Too much right can make a wrong: Setting the stage for the recent financial crisis

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Why was this crisis different from all other crises?

- People do foolish things – or at least, things that look foolish after the fact – all the time.
- Sometimes a lot of people do a lot of the same foolish things at the same time.
  - This can lead to a financial crisis.

Why was this crisis different from all other crises?

- Why might smart investors make foolish financial decisions?
  - Focus on reasons identified by behavioral economics.
- How this might have led to the recent financial crisis.
- Are we setting the stage for another crisis?

Causes of the recent financial crisis

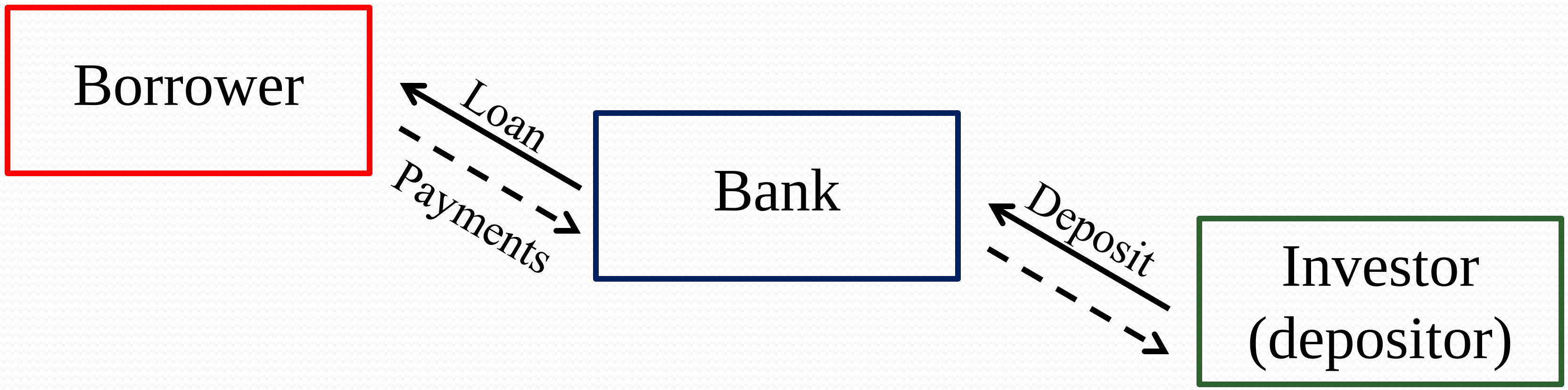
- The crisis through the lens of securitization (although securitization alone did not cause the crisis):
  - A glut of foreign savings with a desire for low risk increased demand for MBS.
  - This gave banks an incentive to create MBS.
  - Problems crept into MBS valuations, but rising home prices covered these up.
  - Falling home prices exposed faults.

. . .

Setup: would you buy this?

- We know (after the fact) that a lot securitized bonds did poorly in the financial crisis.
  - Were investors foolish to buy securitized bonds?

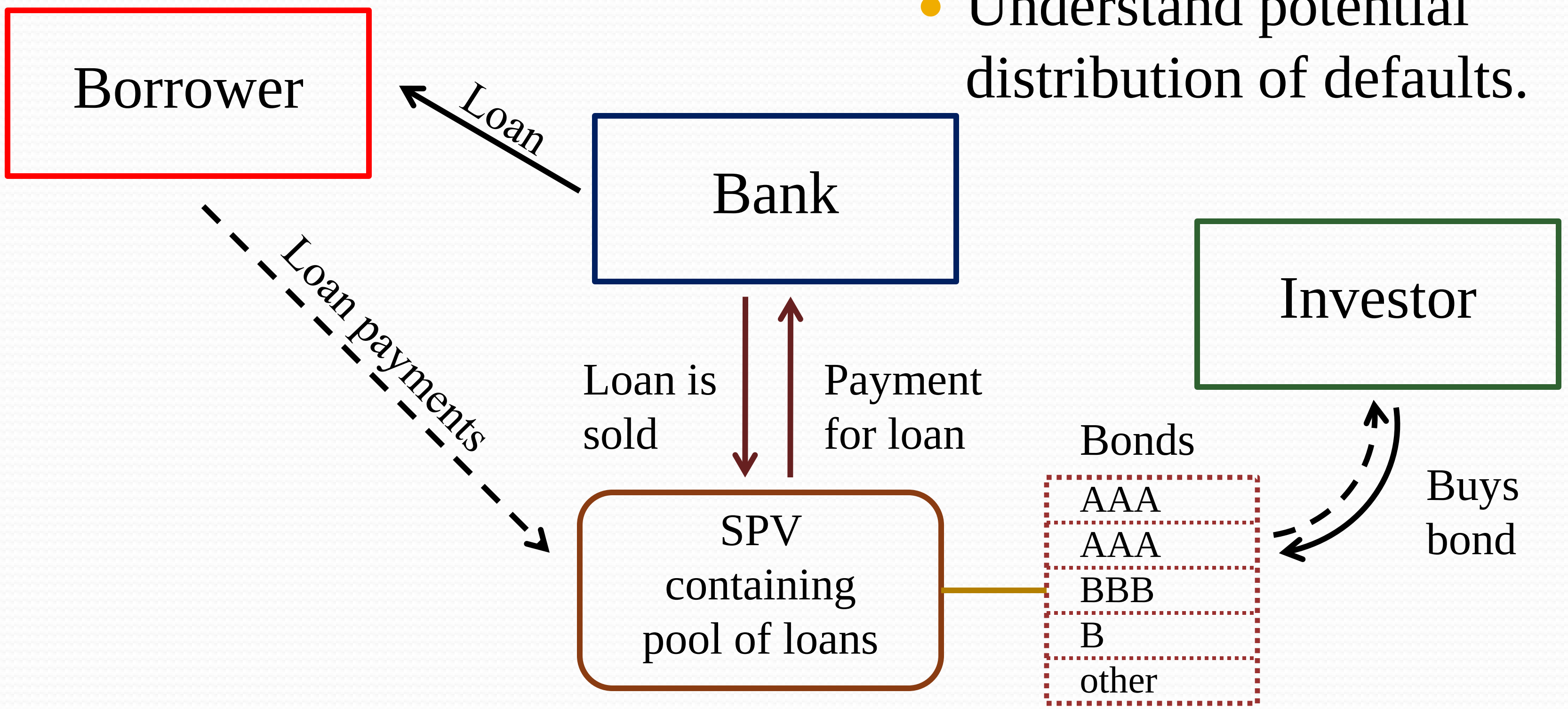
Traditional bank financing



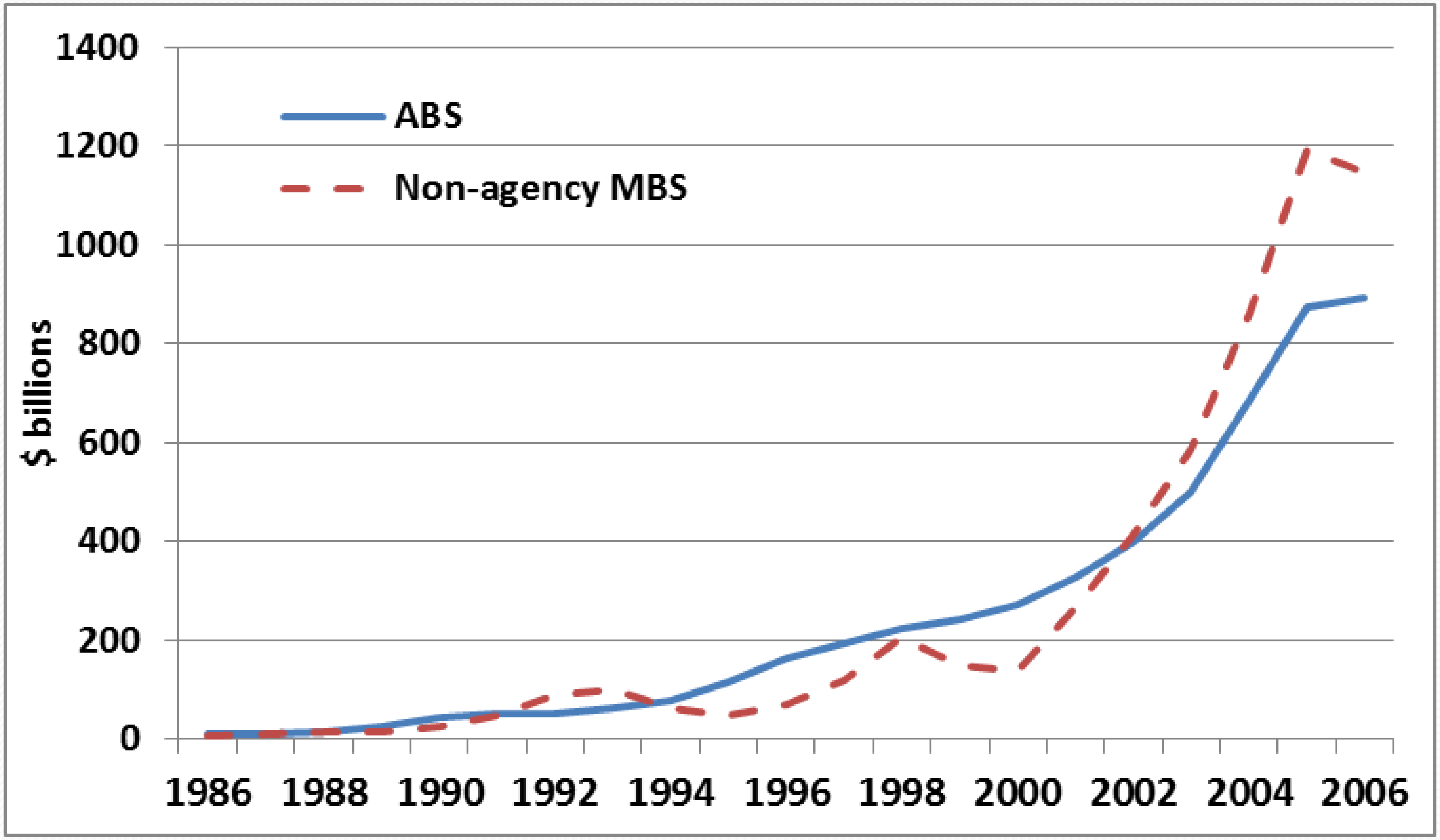
- Investors (that is, depositors) need to believe that:
  - Bank is lending to solid borrowers.
  - On average, defaults will be small.

Securitization

- Investors need to:
  - Believe borrowers are solid.
  - Understand potential distribution of defaults.



Securitization grew rapidly prior to the crisis



Sources: JP Morgan (ABS) and Inside Mortgage Finance (MBS).

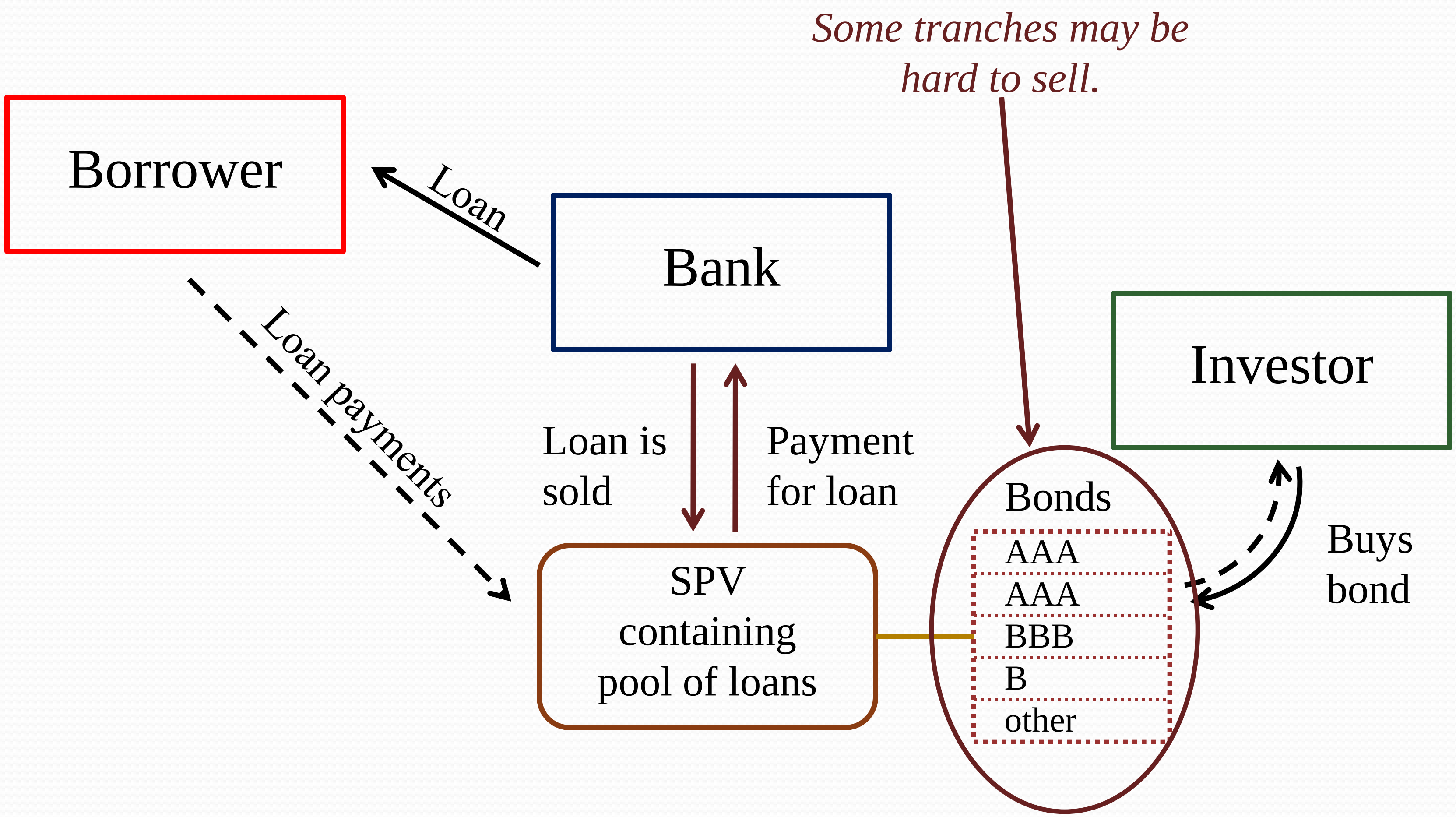
Why did securitization expand?

- Securitization provided efficiencies and access to a broader investor base.

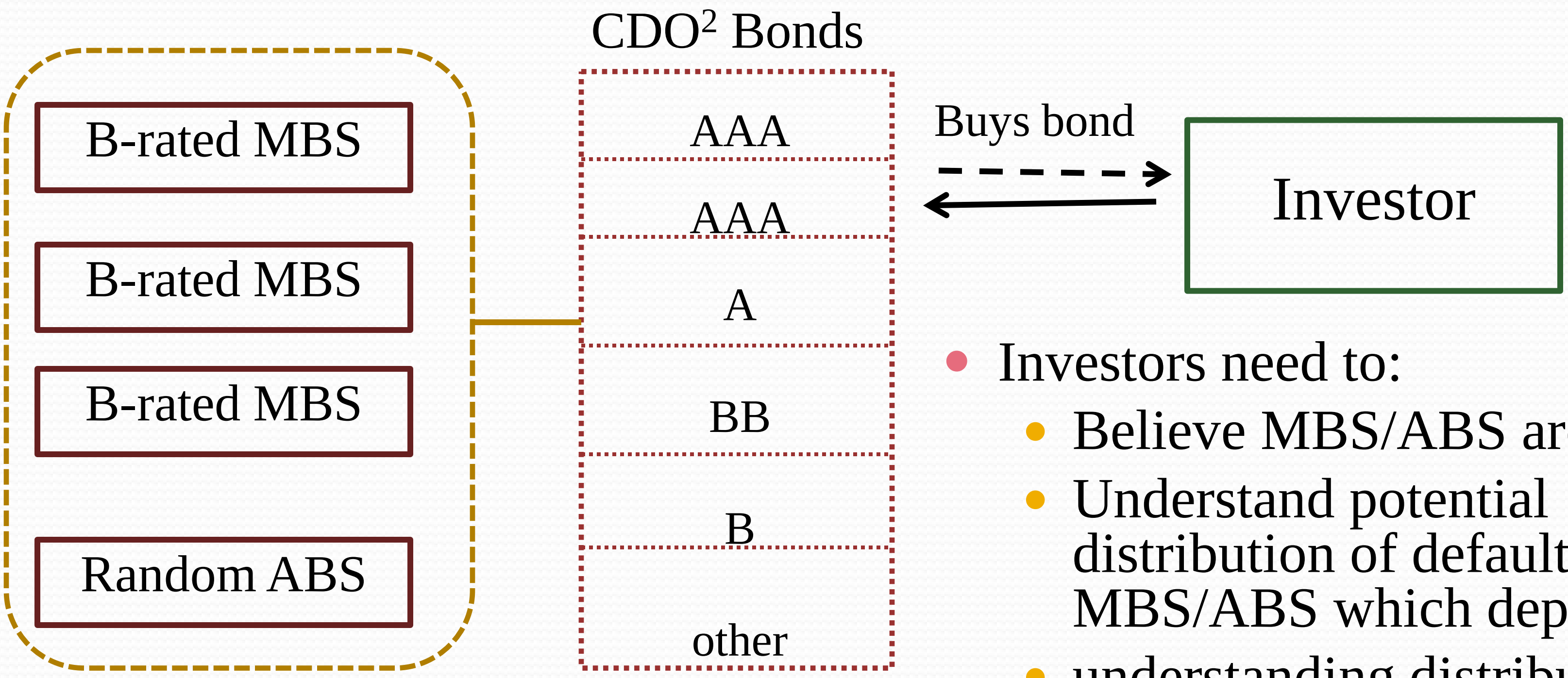
Why did securitization expand?

- Securitization also allowed
  - *regulatory arbitrage* and
  - *tax minimization.*
- Recent settlements also suggest fraud may have played a role.

Securitization



CDO^2: Second-stage securitization



- Investors need to:
  - Believe MBS/ABS are solid.
  - Understand potential distribution of defaults of MBS/ABS which depends on
  - understanding distribution of defaults on underlying MBS/ABS.

The role of investors

- Investors (at least technically) were financially sophisticated.

  Why would they buy securities like CDO^2?

  - ABS, MBS, and CDO^2 typically had higher yields than corporate bonds with equivalent ratings.

The role of investors: overconfidence

Possible reasons for ‘rational’ investors to purchase ‘bad’ structured securities:

- *Overconfidence*: Structured securities such as MBS are complex and difficult to evaluate. An overconfident investor may believe that she is better at pricing these securities than others are.
  - These investors may believe that high yields for structured securities implied money left on the table.

The role of investors: confirmation bias

Why might overconfidence have been stronger in 2006 than in 2002?

- Long string of successes reinforced confidence.
- Even as problems started, *confirmation bias* may have made them difficult to see.

The role of investors: inattention

Busy investors may also have been *rationally inattentive*.

- Capacity constraints for information or costly information processing may mean that individuals do not continuously update their knowledge.
- Long string of successes reinforced rational inattention.

Role of credit rating agencies: anchors

Investors could use ratings by credit ratings agencies (CRAs).

- Ratings may have served as an *anchor* for investors' beliefs.
  - Especially if investors were overloaded with information on complex securities (Brunnermeier and Oehmke, 2009).

Are CRAs reliable?

There has long been a debate about what credit ratings reflect (see, e.g., Partnoy, 1999; Hill, 2009).

- Did CRAs try to get it right or maximize their revenues?
- Some claim CRAs worked with issuers to shape structured security issues (Fons, 2008; Mason and Rosner, 2007).
  - A majority of Moody’s revenues came from structured securities at the peak (Mason and Rosner, 2007).
  - Some argue that this may have led CRAs to abet a hidden increase in risk for structured securities (Kane, 2008).

Setting the stage

The combination of innovative banks, the CRAs, and overconfident/inattentive investors may have led to the more complex and controversial securities such as CDOs.

- Issuers have incentive to add risk (e.g., to have access to more assets).
- CRAs have an incentive to go along with this.
- Investors may not account for the risks in pricing as long as existing, somewhat similar securities have done well.
  - Also, may not look beyond the surface for fraud.

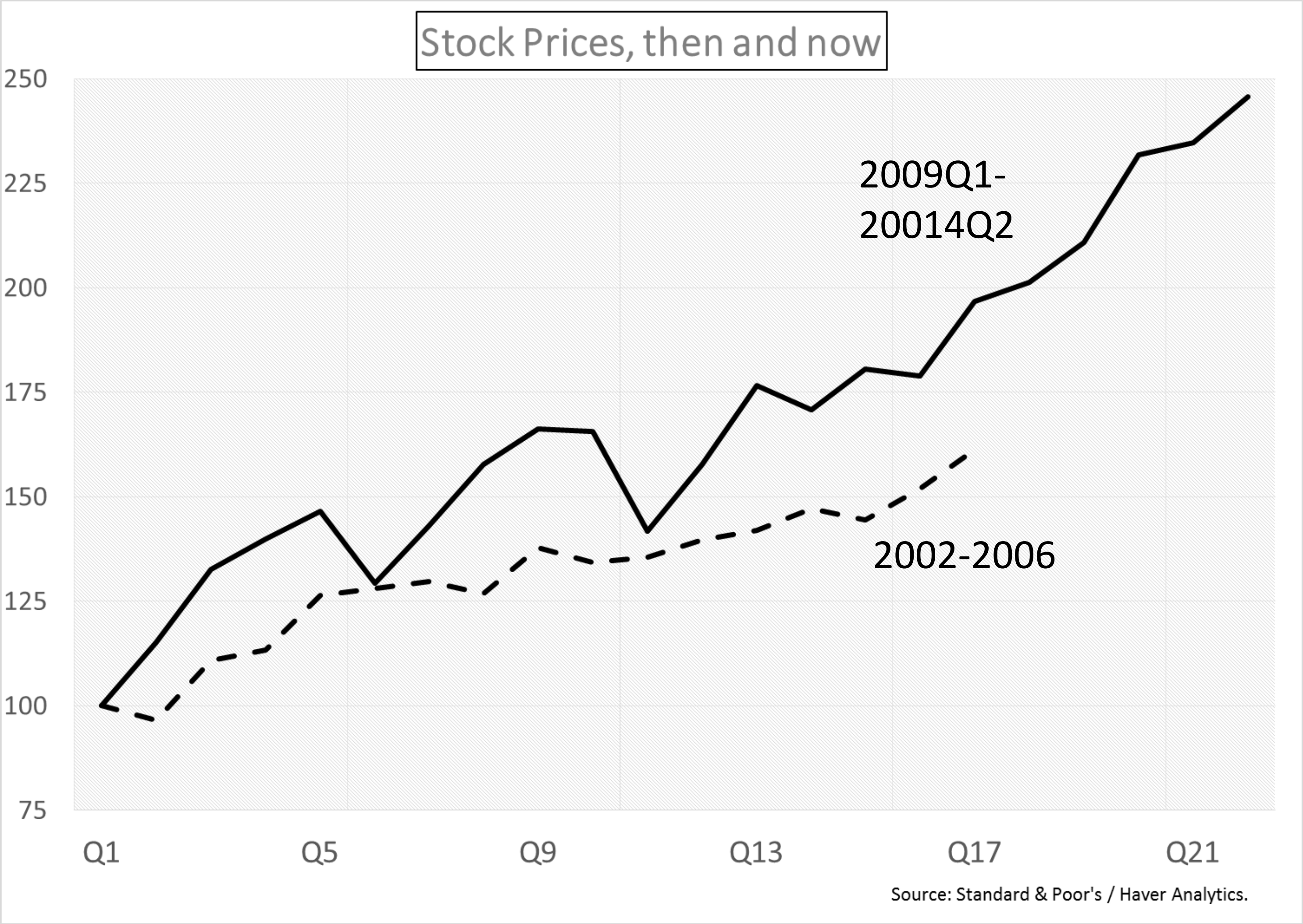
Other people's money

- Incentives
  - Long investment chains (Shin, 2009).
- May lead to:
  - Reach for yield.
    - High reported return → more investors (Sirri and Tufano, 1998)
    - Concentration of risk in a small number of states of nature.
  - Herd behavior.
  - Issue: Banks were among the largest owners of MBS (Greenlaw, et al., 2008).

Was the recent crisis different: Banks versus the shadow banking system

- Intermediation chain (Shin, 2009) is longer with SBS than with banks.
- The SBS is skewed more toward short-term rewards than is the traditional banking system (fees vs. income).
- SBS firms (esp. investment banks) were more leveraged than banks.
- But, banks participated in the SBS, and also made covenant-lite loans.

Where we are now: excesses?



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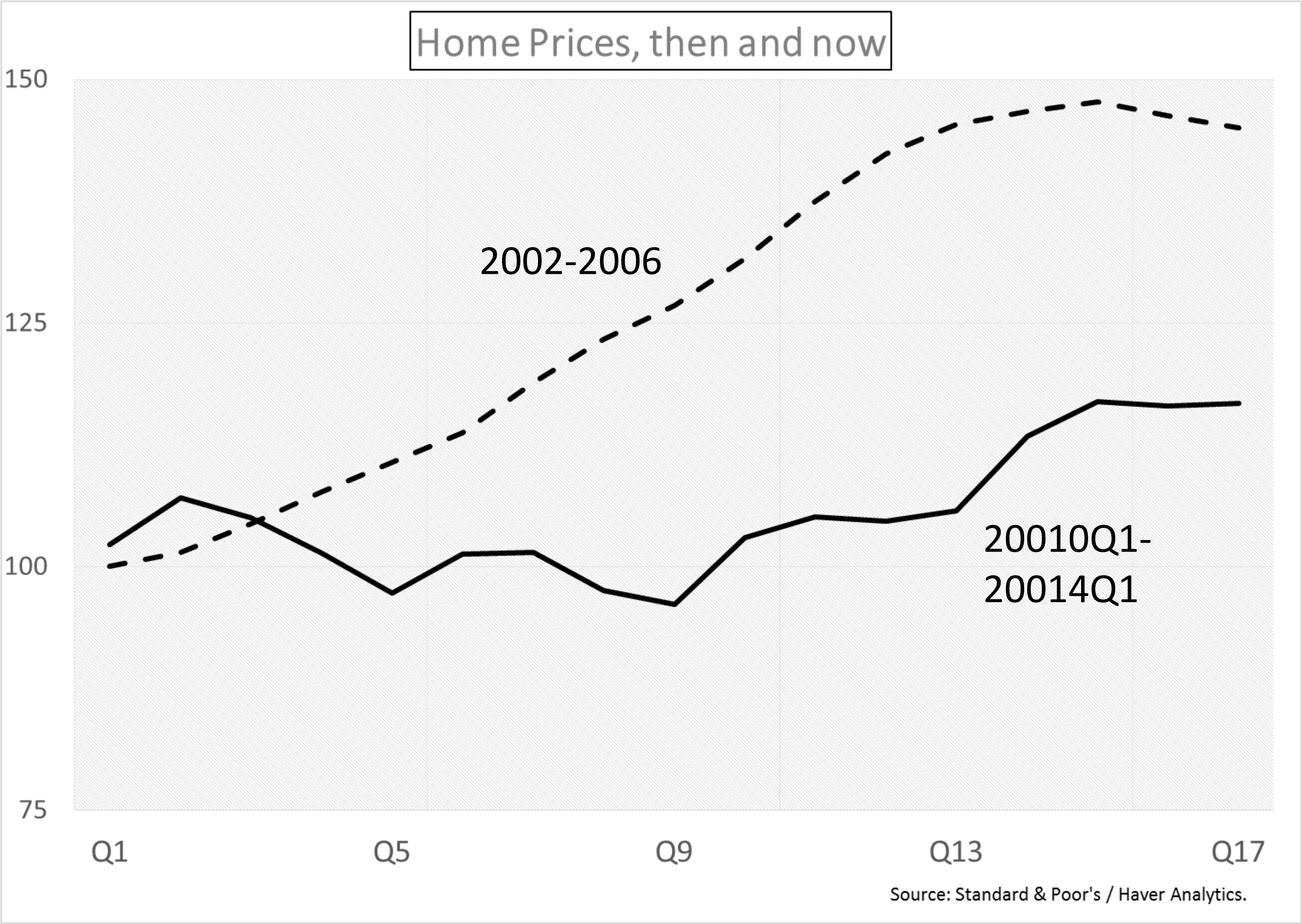

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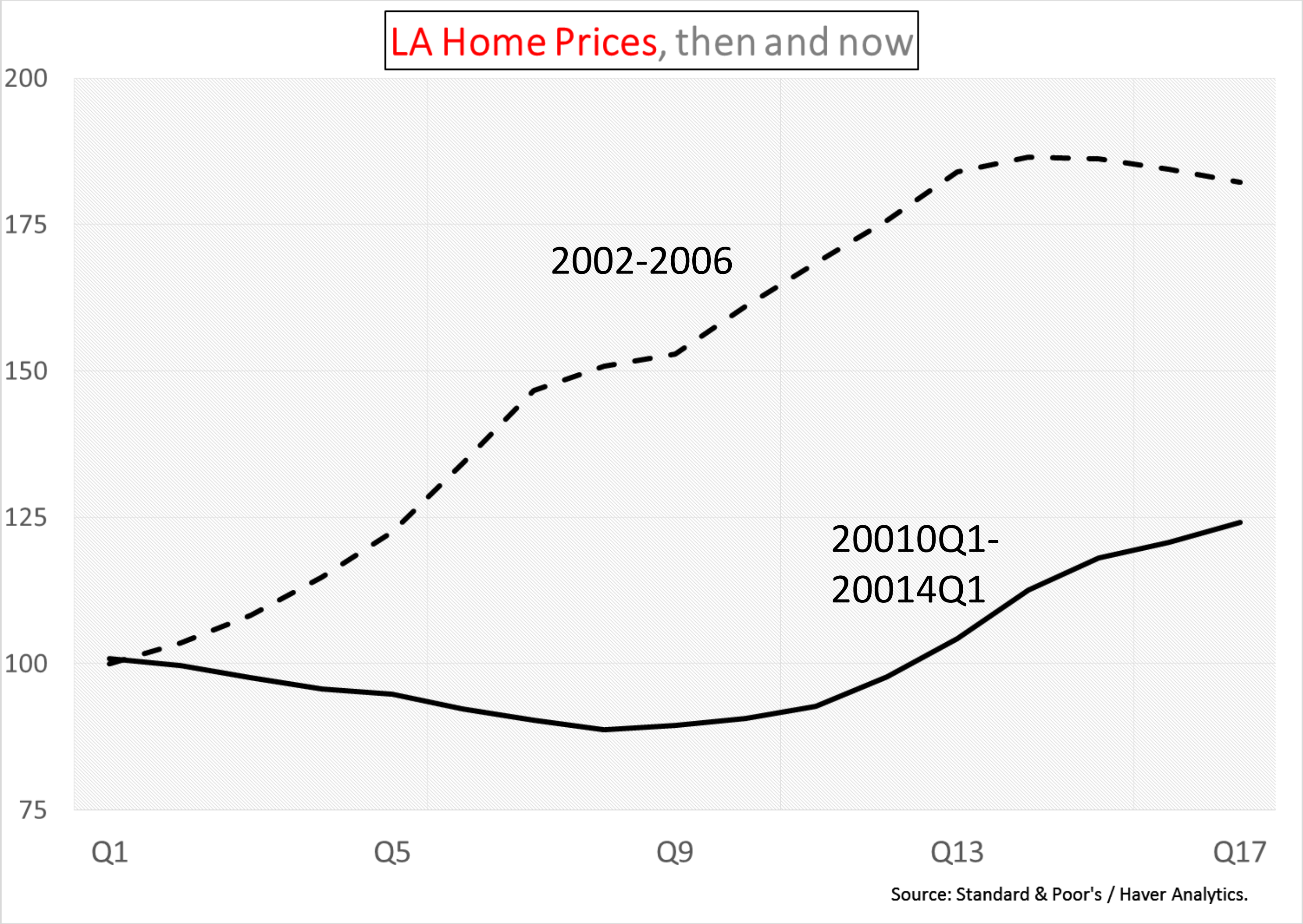
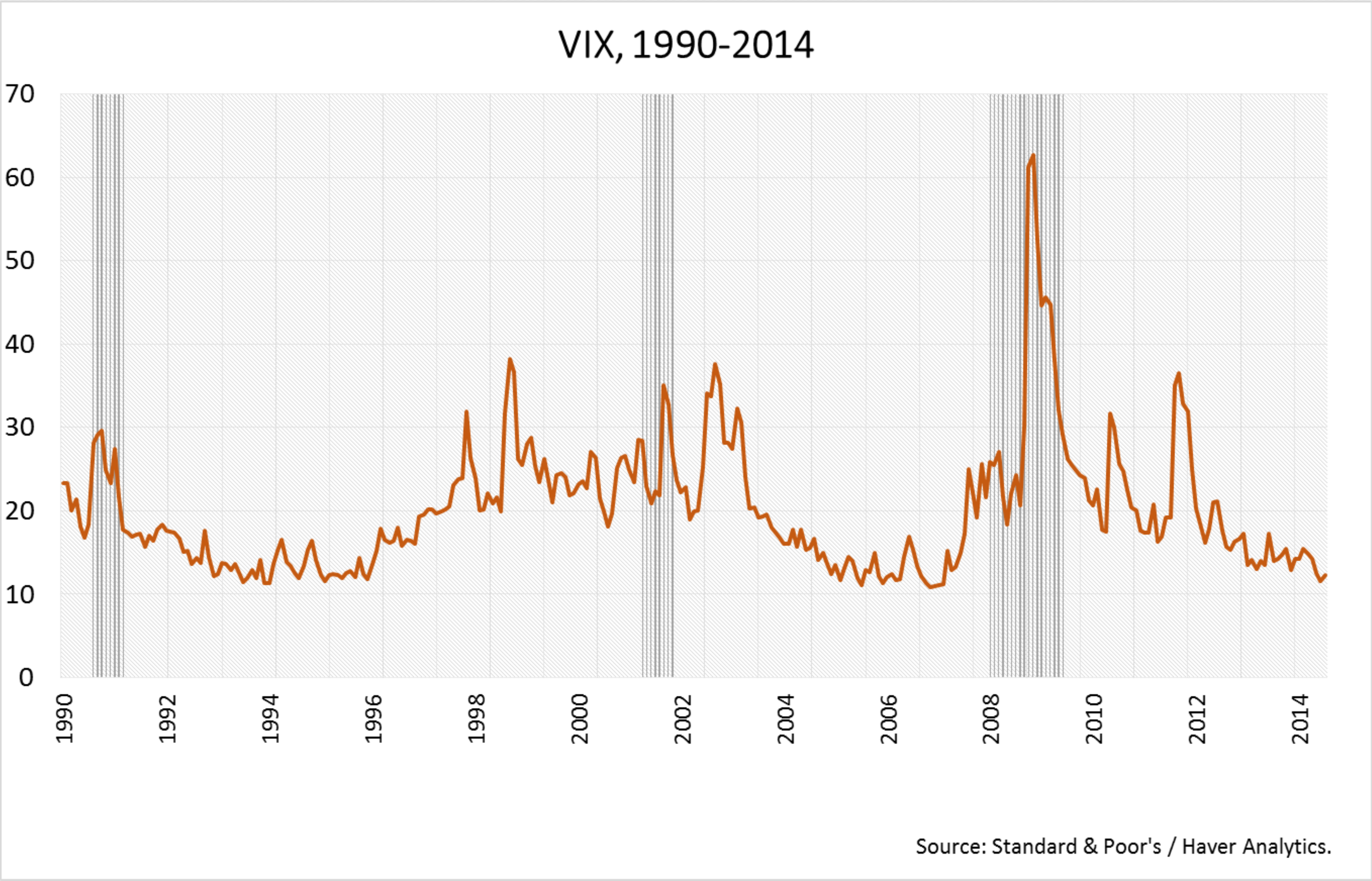


Where we are now: excesses?



Where we are now: institutional memory

- Are excesses building up?
  - Stock prices are up, but that doesn't always mean a bubble (1949-1973).
  - Home prices are again rising, but not to recent highs.
  - Volatility measures suggest calm, even in light of recent issues (European debt, Ukraine, etc.).
  - Is this time different?
    - How long is memory (*institutional memory hypothesis*)?

In case you think this time is different

- Derivatives in the early 1990s:
  - Procter & Gamble "lost" $157 million on a derivative the value of which depended on the difference between a 5-year T-bond price and a 30-year T-bond yield.
  - Orange Country lost $1.7 billion on a $7.4 billion fund.
  - Gibson Greetings "lost" over $20 million on a series of derivatives that started with a "plain vanilla" swap, included a "knock-out" call option, and ended with a "wedding band" swap.

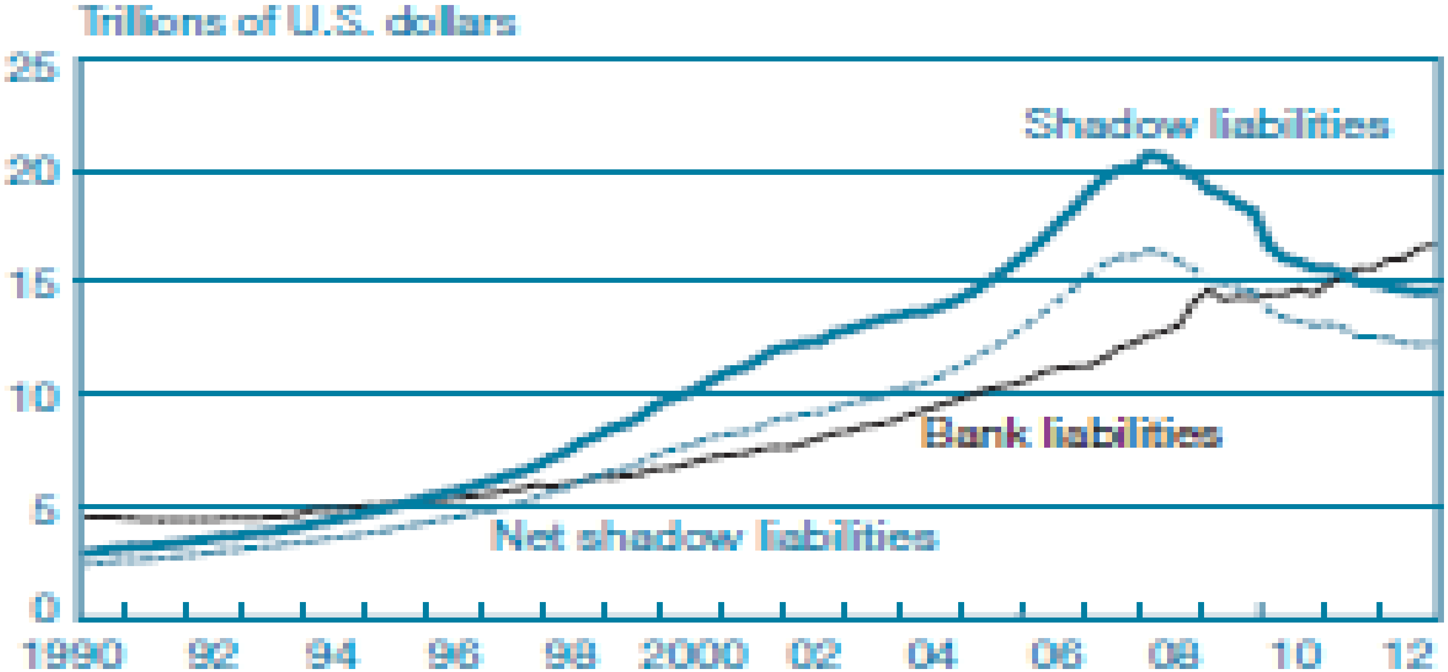
Concluding comments

- The financial crisis had a lot of causes.
- Investor behavior has not received a lot of attention.
- Overconfidence and rational inattention could have contributed to the increases in risk in the financial system in the early part of the century.
  - The problems may have been exacerbated because some participants were investing other people's money.

The rise of the shadow banking system

- The SBS is a term for financial institutions that provide alternatives to traditional bank financing.
- Examples of shadow banking include:
  - Commercial paper including ABCP
  - Repurchase agreements (repos)
  - Structured finance (including mortgage-backed securities (MBS) and asset-backed securities (ABS))

Shadow Bank Liabilities versus Traditional Bank Liabilities



Sources: Board of Governors of the Federal Reserve System, "Flow of Funds Accounts of the United States" (as of 2011:Q3); Federal Reserve Bank of New York.