The World's Financial Crisis

Ludwig Chincarini

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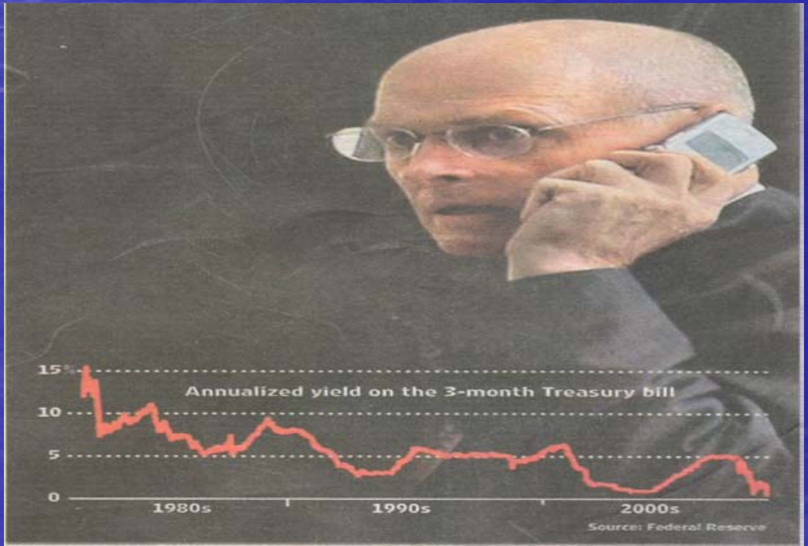
Pomona College, 8 PM



Outline

1. Origins
2. The Investment Banks
3. The Regulators
4. The Future

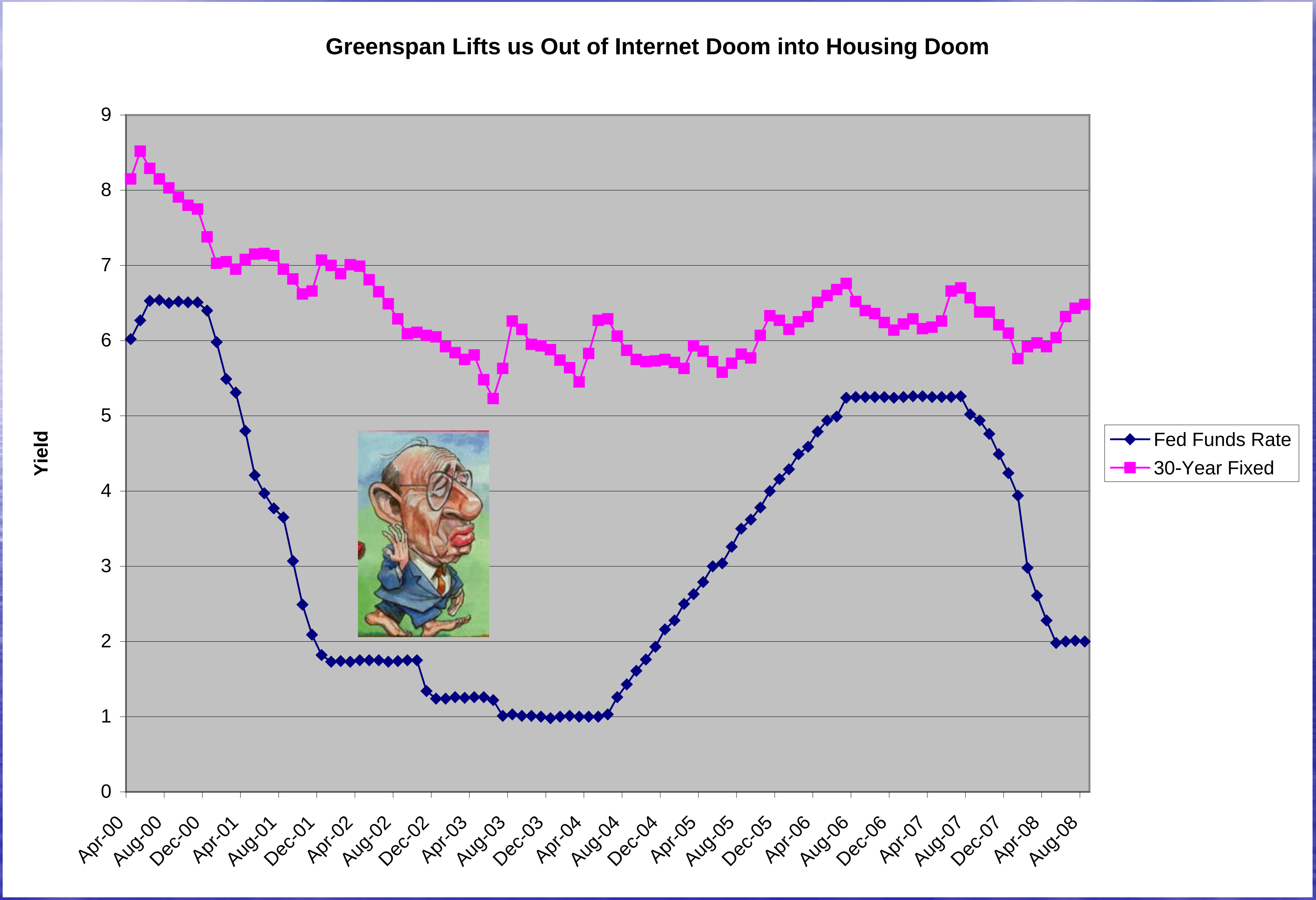
1. The Origins

- In 1999, housing market looks attractive.
- In 2001 after Internet bust, Fed eases money supply and mortgage rates go down...housing becomes attractive
- Con-artist realtors sprout out everywhere
- Sell, sell sell
- Banks devise clever insurance packages that enable people to meet monthly payments (e.g. ARMS, GPMs, and nothing down)
- Ignorant people get caught in frenzy and the buy mania is on [story of HR friend]
- Fannie and Freddie never buy mortgages of low quality (e.g. with no down payment), but begin to do so, with the defaults covered by insurance companies

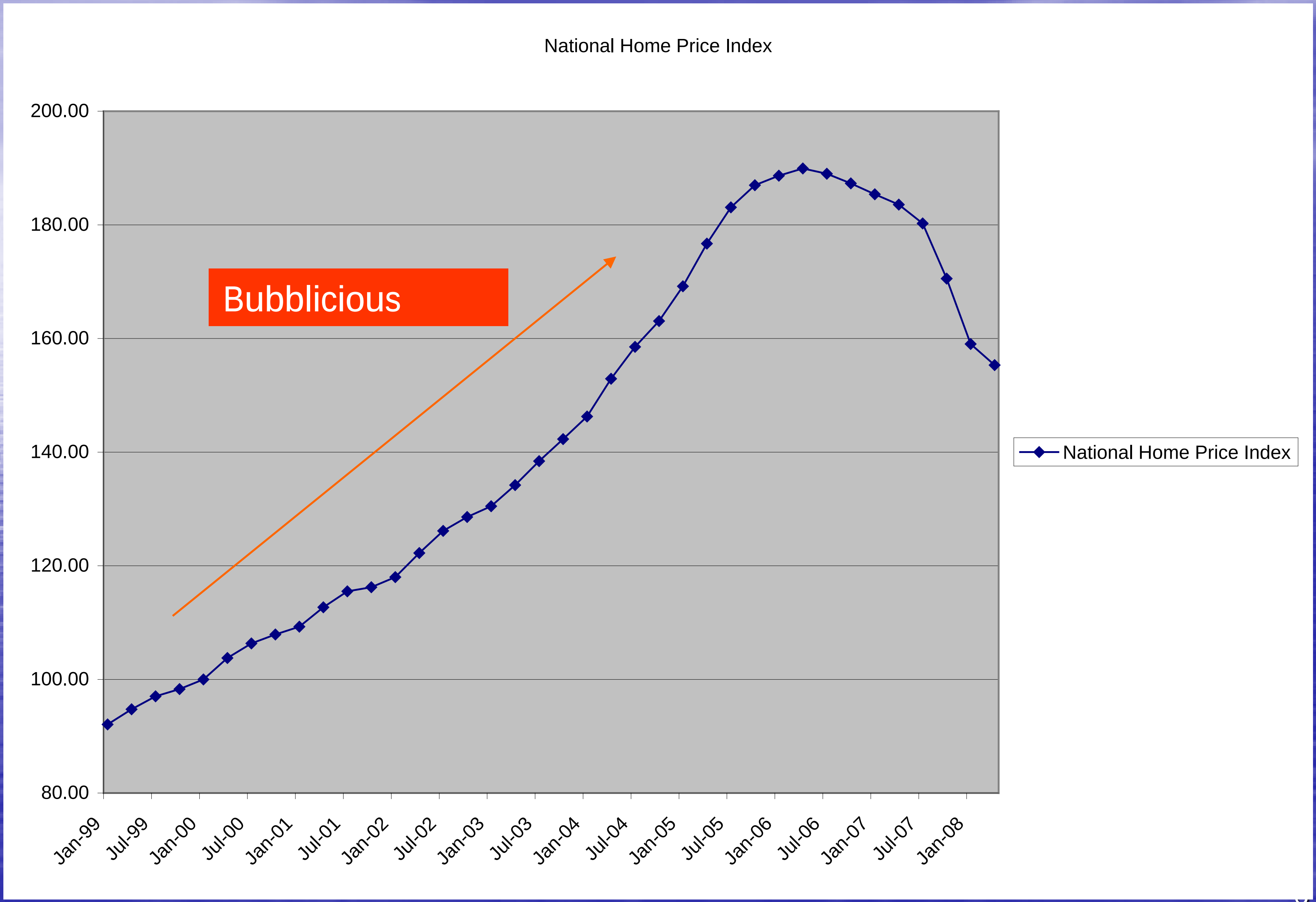
1. The Origins

- Investment banks become buyers of CDOs and MBOs which are notes backed by mortgages of all types, including sub-prime.
- Banks buy because YIELDS are attractive and so can borrow at low rates and invest at higher rates
- Fundamental Problem: Housing Prices are too high and people buying the houses on the clever schemes really can't afford them
- Market continues to explode with prices going ever so high
- Now, banks are involved, FRE and FNM involved, and investment banks and insurance companies are involved.
- Why? Show me the money!

1. The Origins

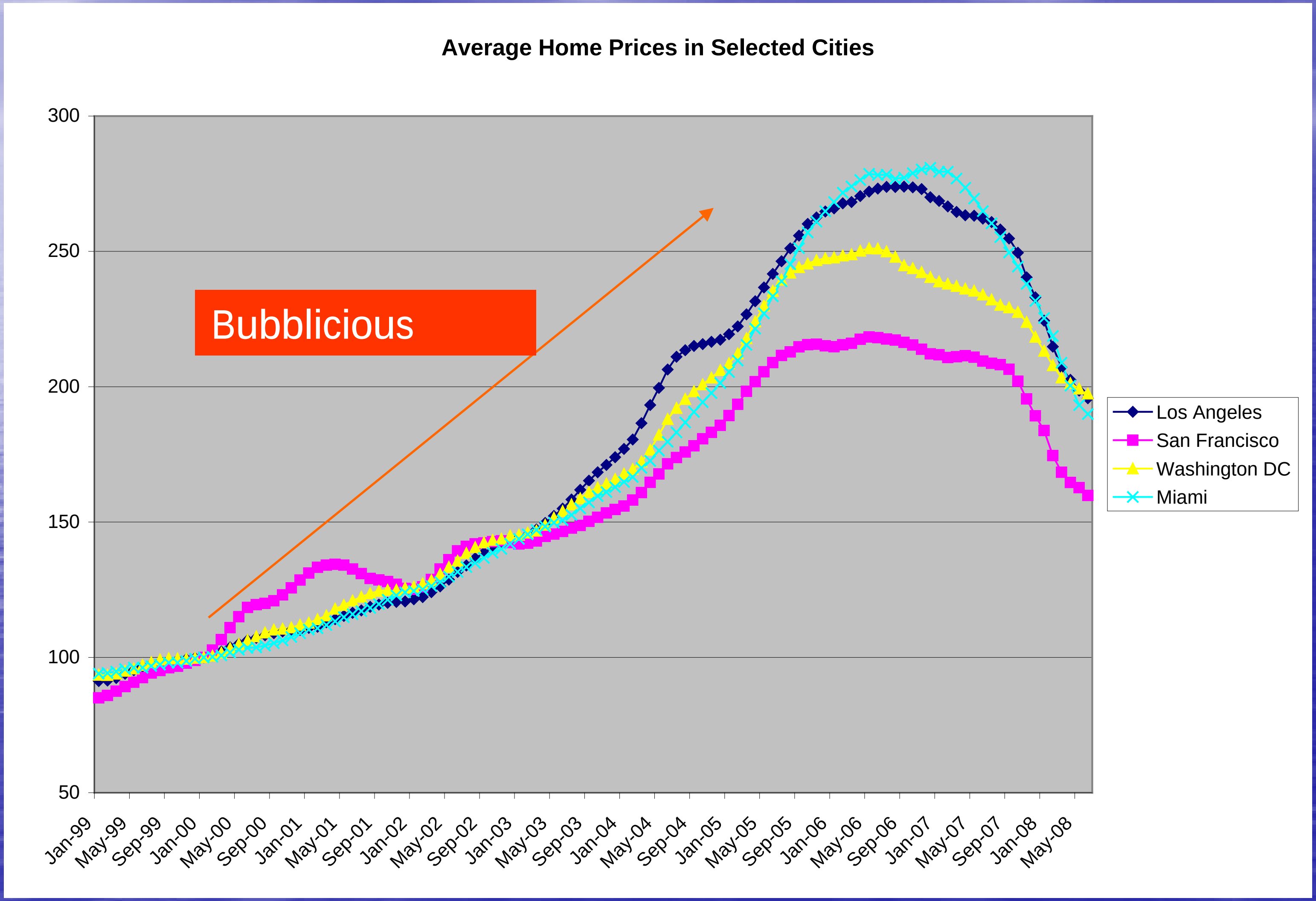


1. The Origins



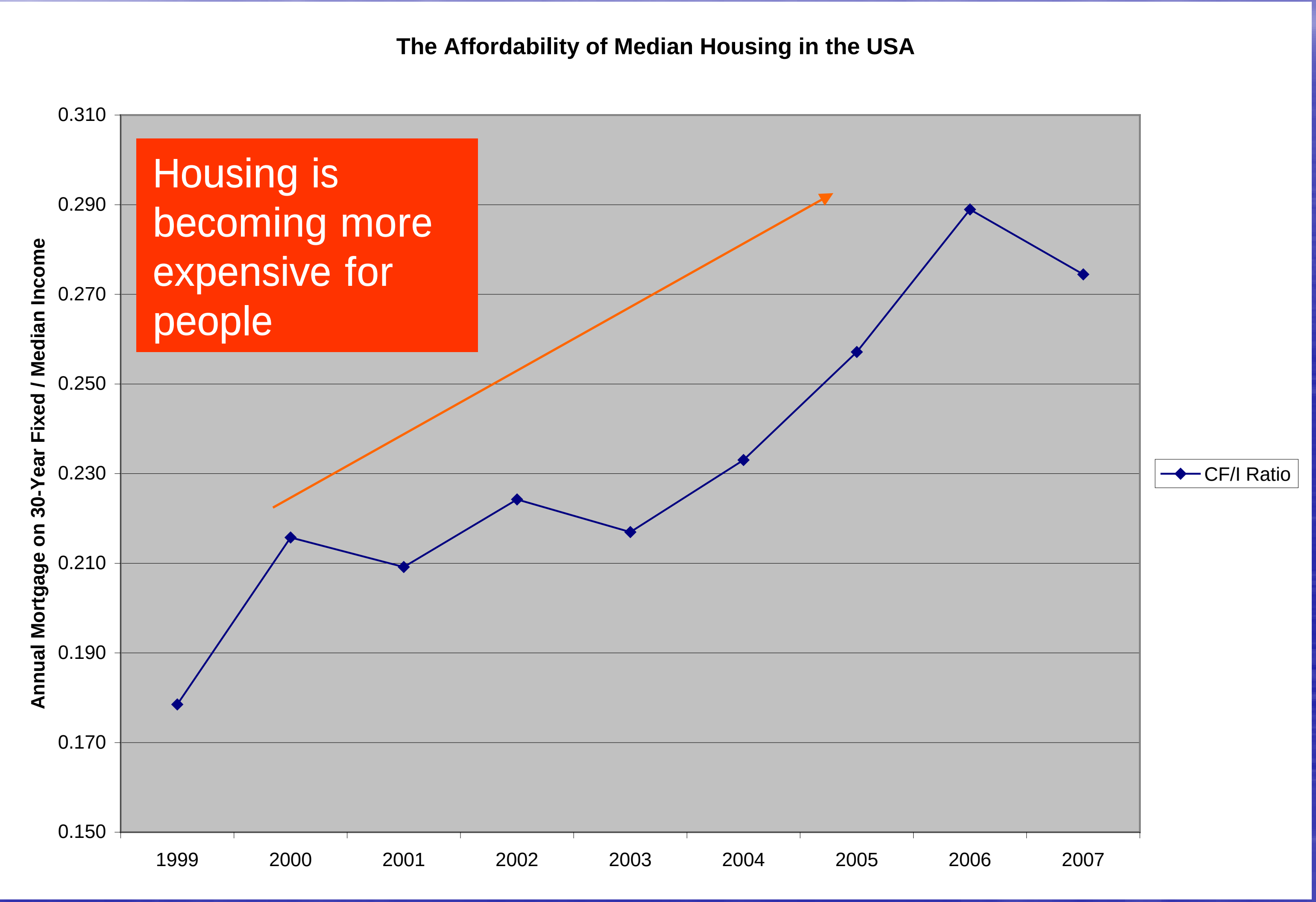
1. The Origins

- Worst for Individual Large Metro Areas



1. The Origins

- Need to consider housing prices as a proportion of individual's income
- Thus, we look at the ratio of the annual cost of a 30-year fixed rate mortgage to median US income



1. The Origins

- In most large metropolitan areas, renting is almost half of what a reasonable mortgage would be.
- Even though housing prices are OVERVALUED as early as 2003, con-artist realtors join the bubble with mortgage issuers ready to offer ARMs and nothing down.
- Realtors want to sell, sell sell and keep telling buyers, “Owning a house in the best investment you’ll ever make.”
- Every home sold is 3% for buyer realtor and 3% for seller realtor.
- Banks find clever ways to package these mortgages into tranches of all sorts, including sub-prime.
- Investment banks and commercial banks begin buying up the sweet looking stuff with a good yield.
- Insurance companies insure the stuff against default.

2. Investment Banks

- Investment banks buy all sorts of mortgages to increase returns. They also use derivatives to hedge some of these risks and/or transfer the risks.
- Much of the investments and leverage by these banks is with collateralized financing. That is, you borrow money to do things and post collateral, like a pool of MBS or CDS.
- As the value of this pool falls, the investment banks need to find more money or collateral to maintain their credit lines.

Definition: Collateralized debt obligations (CDOs) are an unregulated type of asset-backed security and structured credit product. CDOs are constructed from a portfolio of fixed-income assets. These assets are divided by the ratings firms that assess their value into different tranches: senior tranches (rated AAA), mezzanine tranches (AA to BB), and equity tranches (unrated). Losses are applied in reverse order of seniority and so junior tranches offer higher coupons (interest rates) to compensate for the added default risk. CDOs serve as an important funding vehicle for fixed-income assets.

2. Investment Banks

- Bear Stearns collapsed – why?

1. Customers were withdrawing money, closing lines of credit.
2. Credit agencies downgraded them – causing them to need more collateral – more capital.
3. Short sellers bashed their stock further causing capital raising problems.
4. Weekend bailout and JPM buys for $2, eventually $10.

- Fannie and Freddie – why?

1. Rumors began spreading.
2. Needed more capital to maintain capital standards imposed by OFHEO (Office of Federal Housing Enterprise Oversight).
3. Most exposure to non sub-prime mortgages, but entire company exposed to real-estate market.
4. Worry that central banks would lose or dump FRE and FNM paper.
5. Internally, perhaps could make it, government determined not and took control of company by backing them with $200B for 80% of preferred shares.

2. Investment Banks

- Lehman Brothers – why?

  1. Rumors began spreading.
  2. Credit default swap yields rose dramatically.
  3. Short sellers began selling stock
  4. Everyone worried that Lehman had too much risk in mortgage and housing market and could not maintain solvency.
  5. Declared bankruptcy.
  6. Barclays buys asset management unit for $250. A few days earlier they walked away…the big dog will eat you when you're in trouble.

- AIG – why?

  1. Rumors began spreading.
  2. Credit agencies downgraded their company. This meant that they had to post enormous collateral to back their Credit Default Swaps (lots of losses on these as well).
  3. They need capital desperately, but no one could take it on – no one even wanted too.
  4. Paulson and government take over 80% of company in exchange for $85B lifeline.

- Merrill Lynch – why?

  1. Very similar – trading at $17.
  2. Thain does deal with BAC at $29 to get out before it's too late.
  3. Larger capital base and customer deposits.

2. Investment Banks

- MS? GS? C? BAC?

  1. Stock prices began falling on Monday the 15th through Thursday the 18th of September.
  2. Short sellers killing stock on fears of similar problems.
  3. S&P 500 down 7.5% in less than one week – MS down at one point 38%!!!

- What was so ugly about these investment banks? The Case of Lehman

- Leverage of 24-to-1 (Balance Sheet)
- Lots of exposure to housing market through mortgage portfolio and direct real estate.

2. Investment Banks

- A Primer on Leverage
- Trader A has $10,000,000. He then invests $240,000,000 by borrowing the extra at 2%.
- He invests in MBS securities paying 6.5% (he may even hedge out interest rate risk and some of the default risk with derivatives).
- If things stay calm, every year makes: $15,600,000 pays interest of $4,600,000. Wow, a profit of $11M and a return on equity of 110%!!!
- But what happens if real estate prices fall? And mortgage rates rise, causing a loss on the value of the assets? And what if defaults rise and the 6.5% interest rate begins falling lower than 2%?
- Then, you owe more to your borrowing that you're making…
- If the value of your assets fall, other people interacting with you may ask for extra collateral to support all of your leverage – where do you get it?

2. Investment Banks

- What business was Lehman Brothers in?

Capital Markets

The Capital Markets segment is divided into two components:

Fixed Income — The Company makes markets in and trades municipal and public sector instruments, interest rate and credit products, mortgage-related securities and loan products, currencies and commodities. The Company also originates mortgages and structures and enters into a variety of derivative transactions. The Company provides research covering economic, quantitative, strategic, credit, relative value, index and portfolio analyses. Additionally, the Company provides financing, advice and servicing activities to the hedge fund community, known as prime brokerage services. The Company engages in certain proprietary trading activities and in principal investing in real estate that are managed within this component.

Investment Banking

The Company takes an integrated approach to client coverage, organizing bankers into industry, product and geographic groups within the Investment Banking segment. Business services provided to corporations and governments worldwide can be separated into:

Global Finance — The Company serves clients' capital raising needs through underwriting, private placements, leveraged finance and other activities associated with debt and equity products.

Advisory Services — The Company provides business advisory services with respect to mergers and acquisitions, divestitures, restructurings and other corporate activities.

Investment Management

The Investment Management business segment consists of:

Asset Management — The Company provides customized investment management services for high net worth clients, mutual funds and other institutional investors. Asset Management also serves as general partner for private equity and other alternative investment partnerships and has minority stake investments in certain alternative investment managers.

Private Investment Management — The Company provides investment, wealth advisory and capital markets execution services to high net worth and institutional clients.

2. Investment Banks

- How was the business doing? Income Statement 2008 Q2

In millions	Capital Markets	Investment Banking	Investment Management	Total
Three Months Ended May 31, 2008				
Gross revenues	$ 4,522	$ 858	$ 860	$ 6,240
Interest expense	6,896	—	12	6,908
Net revenues	(2,374)	858	848	(668)
Depreciation and amortization expense	121	14	30	165
Other expenses	2,014	651	589	3,254
Income before taxes	$(4,509)	$ 193	$ 229	$(4,087)
Segment assets (in billions)	$ 629.3	$ 1.3	$ 8.8	$ 639.4
Three Months Ended May 31, 2007				
Gross revenues	$13,616	$1,150	$ 813	$15,579
Interest expense	10,022	—	45	10,067
Net revenues	3,594	1,150	768	5,512
Depreciation and amortization expense	109	12	26	147
Other expenses	2,132	800	554	3,486
Income before taxes	$ 1,353	$ 338	$ 188	$ 1,879
Segment assets (in billions)	$ 595.5	$ 1.3	$ 9.1	$ 605.9

Oh no!

2. Investment Banks

- How much exposure did they have to real estate?

Note 3 Financial Instruments and Other Inventory Positions

Financial instruments and other inventory positions owned and Financial instruments and other inventory positions sold but not yet purchased were comprised of the following:

	Owned		Sold But Not Yet Purchased	
In millions	May 31, 2008	Nov 30, 2007	May 31, 2008	Nov 30, 2007
Mortgage and asset-backed securities	$ 72,461	$ 89,106	$ 351	$ 332
Government and agencies	26,988	40,892	63,731	71,813
Corporate debt and other	49,999	54,098	8,344	6,759
Corporate equities	47,549	58,521	43,184	39,080
Real estate held for sale	20,664	21,917	—	—
Commercial paper and other money market instruments	4,757	4,000	12	12
Derivatives and other contractual agreements	46,991	44,595	25,885	31,621
	$269,409	$313,129	$141,507	$149,617

Mortgage and asset-backed securities. Mortgage and asset-backed securities include residential and commercial whole loans and interests in residential and commercial mortgage-backed securitizations. Also included within Mortgage and asset-backed securities are securities whose cash flows are based on pools of assets in bankruptcy-remote entities, or collateralized by cash flows from a specified pool of underlying assets. The pools of assets may include, but are not limited to mortgages, receivables and loans. Additionally, the Company's mortgage-related trading positions consist of loans purchased as non-performing loans, equity interests in commercial properties and asset-backed securities that are backed by mortgage loans or other assets.

2. Investment Banks

- Where was the leverage?

In millions, except share data	At May 31, 2008	At Nov 30, 2007
Liabilities and Stockholders' Equity		
Short-term borrowings and current portion of long-term borrowings		
(including $9,354 in 2008 and $9,035 in 2007 at fair value)	$ 35,302	$ 28,066
Financial instruments and other inventory positions sold but not yet purchased	141,507	149,617
Collateralized financings:		
Securities sold under agreements to repurchase	127,846	181,732
Securities loaned	55,420	53,307
Other secured borrowings		
(including $13,617 in 2008 and $9,149 in 2007 at fair value)	24,656	22,992
Payables:		
Brokers, dealers and clearing organizations	3,835	3,101
Customers	57,251	61,206
Accrued liabilities and other payables	9,802	16,039
Deposit liabilities at banks		
(including $10,252 in 2008 and $15,986 in 2007 at fair value)	29,355	29,363
Long-term borrowings		
(including $27,278 in 2008 and $27,204 in 2007 at fair value)	128,182	123,150
Total liabilities	613,156	668,573
Commitments and contingencies		
Stockholders' Equity		
Preferred stock	6,993	1,095
Common stock, $0.10 par value:		
Shares authorized: 1,200,000,000 in 2008 and 2007;		
Shares issued: 612,948,910 in 2008 and 612,882,506 in 2007;		
Shares outstanding: 552,704,921 in 2008 and 531,887,419 in 2007	61	61
Additional paid-in capital	11,268	9,733
Accumulated other comprehensive loss, net of tax	(359)	(310)
Retained earnings	16,901	19,698
Other stockholders' equity, net	(3,666)	(2,263)
Common stock in treasury, at cost		
(60,243,989 shares in 2008 and 80,995,087 shares in 2007)	(4,922)	(5,524)
Total common stockholders' equity	19,283	21,395
Total stockholders' equity	26,276	22,490
Total liabilities and stockholders' equity	$639,432	$691,063

See Notes to Consolidated Financial Statements.

2. Investment Banks

- What about AIG?

(in millions, except per share data) (unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2008	2007	**2008**	2007
Revenues:				
Premiums and other considerations	**$21,735**	$19,533	**$ 42,407**	$39,175
Net investment income	**6,728**	7,853	**11,682**	14,977
Net realized capital losses	**(6,081)**	(28)	**(12,170)**	(98)
Unrealized market valuation losses on AIGFP super senior credit default swap portfolio	**(5,565)**	—	**(14,672)**	—
Other income	**3,116**	3,792	**6,717**	7,741
Total revenues	**19,933**	31,150	**33,964**	61,795
Benefits and expenses:				
Incurred policy losses and benefits	**18,450**	16,221	**34,332**	32,367
Insurance acquisition and other operating expenses	**10,239**	8,601	**19,652**	16,928
Total benefits and expenses	**28,689**	24,822	**53,984**	49,295
Income (loss) before income taxes (benefits) and minority interest	**(8,756)**	6,328	**(20,020)**	12,500
Income taxes (benefits)	**(3,357)**	1,679	**(6,894)**	3,405
Income (loss) before minority interest	**(5,399)**	4,649	**(13,126)**	9,095
Minority interest	**42**	(372)	**(36)**	(688)
Net income (loss)	**$ (5,357)**	$ 4,277	**$(13,162)**	$ 8,407
Earnings (loss) per common share:				
Basic	**$ (2.06)**	$ 1.64	**$ (5.11)**	$ 3.22
Diluted	**$ (2.06)**	$ 1.64	**$ (5.11)**	$ 3.21

3. Regulation

- Where was Barney Frank, Chairman of Financial Services Committee?
- Where was Christopher Cox, Chairman of SEC?
- Why did they remove the uptick rule on shorting in 2006?
- Where was Alan Greenspan and the Fed?
- Where was OFHEO?
- Why didn’t someone prohibit zero down mortgages and ARMS and other non-fixed rate mortgages?

3. Regulation

- On Thursday, September 17, 2008, Morgan Stanley went from $24 to 12 and back up to $24.
- No naked short selling and enforcement.
- Certain banks do not lend their shares for shorting.
- Central banks around world pump $180B into money market to keep rates low and liquidity available.
- Paulson announces a vehicle to dump bad debt by banks so capital can be freed up.
- UK prohibits short selling on financial stocks.

4. The Future

- Investors should not panic – this only makes things worse for the financial markets. For example, Putnam had to close money market fund due to redemptions and $1 NAV issue.

- The nature of financial markets are this way…we still have more to go, and the economy will feel the pain next as home owners lose real wealth through declining home values.

- Some ideas for thought:

1. How should we stop bubbles? They cause uncertainty, redistribution of income and misuse of resources.

2. What would you change about the financial system? What would you worry about?

3. How much more is still to come?