2008 STOCK MARKET COLLAPSE

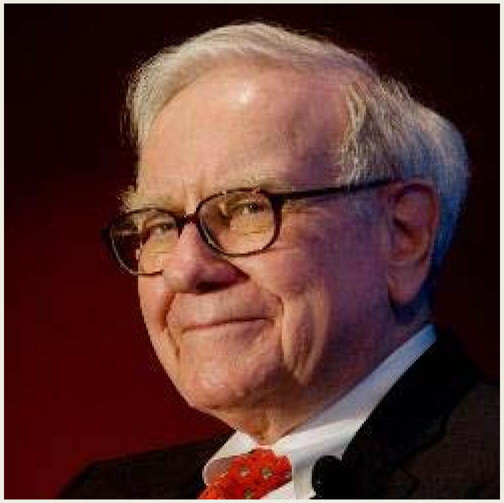
A FINACIAL INSTITUTION PERSECTIVE

Will Pickerign

QUOTE

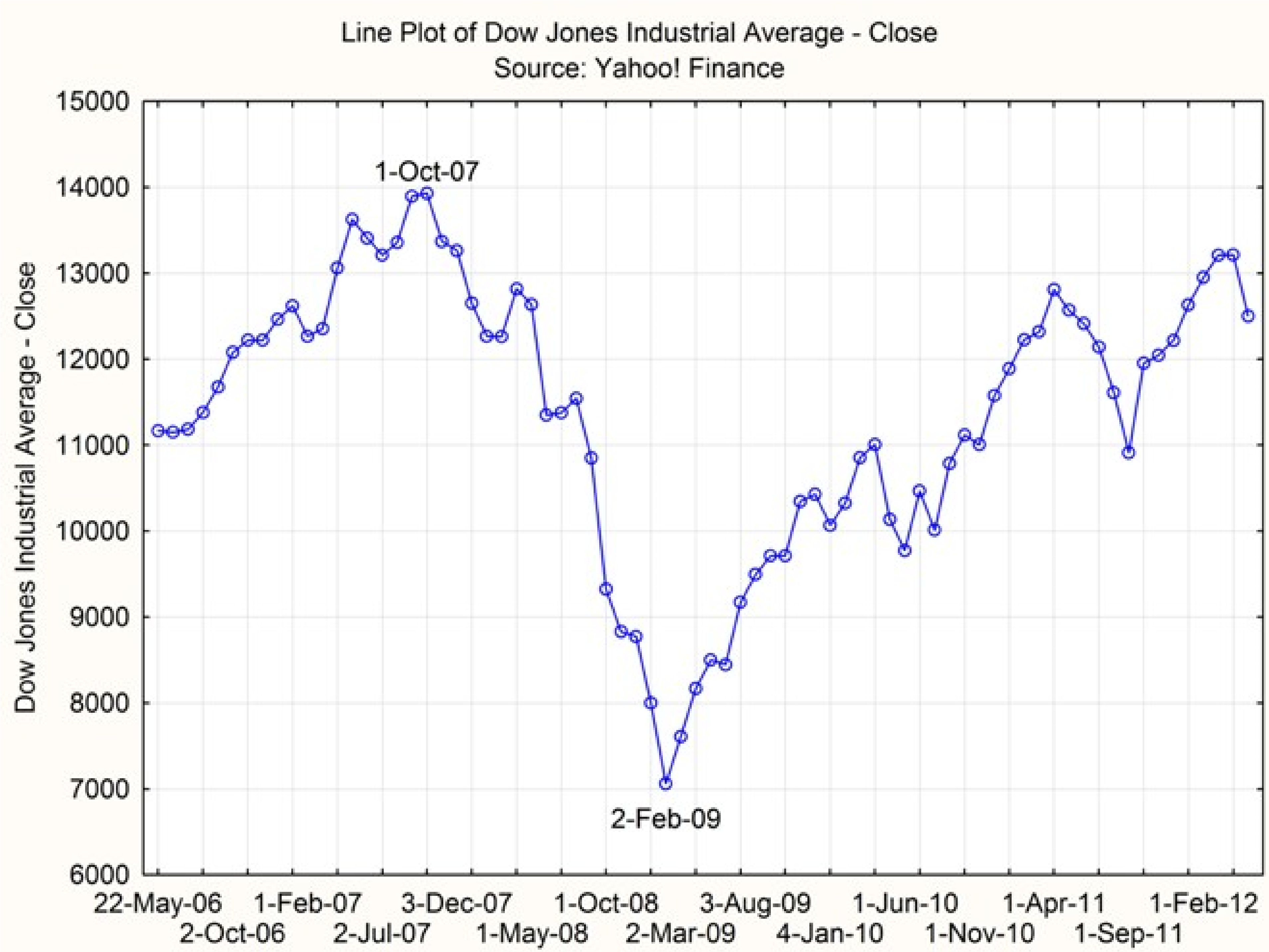
"In one way, I'm Sympathetic to the institutional reluctance to face the music…"

- Warren Buffet (Fortune 8/16/2007)



RECAP OF THE CRASH

- October 9th, 2007: Dow Jones Industrial Average hit its all-time high closing at 14,164.43
- March 5th, 2009: it had fallen more than 50% to 6,594.44
- 2nd largest stock market crash in history
- Largest was the Great Depression with a 90% hit over 3 years
- However, 2008 only took 8 months


Line Plot of Dow Jones Industrial Average - Close
Source: Yahoo! Finance
Dow Jones Industrial Average - Close
15000
14000
13000
12000
11000
10000
9000
8000
7000
6000
1-Oct-07
2-Feb-09
22-May-06
2-Oct-06
1-Feb-07
2-Jul-07
3-Dec-07
1-May-08
1-Oct-08
2-Mar-09
3-Aug-09
4-Jan-10
1-Jun-10
1-Nov-10
1-Apr-11
1-Sep-11
1-Feb-12

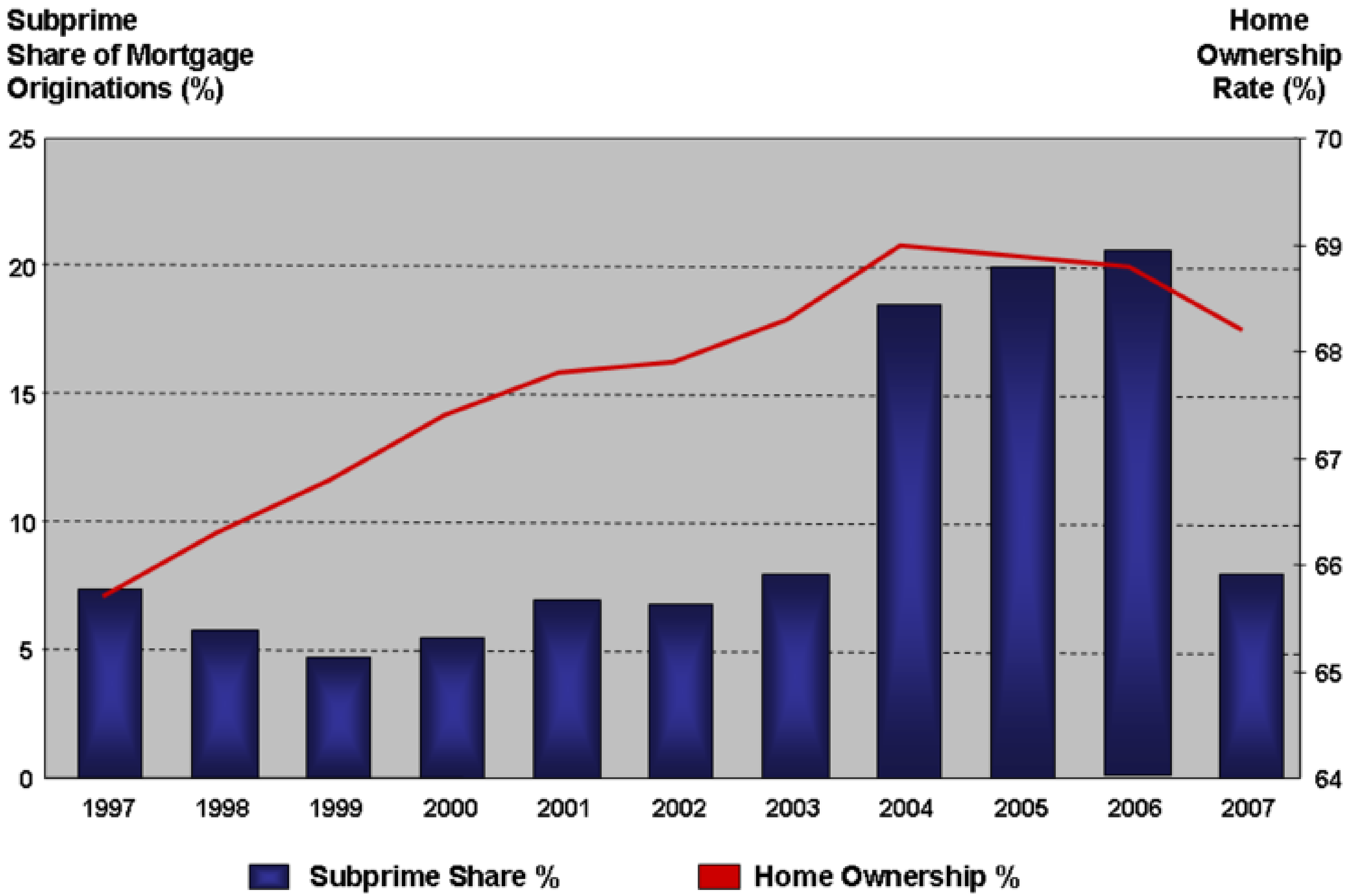
HOW DID WE GET HERE?

- Subprime lending
- Growth of the housing bubble
- Financial innovation
- Deregulation
- Over-leveraging

SUBPRIME LENDING

- Strong competition between mortgage lenders
- Eased underwriting to accept riskier borrowers
- Government Sponsored Enterprises (GSEs) such as Fannie Mae and Freddie Mac relaxed relaxed ratings to catch up to private lenders
- Freddie Mac's use of easy-to-qualify automated underwriting and appraisal systems

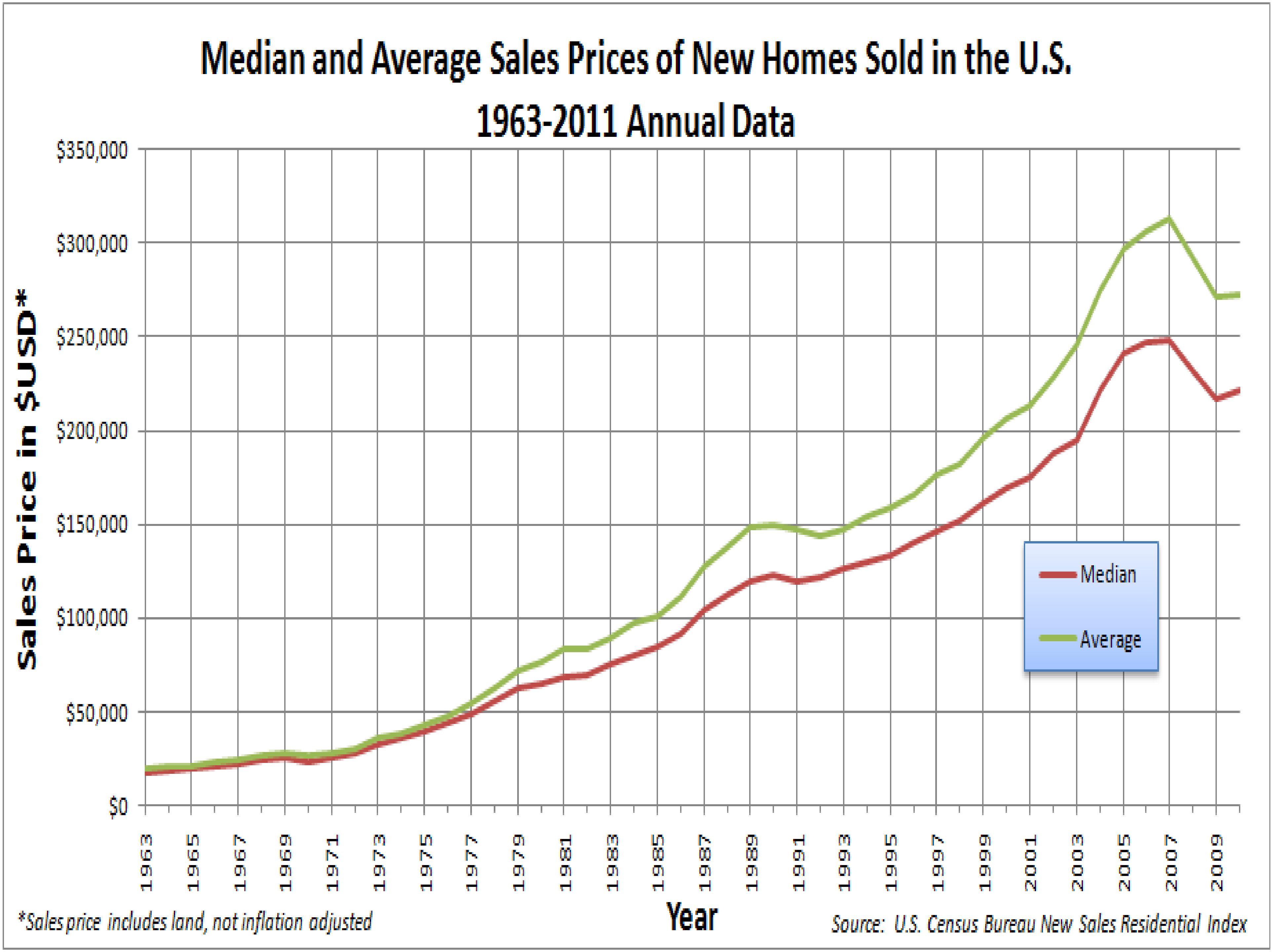
U.S. Subprime Lending Expanded Significantly 2004-2006



Sources: U.S. Census Bureau; Harvard University- State of the Nation's Housing Report 2008

GROWTH OF THE HOUSING BUBBLE

- Between 1998 and 2006, the price of the typical American house increased by 124%
- Refinancing of homes
- “Giant Pool” of money in mortgage market
- No safe income generating investments


Median and Average Sales Prices of New Homes Sold in the U.S.
1963-2011 Annual Data
Sales Price in $USD*
$350,000
$300,000
$250,000
$200,000
$150,000
$100,000
$50,000
$0
1963
1965
1967
1969
1971
1973
1975
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
Median
Average
Year
*Sales price includes land, not inflation adjusted
Source: U.S. Census Bureau New Sales Residential Index

FINANCIAL INNOVATION

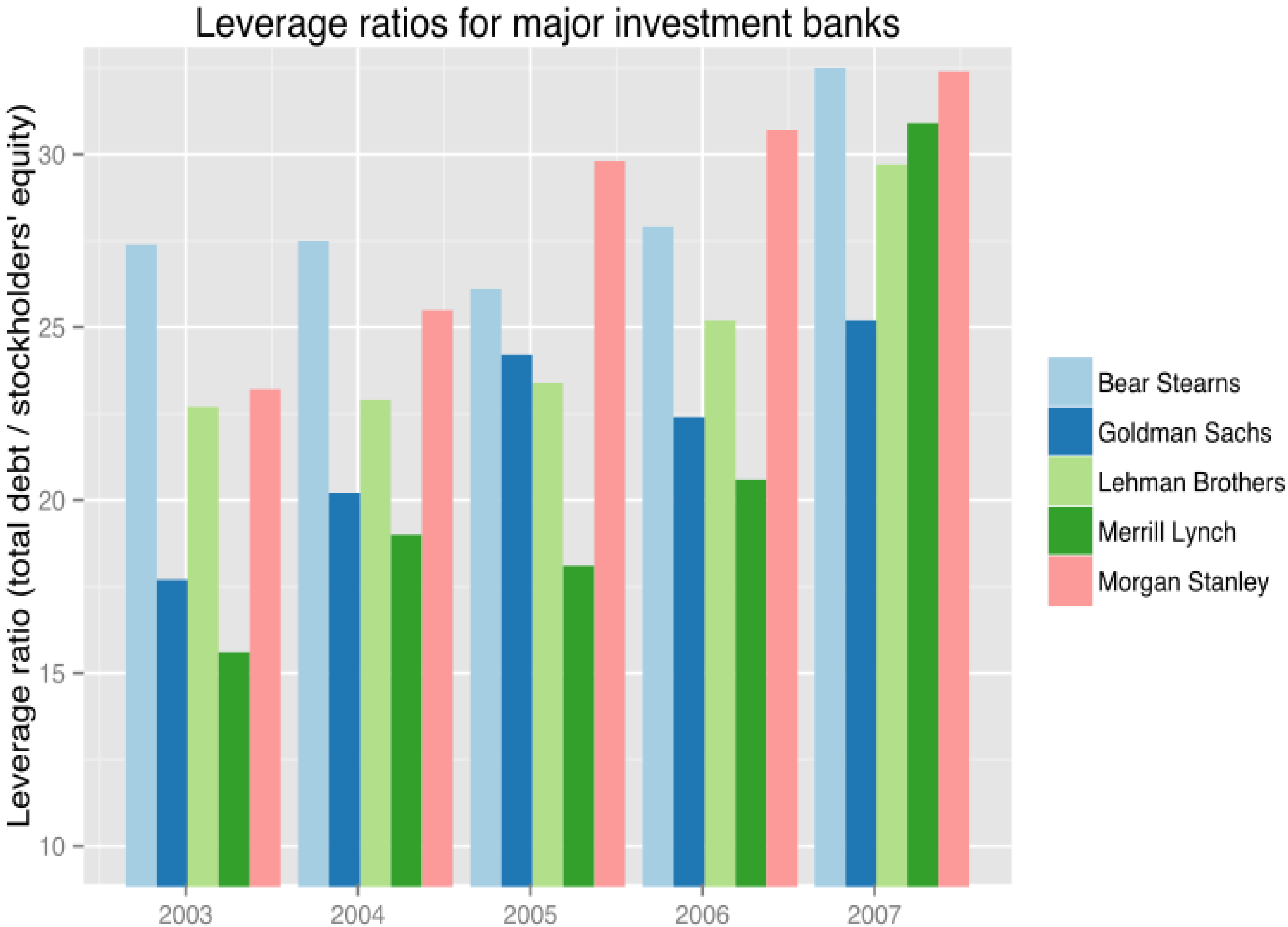
- To meet the new demand financial institutions created new products
- Securitization
- Mortgage-backed securities (MBS)
- Collateralized debt obligations (CDO)

DEREGULATION

- Regulation did not keep pace with financial innovation
- New products included securitization and derivatives that have never been seen before in the market
- Jimmy Carter’s Depository Institutions Deregulation and Monetary Control Act
- Bill Clinton’s Gramm-Leach-Bliley Act
- SEC’s net capital rule
- Shadow banking systems

OVER-LEVERAGING

- Investment banks increased their riskiness through leveraging
- Off-balance sheet securitization and derivatives
- Increasingly vulnerable to losses
- Vulnerability increased the economic downturn
- Resulted in government bailout


Leverage ratios for major investment banks
Leverage ratio (total debt / stockholders' equity)
30
25
20
15
10
2003
2004
2005
2006
2007
Bear Stearns
Goldman Sachs
Lehman Brothers
Merrill Lynch
Morgan Stanley

KEY FINANCIAL INSTITUTIONS

- Bear Stearns
- Lehman Brothers

BEAR STEARNS

- Global investment bank focused on capital markets, wealth management, and global clearing
- Former CEO: Alan Schwartz
- Major shareholders as of December 2007: Barrow Hanley Mewhinney & Stauss, Joseph C. Lewis, Morgan Stanley
- April 2005 Bear Stearns was the 7th-largest securities firms in terms of total capital

BEAR STEARNS

- High usage of derivatives and leverage
- \$11.1 billion supported \$395 billion in assets
- Leverage ratio of 35.6 dampened consumer confidence
- High use of securitized asset-backed securities (MBS, CDO)
- July 16th 2007, Bear Stearns disclosed two subprime hedge funds
- August 1st, 2007 investors sued Bear Stearns

BEAR STEARNS

- March 14th, 2008: Federal Reserve Bank of New York agreed to $25 billion loan, however the bailout was revoked
- March 16th, 2008: Bear Stearns signed a merger with JP Morgan chase
- Stock swap was $2 a share (less than 7% of Bear Stearns' market value 2 days earlier)
- "Bear Stearns collapse was due to a lack of confidence, not a lack of capital"

  -Christopher Cox SEC Chairman

LEHMAN BROTHERS

- Global financial services firm focusing on investment banking, private equity, private banking, and equity and fixed income sales and trading
- Former CEO: Dick Fuld
- In 2008 Lehman Brothers was the 4th largest investment bank in the U.S.

LEHMAN BROTHERS

- Significant amount of funds was tied to housing making them vulnerable to the market downturn
- Leverage ratio went from 24:1 in 2003 to 31:1 in 2007
- Did not have sufficient capital which led to illiquid
- 2007 closed its subprime lender, BNC Mortgage
- 2008 Lehman faced an unprecedented because of positions in subprime and lower-rated mortgage tranches
- 2nd quarter in 2008 Lehman reported a $2.8 billion loss and sold $6 billion in assets
- First half of 2008 Lehman stock value loss of 73%

LEHMAN BROTHERS

- September 13th, 2008 FRB of New York called meeting in which Lehman reported selling to Bank of America and Barclays
- Barclays and Bank of America ultimately declined
- September 15th, 2008 Lehman filed for Chapter 11 bankruptcy protection
- Lehman Brothers cited $639 billion in assets
- Largest bankruptcy in American history

NEW REGULATIONS

- May 20th, 2010 Dodd-Frank Wall Street Reform Act passed
- Regulate credit cards, loans and mortgages
- Oversee wall street
- Stop banks from gambling
- Regulate derivatives
- Bring hedge funds into the light
- Oversee credit ratings
- Supervise insurance companies
- Reform the federal reserve

WHAT WE HAVE LEARNED

- Real Estate is an incomplete market
- Leverage is risky
- Liquidity drives perception
- Underwriting matters
- Regulation needs to match innovation
- “Too big to fail” is too big

QUESTIONS