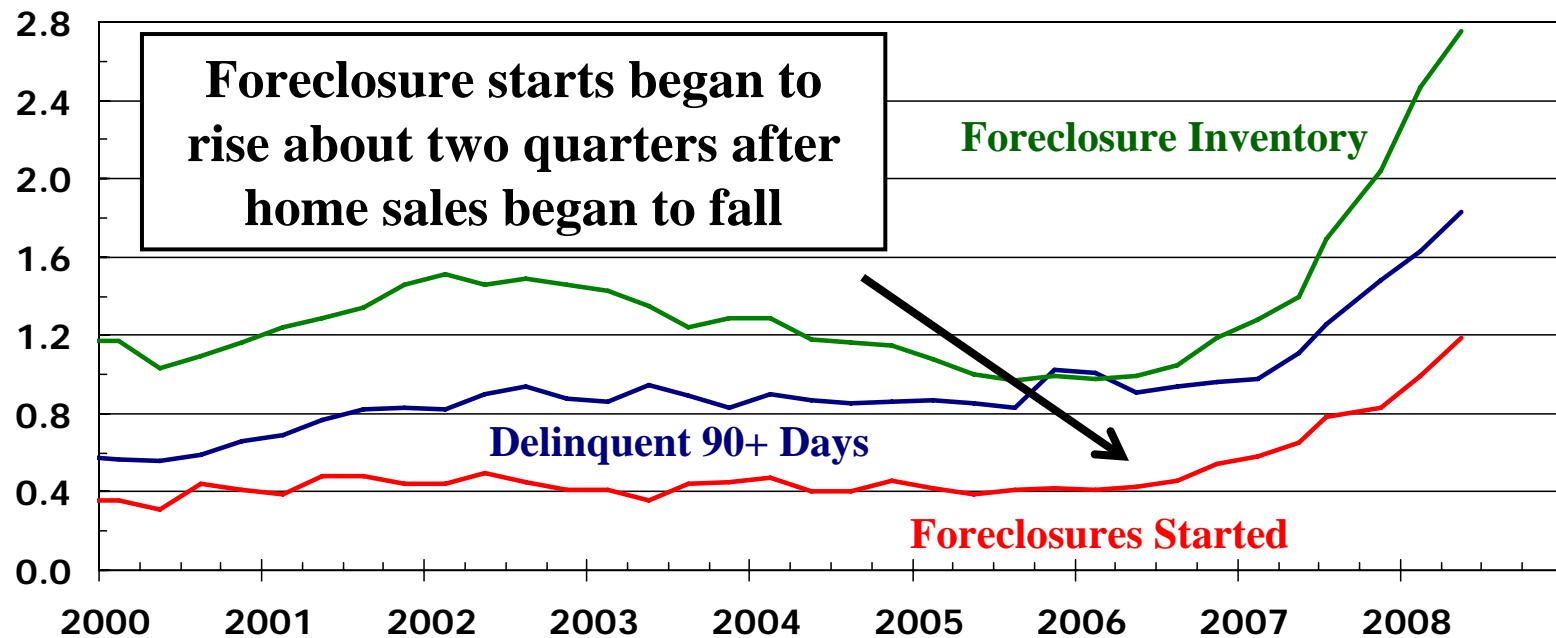
Year-over-year Percentage Change



Source: NAR; OFHEO

U.S. Foreclosures & Delinquencies

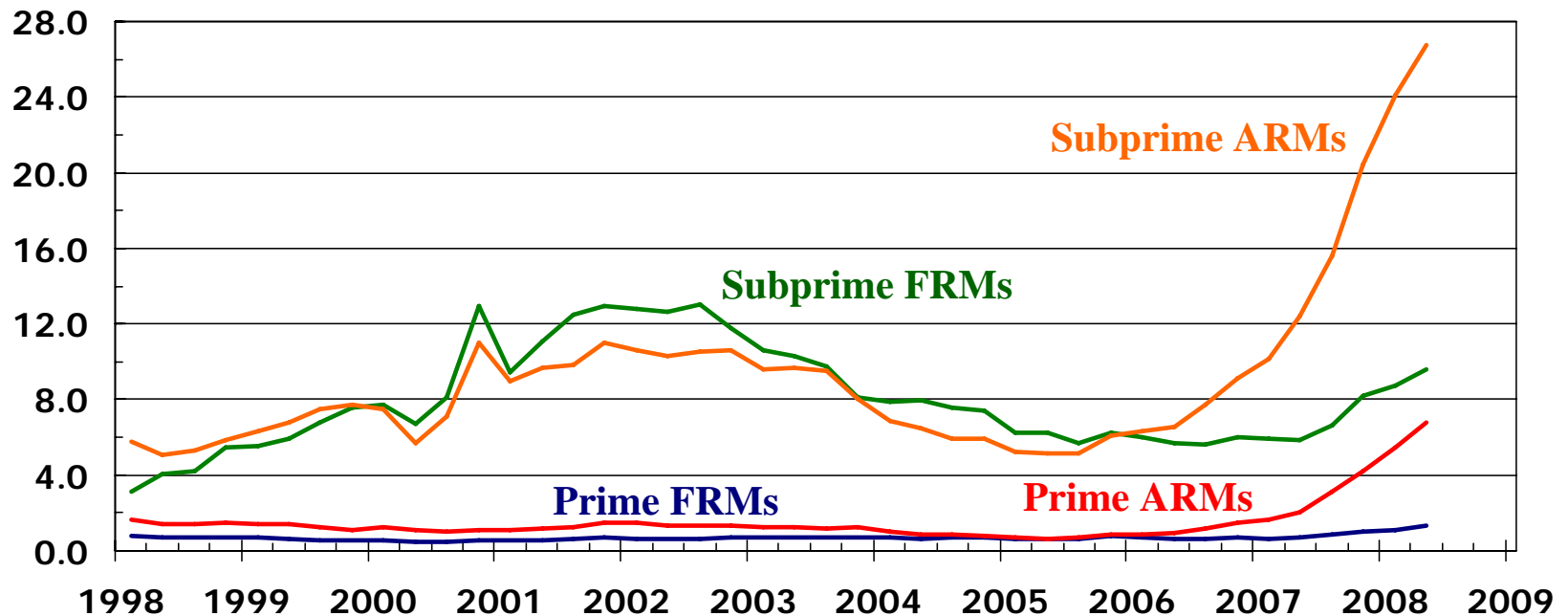
Percent of Loans Serviced



Source: MBA

US Severely Delinquent Loans

Percent of Loans Serviced



ARMs make up about 46% of subprime loans in the U.S. but only 17% of all prime loans

Source: MBA



So What Happened?

- As subprime loans starting going bad, many on Wall Street began to be worried about who was holding the “junk”
 - High leverage meant small defaults could lead to big losses
 - No transparency
 - Is someone needing money illiquid or insolvent?
 - What is their counter party risk?



So What Happened?

- Last March, Bear Stearns was the first financial firm to “fail”
- In the summer, concerns began to be raised about subprime lending done by Fannie Mae and Freddie Mac



So What Happened?

- In early September, the Treasury took over Fannie Mae and Freddie Mac, essentially wiping out the shareholders
 - This led to large losses by many financial firms, including Lehman Brothers
- Lehman filed for bankruptcy, causing AIG (among others) to be responsible for paying off on its credit default swaps
 - Once again, the Federal “bailout” resulted in large losses to the firm’s equity holders



So What Happened?

- The “straw that broke the camel’s back” was when the Reserve Primary Fund “broke the buck”
 - When money markets are no longer safe, all lending grinds to a halt
- Now the problem is a complete lack of confidence in everyone
 - Global in scale
 - Much broader than simply subprime mortgage loans

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