MELLON CAPITAL® MANAGEMENT

Financial Markets: A View from the Trenches

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The views expressed here are not necessarily those of Mellon Capital Management or BNY Mellon Asset Management

Outline

- About BNY Mellon/Mellon Capital
- Causes of the financial crisis
- Implications for financial markets
- Outlook
- Conclusion

About BNY Mellon/Mellon Capital

Bank of New York Mellon

- Bank of New York founded in 1784 by Alexander Hamilton. Mellon Bank founded in 1869. Merger in 2007
- Headquarter in New York
- 40,000 employees
- 4th largest financial institution in the U.S. by market cap (02/18/2009)
- Custodial services:
  - $20t under custody (Dec. 2008)
  - World's largest custodian
- Asset Management
  - $980b under management (Dec. 2008)
  - Distributed over a dozen boutique asset management companies

Mellon Capital Management

- Founded in 1983
- Headquarters in San Francisco
- $152b under management (Dec. 2008)
- Mostly institutional clients
- Variety of active and passive strategies
- Founded by innovator in indexing
- 400 employees

Timeline of the Financial Crisis

Stage 1 - Sowing the seeds for the crisis: 1990s to 2007

- Fannie Mae and Freddie Mac (**Government**-Sponsored Enterprises)
  - Market share increases to 50% of existing mortgages in 2006 and 80% (!) of new mortgages
  - Federal government “encouraged” more “affordable housing”
- Innovations in securitization: CDO, CDO-squared, etc.
- Low federal funds rate 2001-2005
- Bubble of optimism:
  - Low nominal yields
  - Low risk premia
  - High leverage
  - Mispricing of CDOs

Timeline of the Financial Crisis

Stage 2 - Troubles become visible

- Mounting mortgage defaults starting in 2007
- Bear Stearns rescue in early 2008
- September 2008:
  - Lehman failure
  - Fannie and Freddie taken over
  - AIG in conservatorship
  - Merrill Lynch rescued
  - Money market funds "break the buck"
- Bubble of pessimism:
  - High volatility
  - Unprecedented risk aversion
  - Huge yield spreads
  - Counterparty risk

Timeline of the Financial Crisis

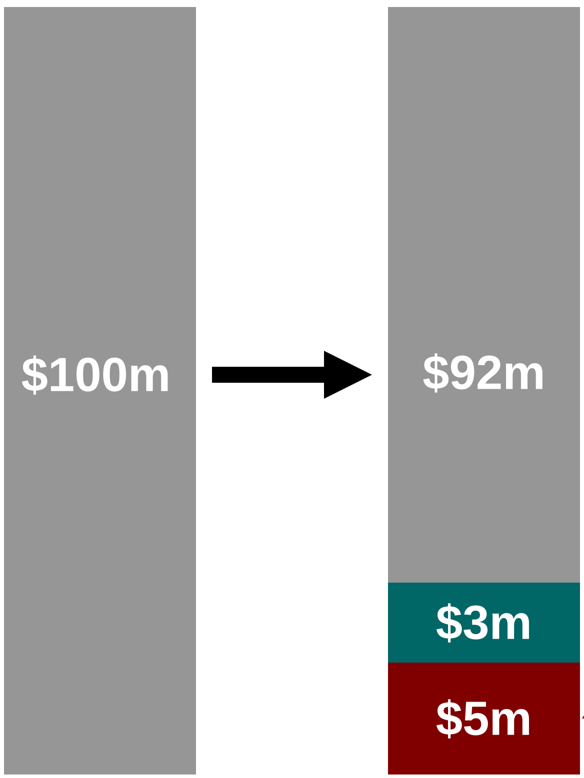
Stage 3 - Government response: Since late 2008

- No success in reducing uncertainty:
  - Vague TARP program
  - Potential nationalization of banks
  - Uncertainty about "mortgage bankruptcy"
  - Large deficits, looming tax hikes

Collateralized Debt Obligations 101:
A Lot Less Tenderloin than We Thought

Problem: NINJA loans (no income, no job or assets) cause higher defaults than expected
There's much less than 92% Tenderloin in the average cow

Mortgage pool:
Historical average: 4% loss



1st tranche shielded from first $8m of losses:
➡ AAA rating **(Tenderloin)**

2nd tranche shielded from first $5m of losses:
➡ BBB rating **(Ribs)**

➡ Equity **(Hamburger)**

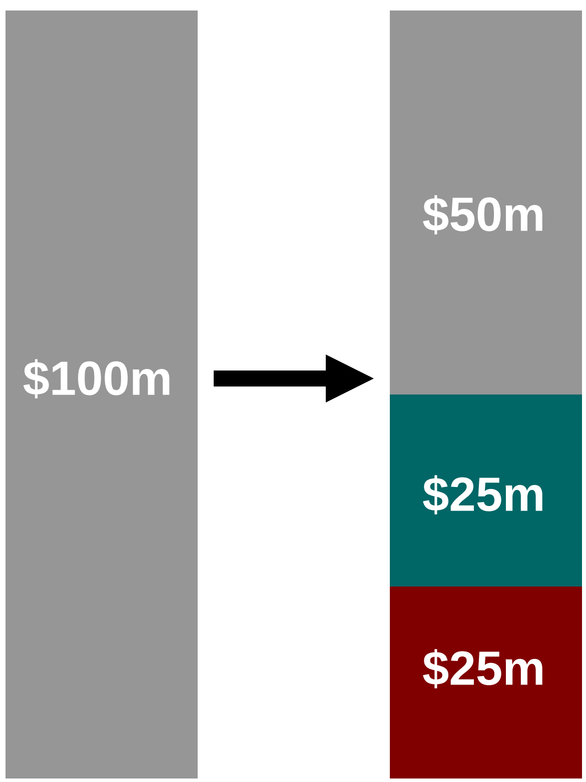
Additional information in Disclosure Statements at the end of this presentation

CDO-Squared:
Finding More Tenderloin in the Hamburgers

Equity stake in 20 CDOs:
Rating agencies assumed equity shares in CDOs have low or zero correlation.

Example: 25% expected loss

Problem: close to 100% correlation of losses in subordinated tranches!



Found more Tenderloin:
1st tranche with AAA rating

More Ribs:
2nd tranche with BBB rating

$25m of equity in $2b worth of mortgages.
Only 1.25% hamburger left

Effects on Financial Markets

- Revision of default probabilities ➡ downgrades of previously AAA rated CDOs and CDOs-squared

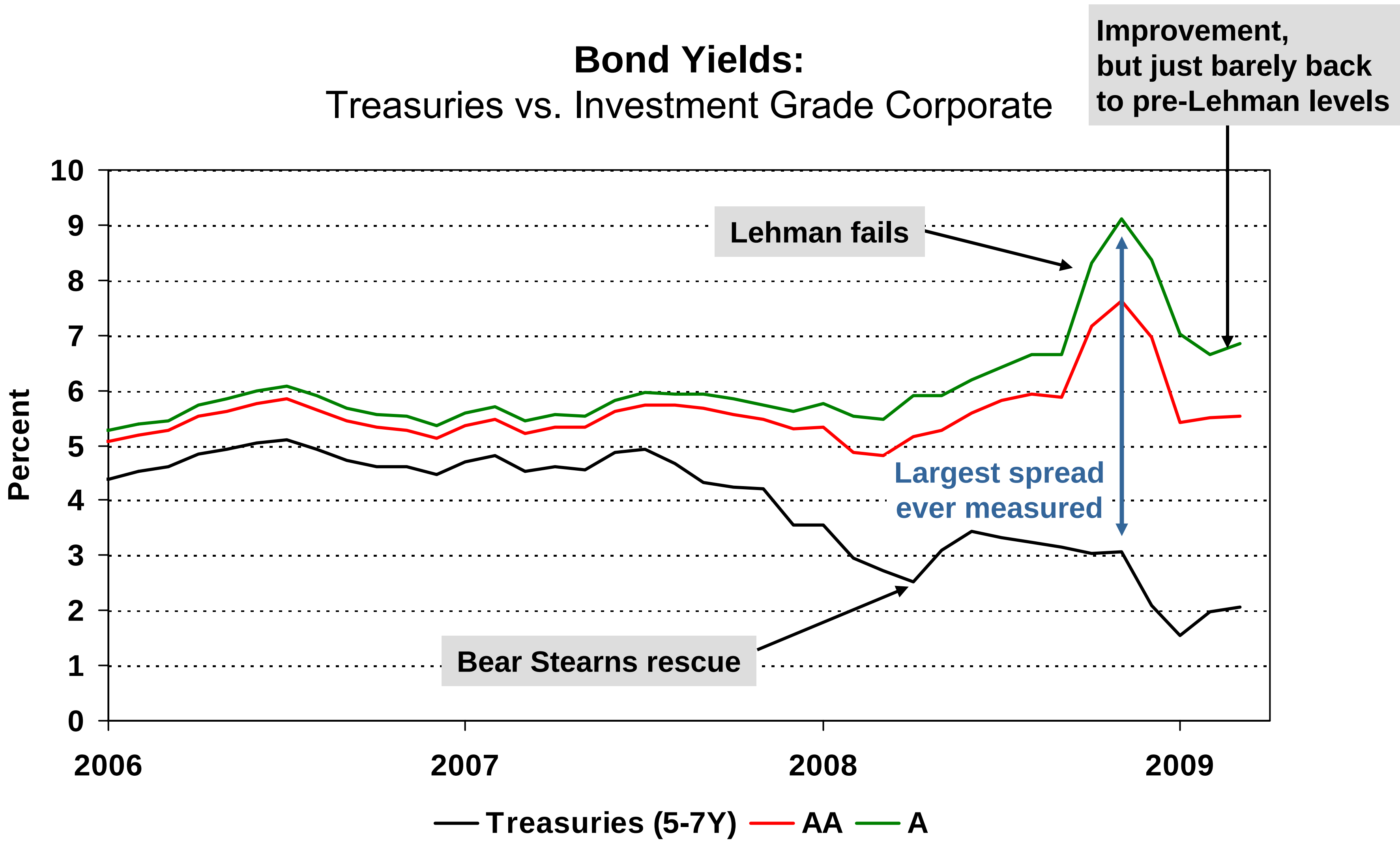
- Bubble of pessimism and risk aversion
  - Low or no liquidity for CDOs ➡ prices for CDOs **overreacted**
  - Contagion to other risky assets
  - “Runs” on money market funds
  - “Toxic assets” weigh on balance sheets. Banks have to “mark to market” to extremely low CDO price
  - Failure of Lehman amplifies risk aversion (counterparty risk)
  - “Toxic assets” are attractive investment for patient, risk-neutral investor, not subject to regulation. But no regulated bank wants to have more toxic assets on its balance sheet

➡ **Flight to quality**

Illiquidity and risk aversion in practice

- Corporate bonds:
  - Bid-ask spreads ~5bps in normal times
  - 100s of bps (i.e., no market at all) in September and October '08
  - Now back to 15-20bps
- Asset-backed securities:
  - Old days: very liquid markets, multiple offers within a minute
  - Now:
    - Takes days to sell.
    - Good analogy: Put up a "For Sale" sign
- Swaps/Forwards:
  - Large concern with counterparty risk

Flight to Quality in Fixed Income

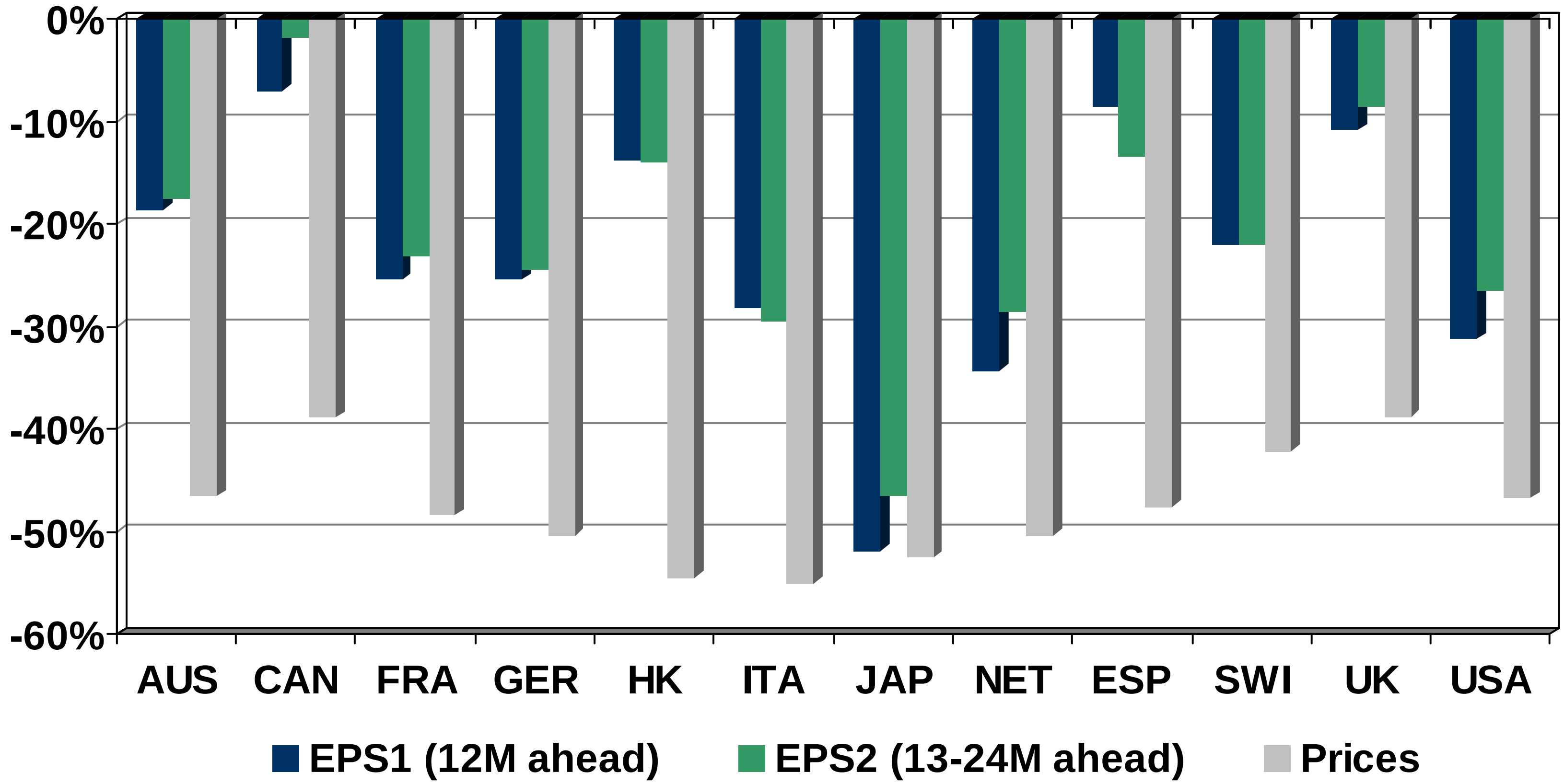


Source: Datastream and Mellon Capital

Flight to Quality out of Equity Markets

Price and Earnings Estimate Changes

October 31, 2007 to January 30, 2009



Source: IBES and Mellon Capital

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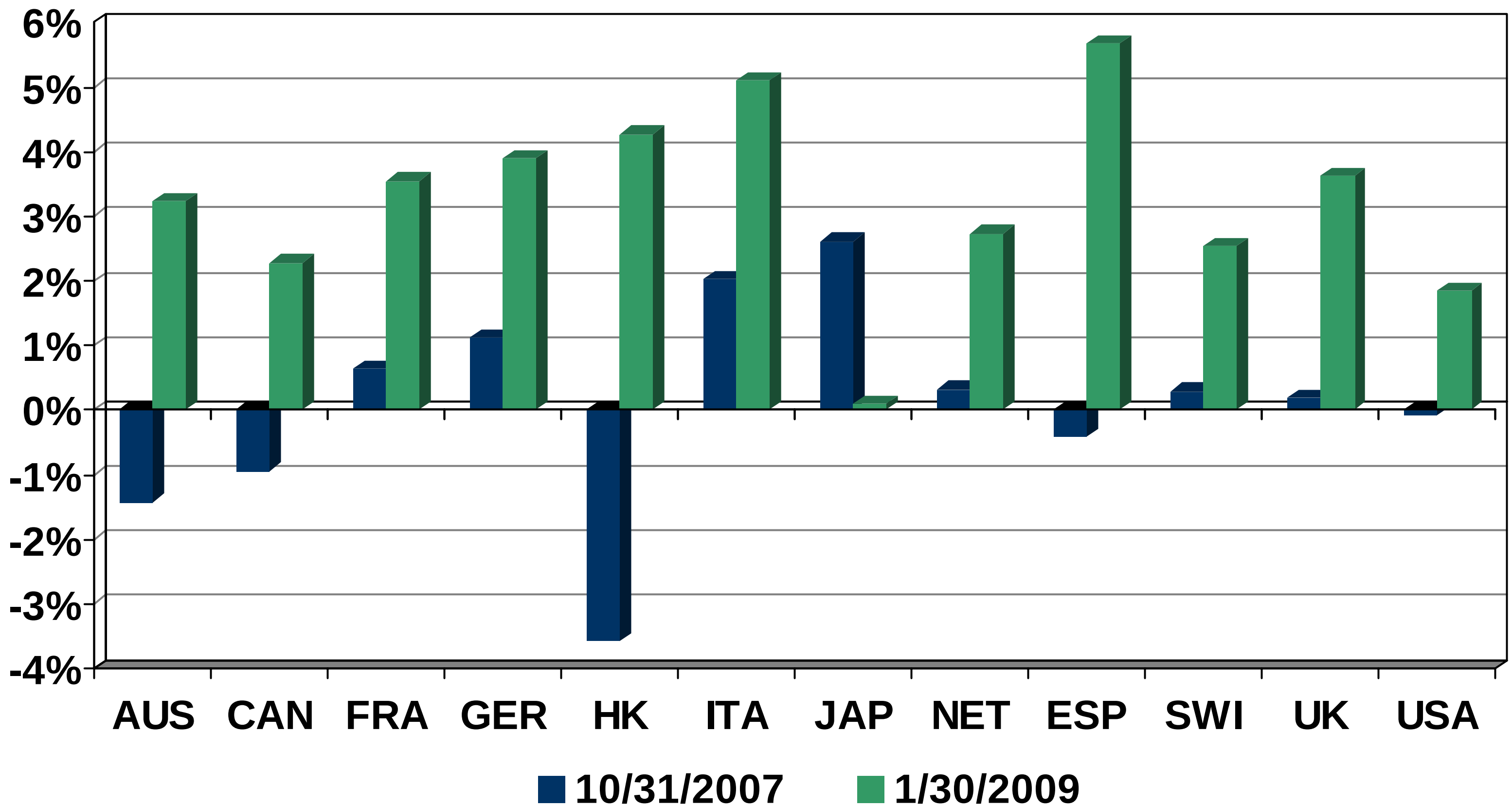
No Sign of Bubble in 2007, Substantial Undervaluation in 2009

12M Ahead Earnings/Price Relative to 1987–2008 Average

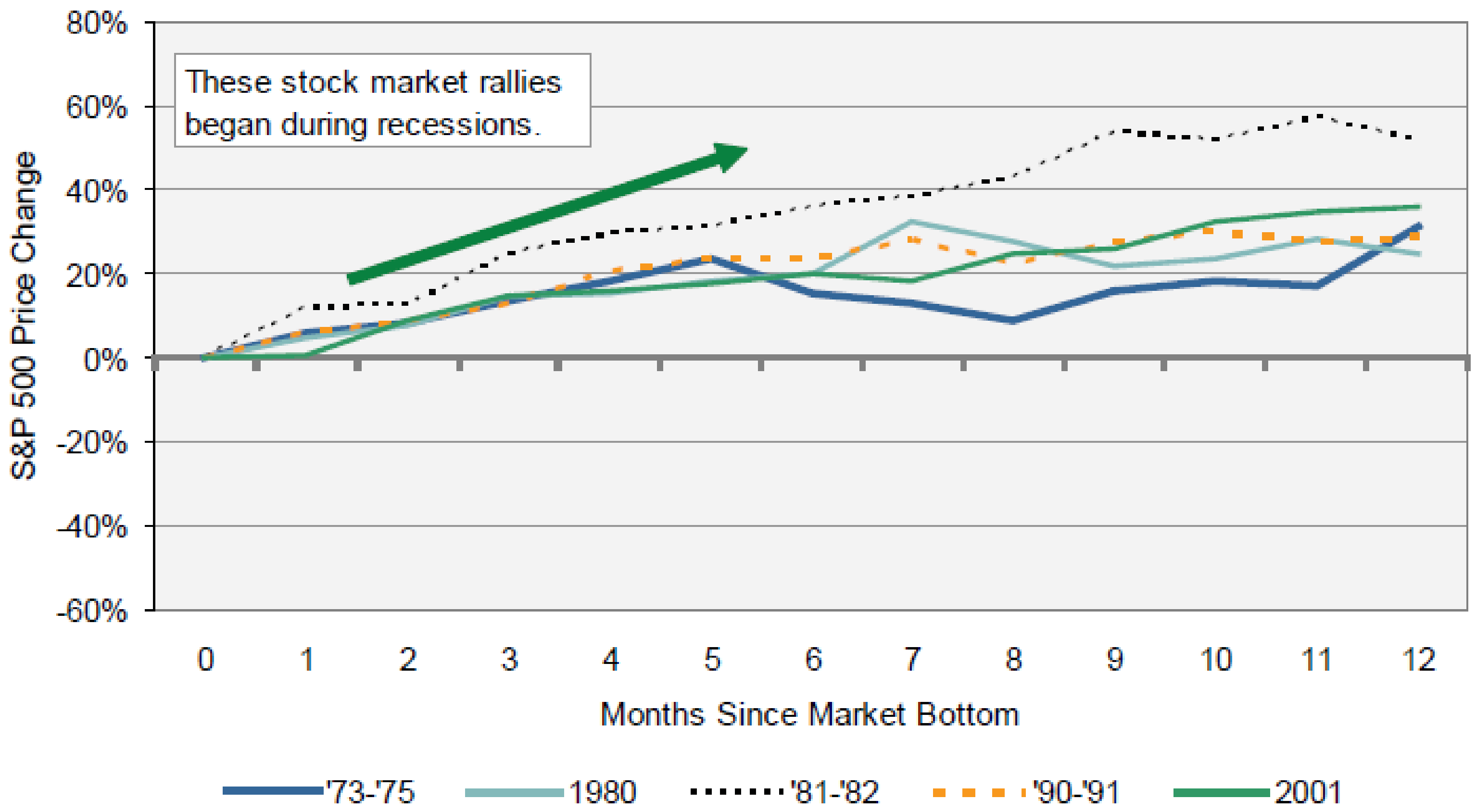


Source: IBES and Mellon Capital

Comparison to Other Recessions

The good news:

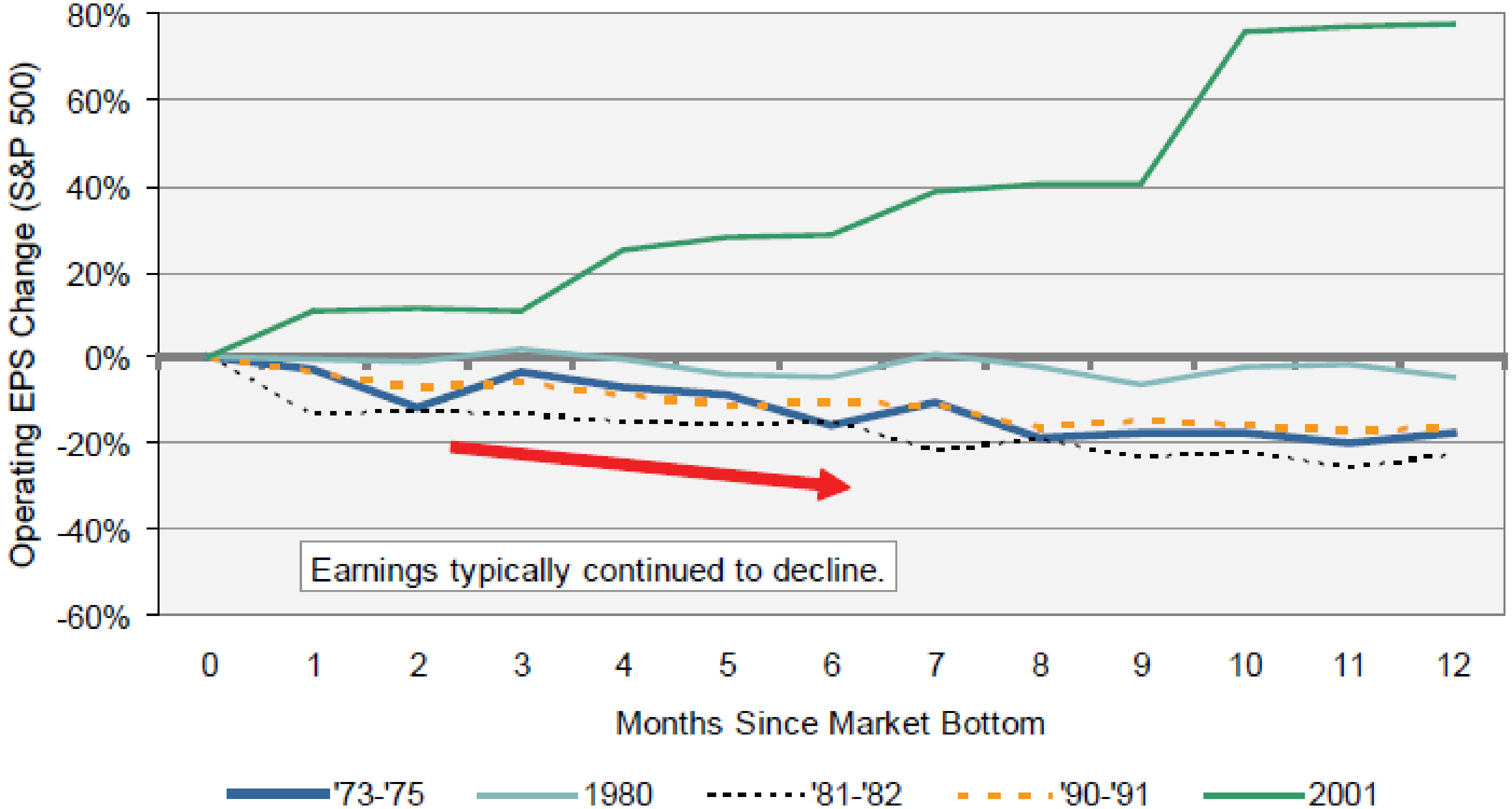
In past U.S. recessions, the market recovered 25%+ from the bottom within 12 months…



Source: Datastream and Mellon Capital

Comparison to Other Recessions

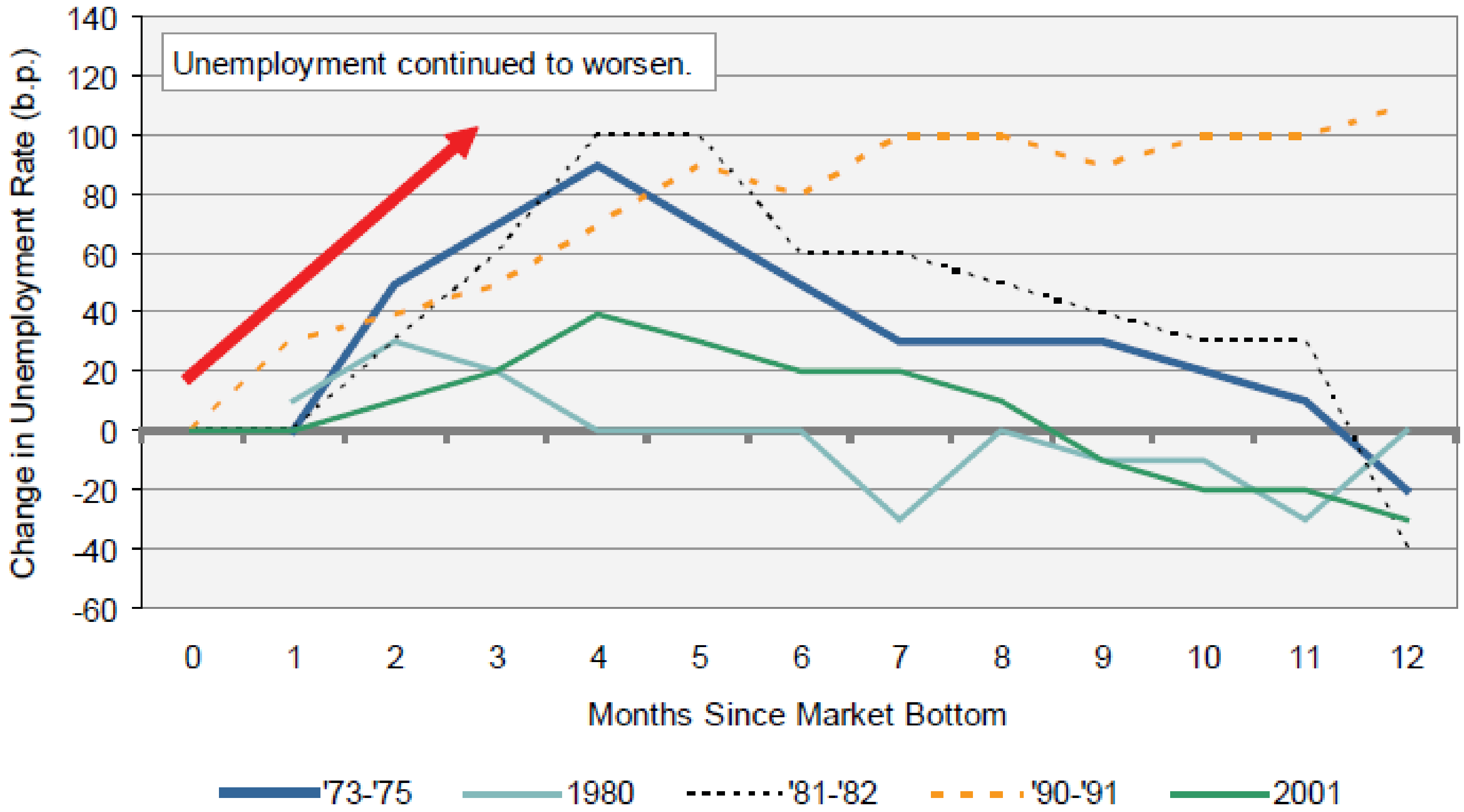
…even though earnings were still declining,…



Source: Bloomberg and Mellon Capital

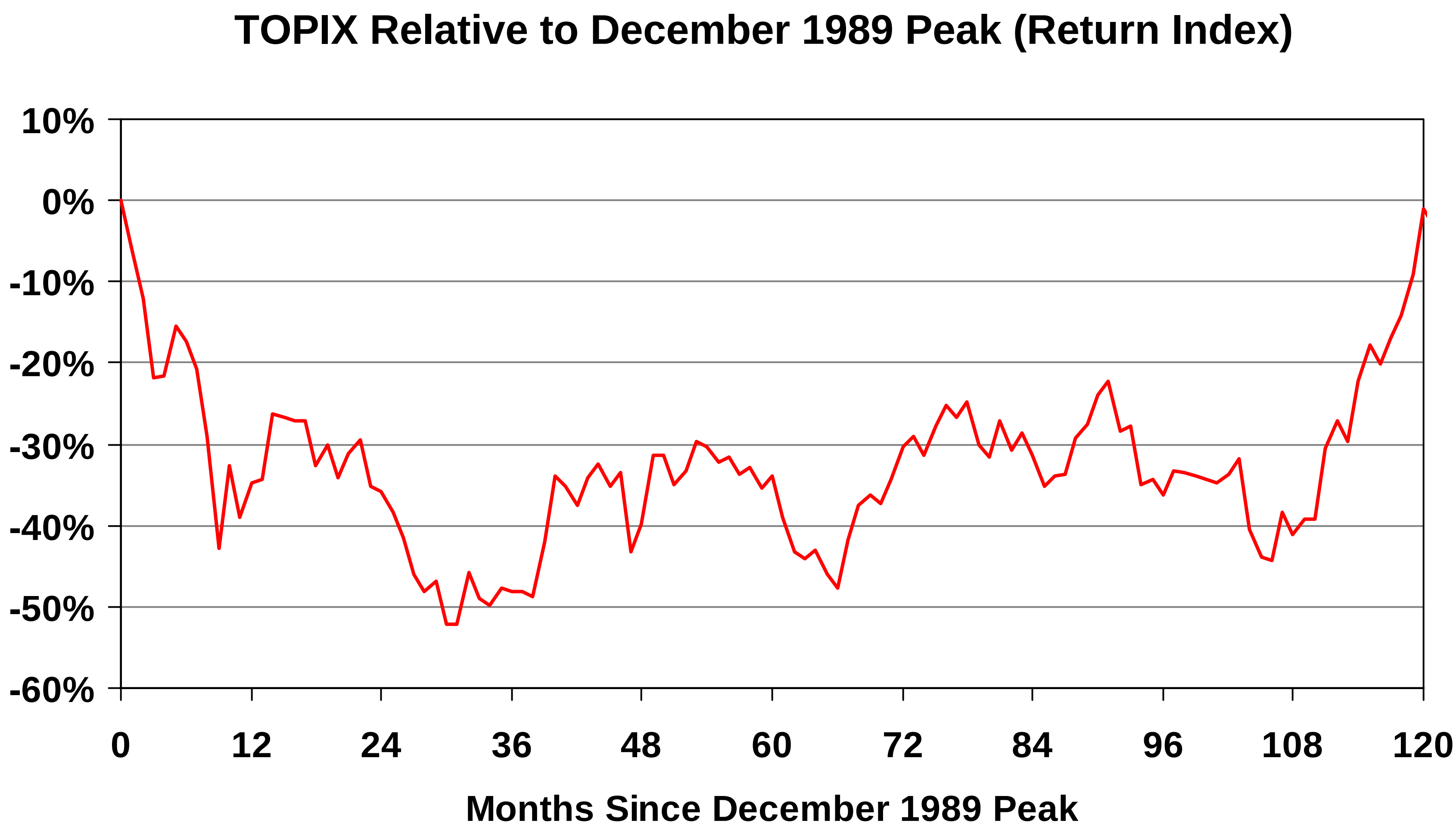
Comparison to other recessions

…and the macroeconomy showed no signs of recovery.



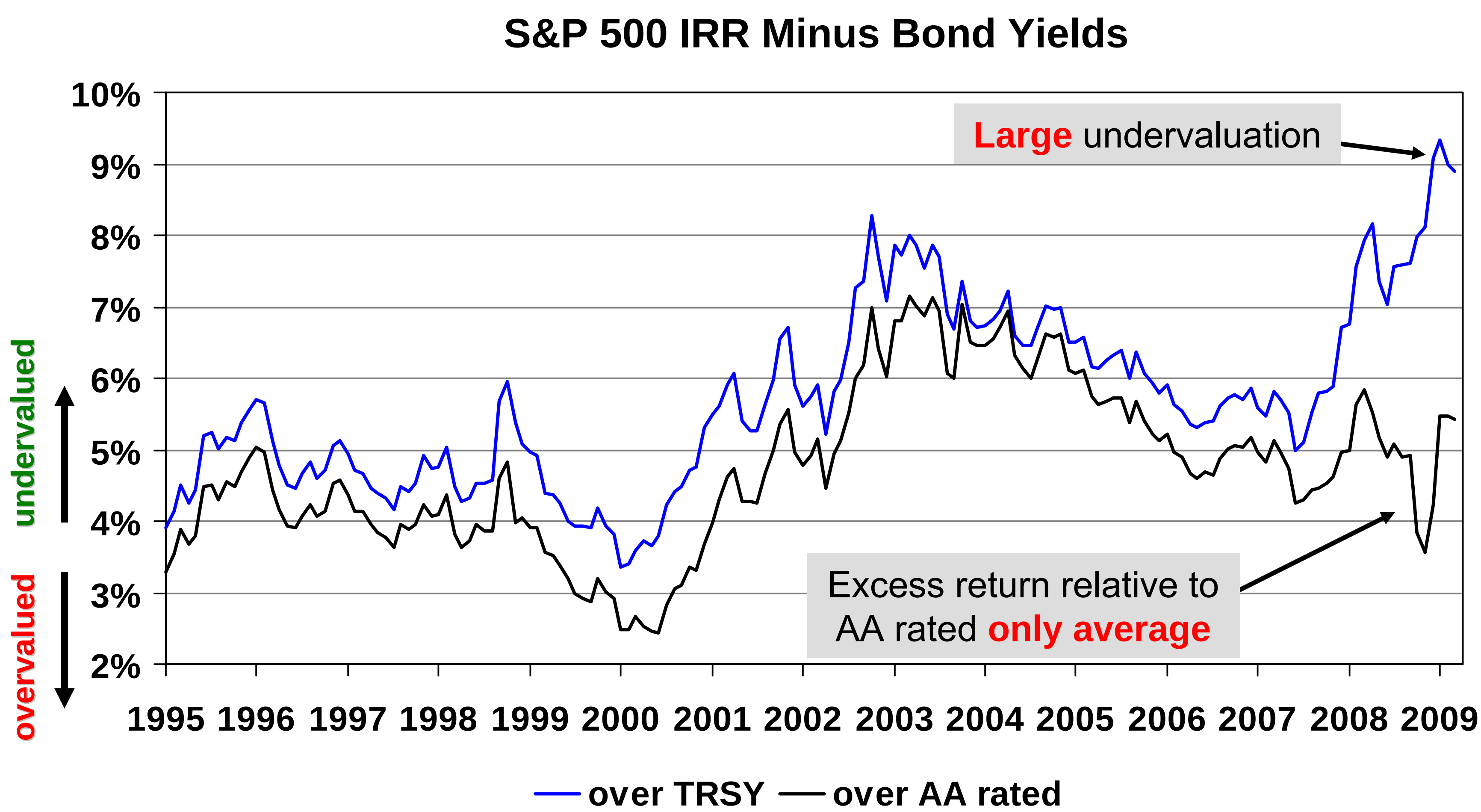
Source: Bureau of Labor Statistics

Caveat 1: Japan Had Neither Equity Market nor Macroeconomic Recovery for 9 Years!



Source: Datastream

Caveat 2: Stocks Are Cheap Compared to Treasuries, but not Corporate Bonds



Source: Datastream and Mellon Capital

Conclusion

- Housing bubble turned into bubble of pessimism
- Risk premia are declining from record levels
  - Risk aversion in fixed income markets is subsiding but very slowly
  - Liquidity is coming back slowly
- Equity markets seem oversold
  - Investors price in significant probability of disaster scenario

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