



***“The Role of ‘Financial Myths’
in Financial Crises”***

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Good morning. I'd like to thank Boston University and all the conference organizers, particularly Larry Kotlikoff, for the opportunity to be here to discuss lessons learned from the global financial meltdown.*

Everyone knows that the past three years have been a particularly difficult period for global financial market stability and for the global economy. The financial crisis clearly showed

* *Of course, the views I express today are my own, not necessarily those of my colleagues on the Board of Governors or the Federal Open Market Committee (the FOMC).*

the dramatic impact that financial problems can have on the real economy. And in spite of a fair amount of focus on financial stability prior to the crisis, events highlighted that the private and public sectors both here and abroad were not fully prepared for the kinds of financial shocks we experienced.

Today I'd like to discuss the role of what I call "financial myths" in creating financial crises. By financial myths I mean the beliefs, held by most market participants and by regulators, that certain outcomes are so unlikely to occur that they can basically be ignored – essentially that *low* probability events, based on historical experience, can be reclassified as *zero* probability events. When these sorts of widespread assumptions – these financial myths – turn out to be wrong, most financial-market participants find themselves poorly positioned for the resulting shocks. The result is insolvency of groups of firms and substantial uncertainty – uncertainty about the exposure of many firms to direct losses, or to indirect losses created by their counterparty exposure to other firms that suffer direct losses.

These so-called financial myths are not unique to this time period, or to this country. I would like to briefly mention two among the numerous examples from recent history – examples where financial myths were important in helping to create a potential crisis. The first example involves the assumption of many in Japan that real estate prices could not fall in the late 1980s. The second involves the assumption, in the late 1990s, that the Internet had completely changed how we should think about company valuation.

I will then briefly mention four financial myths that played critical roles in the recent financial crisis. These include the following assumptions:

- that a diversified portfolio of US real estate had little risk of falling in value;

- that Triple-A rated securities based on mortgages were so well protected by the structure of the securitization that they posed little risk even if real estate prices *did* fall;
- that the evolution of many financial institutions to an “originate to distribute” model of lending and securitization meant there was little risk exposure to declining real estate prices; and,
- that there was little risk of a “run” on organizations like investment banks that relied on short-term, collateralized borrowing.

Then to conclude I’d like to briefly mention what we can and must do to reduce the risks resulting from these sorts of financial myths, going forward. I believe that financial stability will, in the future, be better served as we implement some of the protections afforded by the Dodd-Frank Act; but I also suspect that doing better at protecting against various financial myths ultimately requires a cultural change. As a discipline, risk management has been too willing to accept that historical statistical relationships will be stable. Ideally, risk management practices would lead us to ask things like “What will happen if the historical relationship breaks down?” and “What assumptions would need to change for them to break down?”

Also, I will touch on the fact that challenging assumptions and understanding the risk inherent in relying solely on historical experience should not be the responsibility of the risk manager alone. These things also need to be better ingrained in CEOs, members of boards of directors, and regulators. I believe we need to do a much better job of using so-called stress tests to challenge commonly held views, so that boards of directors and regulators of firms better understand the fundamental drivers of risks in organizations and in the financial system.

Financial Myths in Recent History

Let me look back to the time period before the most recent crisis and share two examples of financial myths – and, unfortunately, their messy demise. And I would emphasize that these are just two of many examples of the phenomenon.

First, I'll note that during the late 1980s, New England began to experience substantial declines in residential and commercial real estate prices. My research at that time at the Boston Fed was focused on how problems at financial institutions could disrupt credit availability. Interestingly, in 1989 I was visited by a variety of Japanese academics and government officials. They wanted to understand how we had missed the signs of an overheating real estate market.

As **Figure 1** indicates, it was shall we say an interesting time for researchers from Japan to ask such a question. However, when I inquired about the rapid increase in real estate prices in their country, I always received the same answer – Japan is an island nation and had limited buildable lots, and that prevented real estate prices from declining. This view was very widely held. However, as you can see in **Figure 2**, that widely held financial myth was soon shattered. Unfortunately, the result of this belief was eventually the crippling of some of the world's largest financial institutions, a long period of subpar economic growth in Japan, and eventually a problematic deflation that Japan struggles with to this day.

A second example is provided by the growth of the Internet, and in particular the growth in “dot-com” stock valuations, in the late 1990s. As **Figure 3** shows, there was a substantial run-up in stock valuations during this period. At the time I had conversations with a variety of financial professionals in Boston who made the argument that traditional valuation measures no

longer applied. The view assumed by many was that valuation of firms should be based on clicks of a computer mouse rather than earnings, either current or expected in the future.

As **Figure 4** shows, such enthusiasm for a new way of valuing companies was short-lived. But importantly, the substantial decline in Internet-related stocks did not create a financial crisis. Many of the positions were equity financed – so, while significant wealth was lost, financial institutions and financial markets did not suffer severe repercussions. That loss in wealth helped ignite the 2001 recession, but it was a much more mild downturn than the one we have experienced of late. With the financial infrastructure not significantly damaged, the impact was much less severe than if individuals and firms had taken highly leveraged positions.

Financial Myths in the Recent Crisis

Now I'd like to describe, and present some charts that illustrate, four financial myths that played a role in the recent crisis.

Myth 1 – Diversification eliminated the risk of declines in residential real estate holdings

Despite the experience of Japan's real estate in the 1990s, and substantial declines in real estate prices in many regions of the United States throughout history, *many* commentators argued that a significant, widespread housing-price decline in a country as large and varied as the United States had not happened historically and was very unlikely to occur.

That logic was based on what you see in **Figure 5**, which highlights that there had been significant declines in *some regions* of the country – but the declines were coincident with

increases elsewhere. As **Figure 6** shows, there had not been recent, sustained declines in *national* real estate prices. This observation, combined with the increased securitization of real estate into diversified national portfolios, gave buyers – and those rating the securitizations – confidence that the “real estate cycle risk” was substantially mitigated through diversification.

But, as **Figure 7** shows, the assumption that a geographically diversified portfolio of real estate assets would avoid price declines proved wrong. While prices nationally had not experienced a substantial decline in the past, for three years the U.S. has experienced substantial and sustained declines in prices.

Some of my colleagues point out, probably appropriately, that given the historical data the failure to anticipate nationwide house prices falling is largely understandable. It was certainly very widespread. What may be more surprising is that in the 2005 timeframe, when many were expecting house prices to slow down or flatten, there was not much by way of risk mitigation undertaken.

Myth 2 – Triple-A mortgage securities carried little risk

The securitization market – that is, the market for securities based on various slices of pooled mortgages – grew dramatically over the past decade. One reason for the growth in securitization was investor interest in, and demand for, securities with little credit risk but returns above those of Treasuries.

Many buyers of such securities felt sure of two things. First, that national real estate prices were quite unlikely to fall – in other words, our Myth 1. Second, that even in the highly

unlikely event that the price of a national portfolio *did* fall, they would be protected by the structure of the securitization. Securitizations were structured so that any losses were first borne by lower-rated securities built from the pool of underlying mortgages. Given the structure, the assumption was that lower-valued securities would take all potential losses if borrowers defaulted. Many – but not all, of course¹ -- assumed that home-price declines and related defaults would have to be very extreme before the highest rated, Triple-A securities were impacted. Under this assumption these securities fully deserved the Triple-A rating given by the rating agencies.

I should note that making this assumption about Triple-A rated mortgage backed securities (MBSs) proved less problematic than making this assumption about the recombined lower tranches of mortgage-backed securities that were billed as Triple-A rated collateralized debt obligations (CDOs).² But many investors focused not on the security's underlying components, merely on the ratings.

Figure 8 shows that Triple-A securities remained at par values as the securitization boom gathered steam. However, **Figure 9** shows that when the severity of the decline in house prices manifested itself, even the Triple-A rated mortgage securities collapsed in value. The combination of illiquidity, growing concerns with the real estate market, and ebbing confidence in the ratings resulted in dramatic declines in the pricing of Triple-A securities as the financial crisis worsened.³

Myth 3 - The “originate to distribute” model limited the balance-sheet risk of banks

Over the decade preceding the crisis, large commercial and investment banks had become increasingly involved in securitizing mortgage assets. They argued that this provided a steady stream of fee income but generated little risk for the bank. While they packaged mortgages, they were not retaining the risk in their own portfolio – instead, the risk was taken by those that purchased the mortgage securities, particularly the lower-rated mortgage securities.

What was frequently ignored by many was the rapid growth of Triple-A mortgage securities holdings elsewhere within the banks, as well as in off balance sheet structures. While these off balance sheet structures were considered separate entities, banks found the potential reputational risk of not supporting their sponsored off balance sheet risk sufficiently great that many ended up supporting these off balance sheet structures. In a sense, “originate to distribute” was, in practice, something more like “originate to hold, loosely, somewhat off to the side.”⁴

In addition, risk managers, bank management, and regulators were sufficiently lulled by Myths 1 and 2 to develop their faith in Myth 3. The unfortunate result was that these banks were not as protected from falling housing prices as many had assumed, and this contributed to the substantial decline in stock prices and the need for government support for many of these large financial intermediaries.

Myth 4 – Investment banks were not subject to runs, because their liabilities were collateralized

There has long been an understanding, and indeed a regulatory presumption, that banks could be subject to “runs,” resulting in a need for both deposit insurance and a heavily regulated environment to reduce that risk. At the same time, it had largely been presumed that investment banks were better protected against such runs. While the balance sheets of investment banks had substantial short-term liabilities, many of them were collateralized. Investment banks would buy longer-term securities but finance them with short-term borrowing (using repurchase agreements). It was assumed that because there was collateral backing up the loans, borrowers were protected and would not run.

Financing securities with short-term borrowing allowed investment banks to substantially expand their balance sheets, as shown in **Figure 10**. However, the lenders in this market were other banks, money-market funds, and hedge funds. As questions about the value of the collateral became more prominent, and the solvency and liquidity of investment banks became a greater concern, many short-term lenders abandoned the market. **Figure 11** shows the dramatic change that occurred. The inability to finance large securities holdings made the traditional model of investment banking unsustainable, and this contributed to the failure of investment banks and the merger under duress, or conversion to bank holding companies, of others.

What Can We Do about Financial Myths, Going Forward?

We plumb this history to help us understand what we can do about financial myths, going forward, and how we can avoid their damaging impact.

As the previous slides have shown, taking too much confidence in historical data repeating in the future can be dangerous – to the financial health of institutions and the financial system. That said, we are probably not likely to see a sea-change in the tendency for overconfidence in and reliance on recent statistical regularities.

However, there are a variety of market participants that could better protect their own interests – and the financial system – if they spend more time understanding the key assumptions being made in financial modeling, and have a clearer understanding of what could happen if those assumptions were invalid. Properly done, stress testing should provide valuable information to organizations on key risk drivers. This needs to be more than feeding a handful of macroeconomic assumptions into a model. It requires an understanding of the events that could lead to that macroeconomic outcome, and what other indirect effects might be likely to occur.

Who should be responsible for regular, thoughtful stress testing? Risk managers, CEOs, and boards of directors should all understand key risk drivers – and should consider whether a stress scenario is sufficiently severe, and whether the direct and indirect effects are reasonably captured. Rating agencies and stock analysts should be increasingly demanding better quality stress tests, and that the results be made available to them. Finally, regulators should be able to compare and contrast the quality of stress tests across organizations and hold accountable those organizations that are not keeping up with their peers.

As I mentioned at the outset, challenging assumptions and understanding risks should not only be the responsibility of the risk manager. These things also need to be better ingrained in CEOs, members of boards of directors, and regulators.

Operationalizing this point is not going to be easy, but it is critical. At a fundamental level, debunking a myth requires individuals to go against strongly and widely held beliefs, to convince decision-makers, and to build consensus. For this to happen we may need significant changes in the governance of risk management at banks and other parties in the financial system. Put more plainly, we need to think about an environment where those in the position of most influence have the incentive to “poke holes” in myths via robust stress tests, and not the incentives to override their risk managers when the stress-test implications are not to their liking, or risk a near-term loss of clients or market share.

Concluding Observations

New financial myths are regularly created. In closing, I will just speculate on where some may exist that interested parties should be exploring, now.

- ***Potential Myth 1 – Sovereign debt problems will not be disruptive to the world economy.*** Not long ago, the sovereign debt problems were viewed as manageable and confined to one country. However, as interest rate spreads have widened – as shown in **Figure 12** – investors are highlighting that problems in many countries have yet to be resolved. While I believe the most likely outcome is that there are no serious disruptions, interested parties should diligently consider scenarios that could be disruptive, involving various countries.

- **Potential Myth 2 – State and local financing problems will not be disruptive to the national economy.** While much attention has been given to problems in state and local finances, it is generally assumed that the capacity exists to resolve these problems. While I expect these issues will be resolved without widespread or cascading problems, we should consider what scenarios could emerge if political impasses result in more disruptive outcomes.

These are just two of many potential scenarios that are worth exploring. However, I would add that the recent financial crisis highlighted that *unlikely* events can happen, and when they do, the outcomes can be quite costly for everyone. So the need for better risk management is clear. Fortunately, the opportunity is there as well.

Thank you.

NOTES:

¹ Boston Fed researchers note some examples of contrary analysis of Subprime ABS structures written in 2005 suggesting vulnerability to even a 5 percent fall in house prices. See "Making Sense of the Subprime Crisis" by Paul Willen with Kristopher S. Gerardi, Andreas Lehnert and Shane Sherlund (Brookings Papers on Economic Activity, Fall 2008).

² Collateralized debt obligations (CDOs) constructed from subprime asset-backed securities (ABS) are perhaps the most potent example of underestimation of risk. Triple-A rated CDOs did more damage to balance sheets than Triple-A rated ABS.

³ Holding to maturity may have moderated some losses, but many did not have that luxury. Investors needing to sell with the threat of downgrades suffered substantial losses, particularly in an illiquid environment.

⁴ Others have called the approach "originate to hide."

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Overview of Comments

- Defining “financial myths”
- Two examples of their role in a crisis:
 - Japanese real estate
 - “Dot-com” company valuations

Overview of Comments Cont...

- Four financial myths:
 - Diversified US real estate portfolio had little risk of falling in value
 - Triple-A securities were protected by securitization structure – little risk even if real estate prices fell
 - The “originate to distribute” model meant little exposure to risk of declining real estate prices
 - Little risk of a “run” on organizations like investment banks

Overview of Comments Cont...

- Reducing the risks resulting from these financial myths
- Potential myths

Defining Financial Myths

- Favorable trends in historical data are assumed to continue
- Because outcomes are unlikely, they are largely ignored
- Investor behavior does not incorporate the potential that an unlikely outcome can still occur

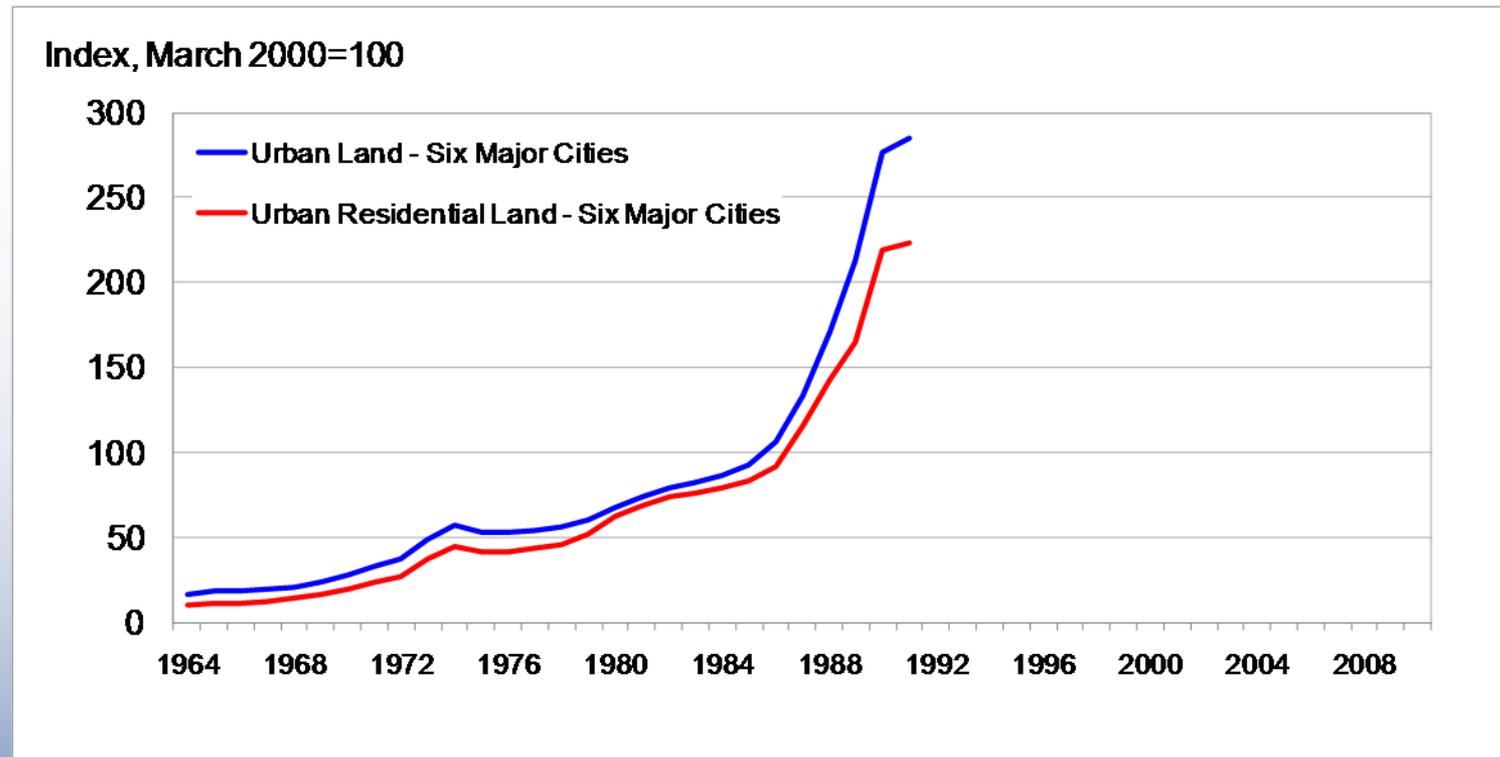
Financial Myths in Recent History

Example 1: Japanese Real Estate

Figure 1

Japanese Urban Land Price Indexes

March 1964 - March 1991

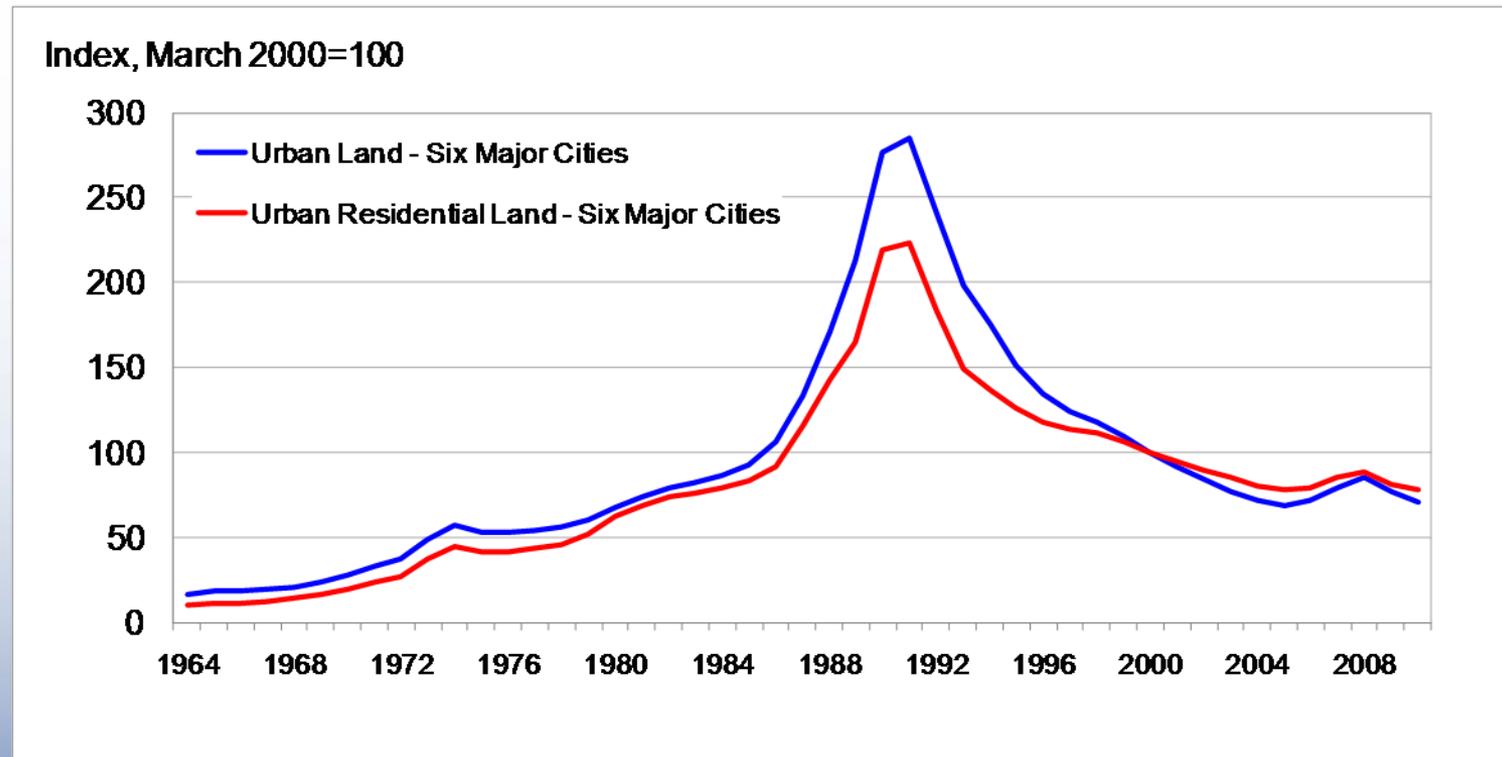


Source: Japan Real Estate Institute

Figure 2

Japanese Urban Land Price Indexes

March 1964 - March 2010



Source: Japan Real Estate Institute

Financial Myths in Recent History

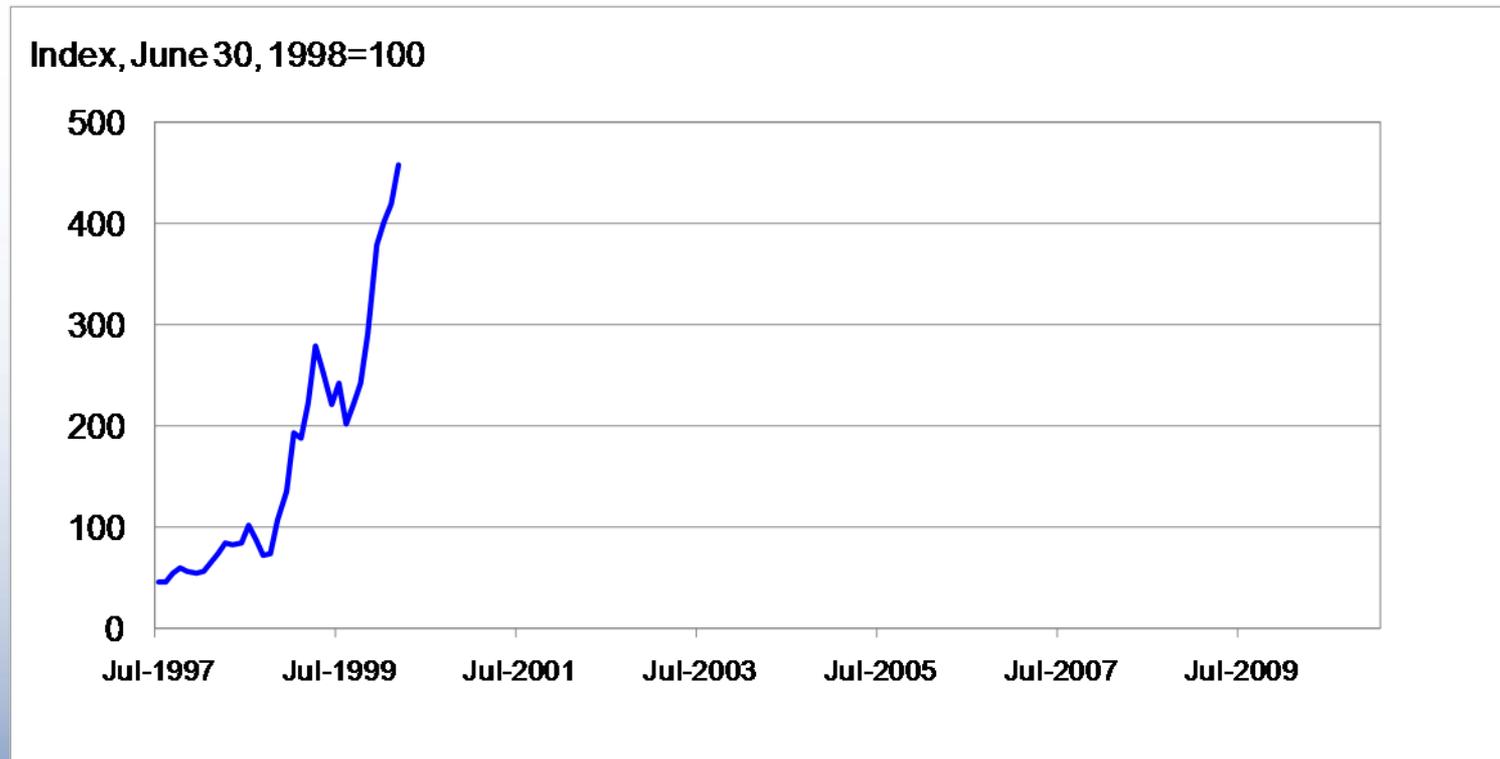
Example 2:

“Dot-com” company valuations

Figure 3

Dow Jones Internet Composite Stock Price Index

July 1997 - March 2000



Source: Dow Jones, WSJ / Haver Analytics

Figure 4

Dow Jones Internet Composite Stock Price Index

July 1997 - January 2011



Source: Dow Jones, WSJ / Haver Analytics

Financial Myths in the Recent Crisis

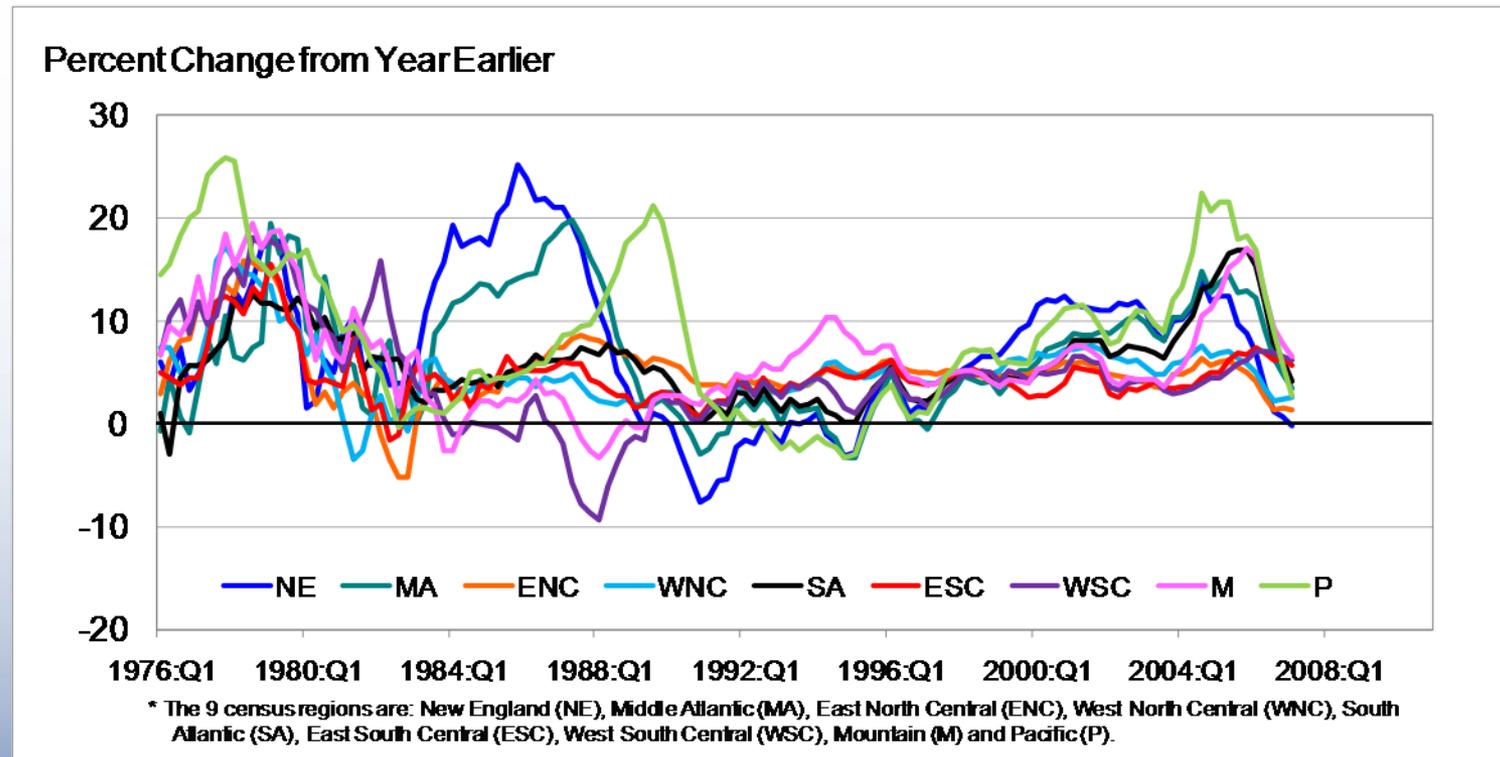
Myth 1:

Diversification eliminated the risk of declines
in residential real estate holdings

Figure 5

Growth in Nominal House Prices by Census Region*

1976:Q1 - 2007:Q1

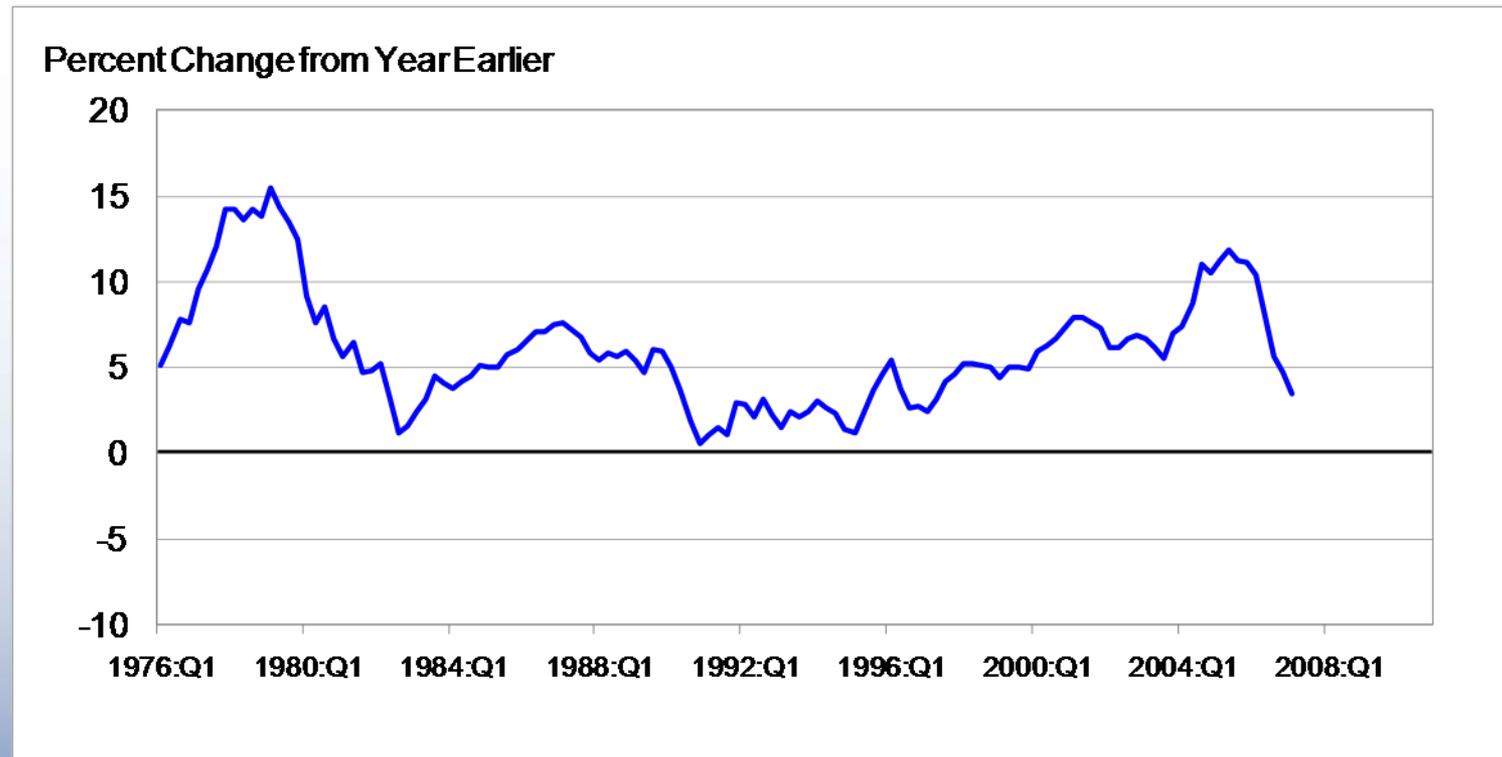


Source: FHFA / Haver Analytics

Figure 6

Growth in Nominal US House Prices

1976:Q1 - 2007:Q1

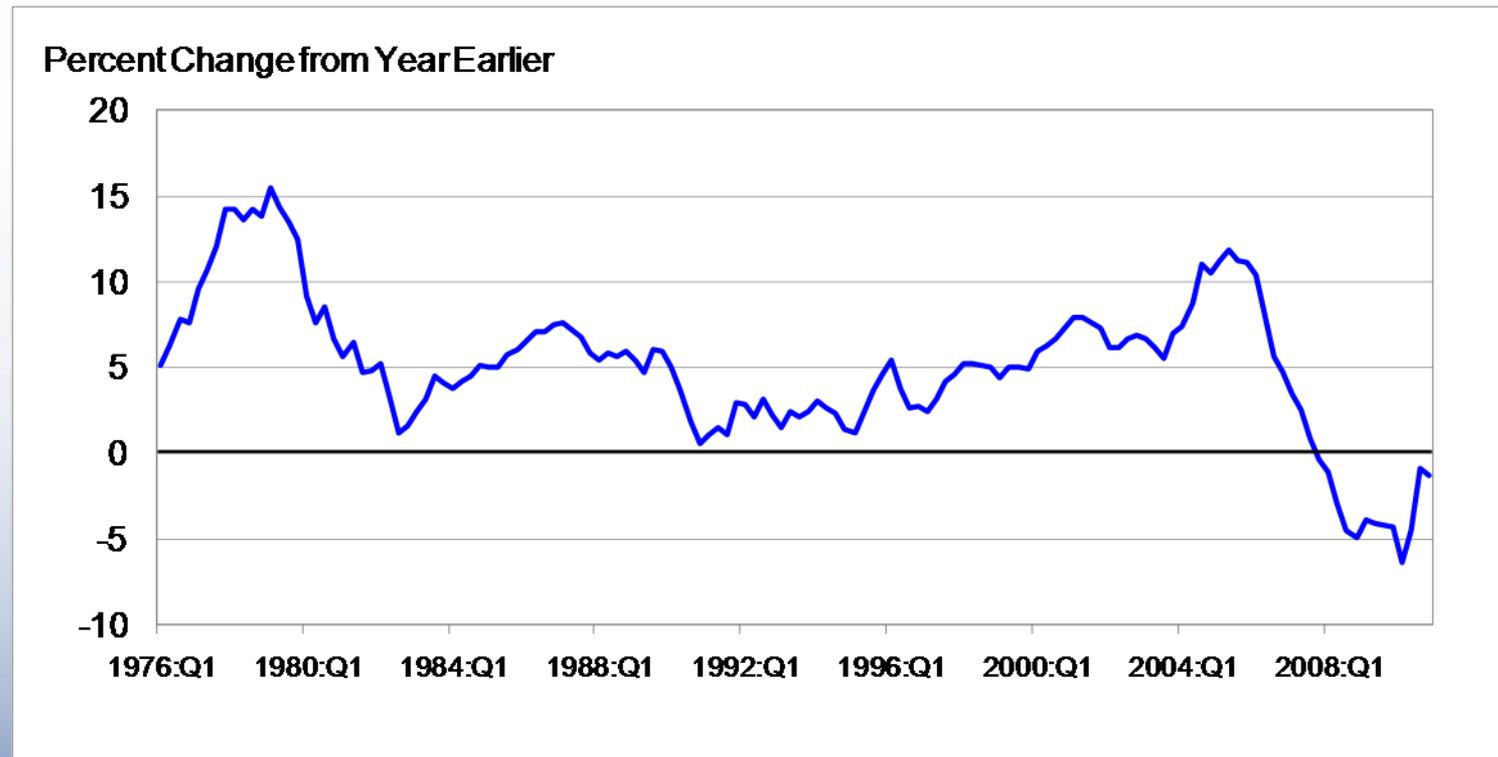


Source: FHFA / Haver Analytics

Figure 7

Growth in Nominal US House Prices

1976:Q1 - 2010:Q4



Source: FHFA / Haver Analytics

Financial Myths in the Recent Crisis

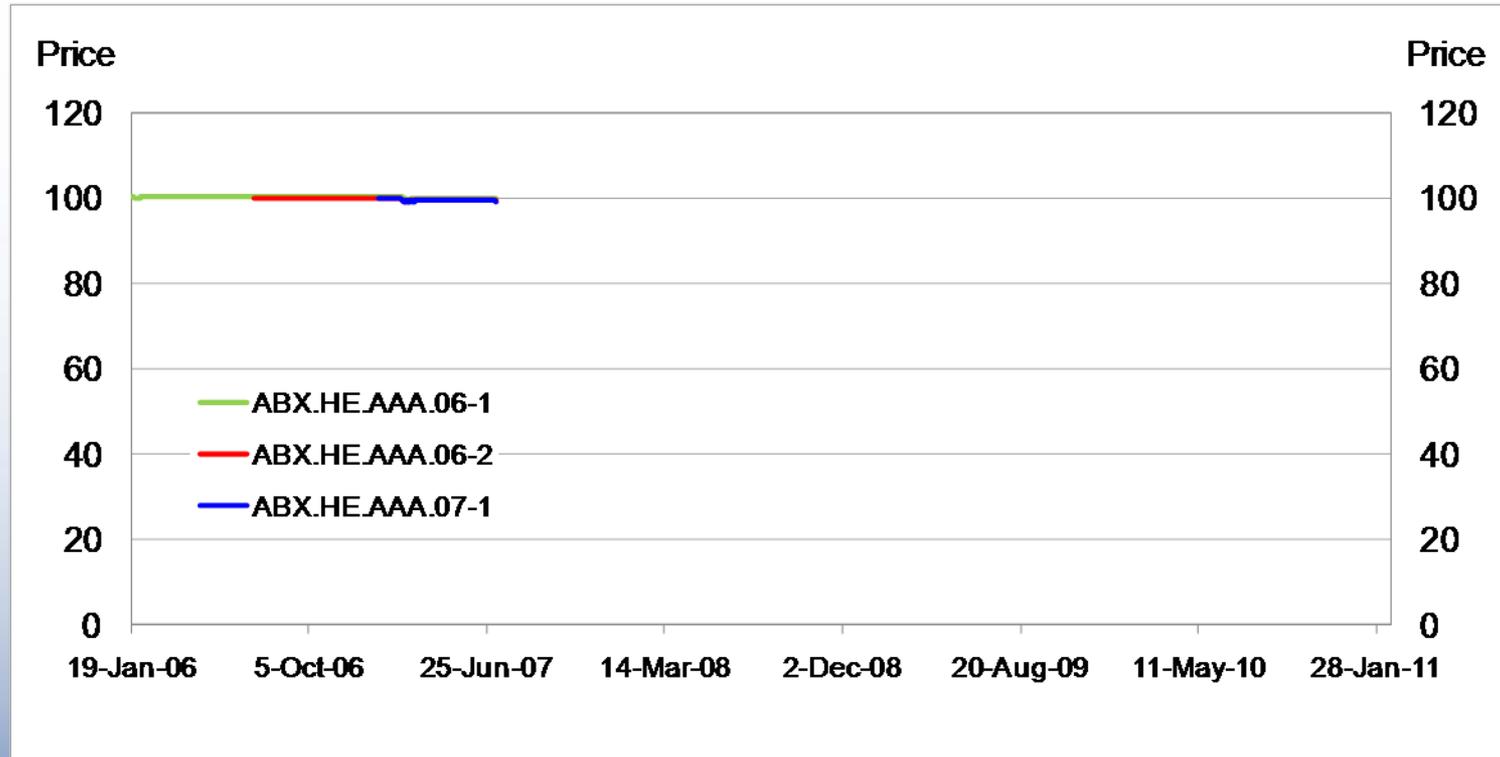
Myth 2:

Triple-A mortgage securities carried little risk

Figure 8

Markit ABX.HE AAA Indexes

January 19, 2006 - July 9, 2007

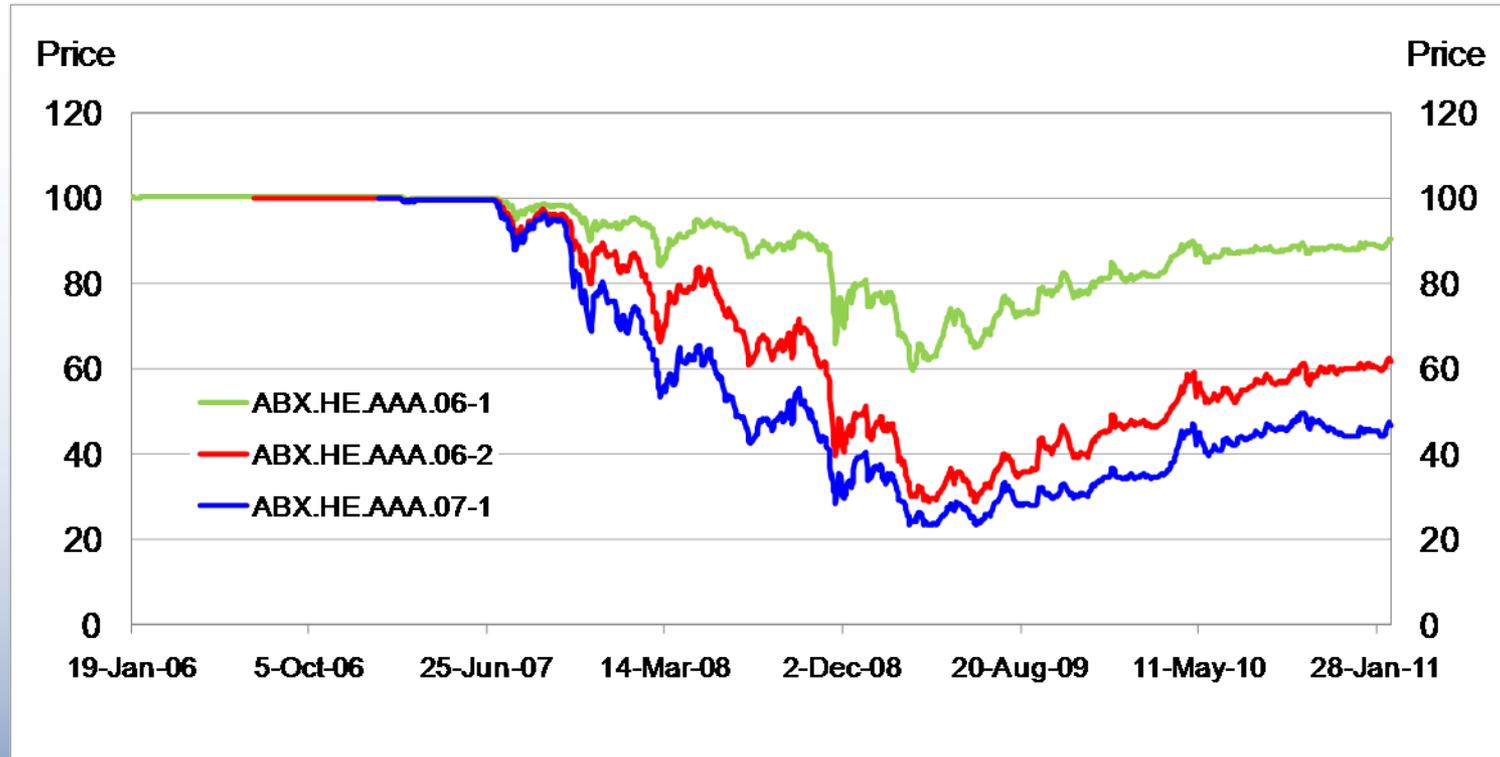


Source: Markit

Figure 9

Markit ABX.HE AAA Indexes

January 19, 2006 - February 18, 2011



Source: Markit

Financial Myths in the Recent Crisis

Myth 3:

The “originate to distribute” model limited the balance-sheet risk of banks

- “Originate to distribute” model was intended to produce fee income with little risk – assets not held on balance sheet
- Ignored: holdings “elsewhere” and off balance sheet
 - Reputational concerns caused off balance sheet vehicles to become on balance sheet problems
- Lulled by Myths 1 and 2; developed faith in Myth 3

Financial Myths in the Recent Crisis

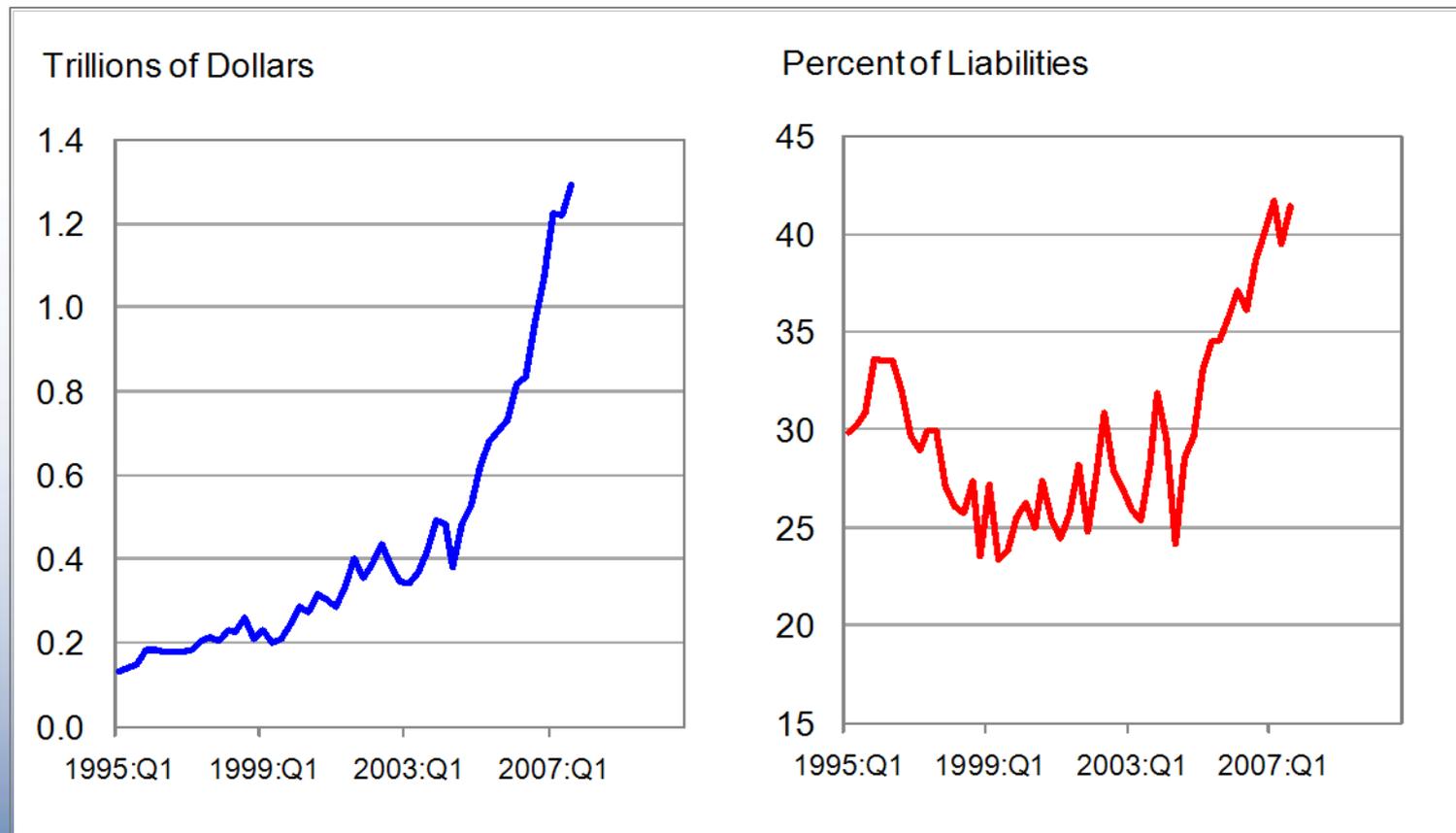
Myth 4:

Investment banks were not subject to runs,
because their liabilities were collateralized

Figure 10

Security Brokers and Dealers: Fed Funds and Security Repurchase Agreements

1995:Q1 - 2007:Q3

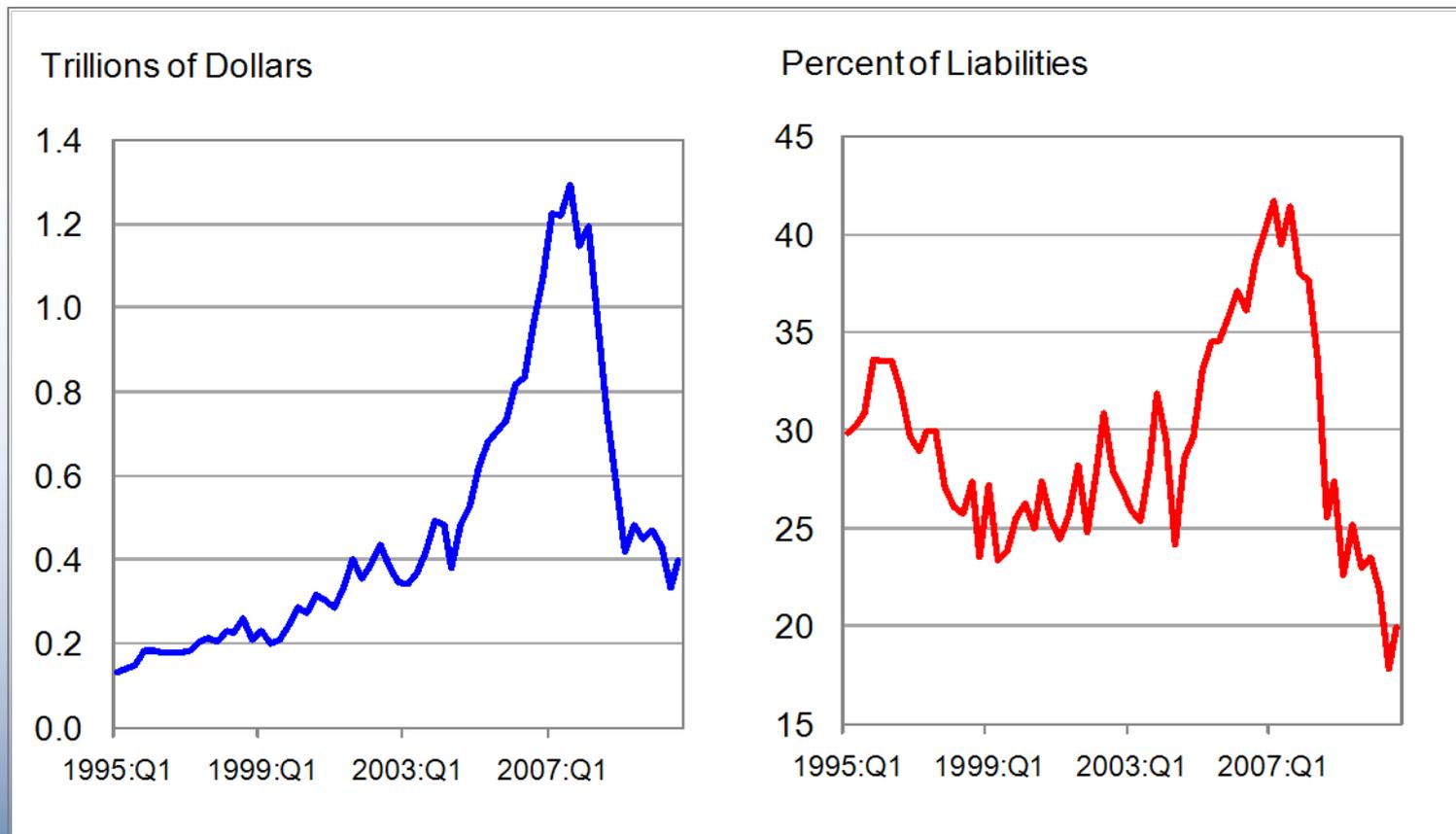


Source: Federal Reserve Board / Haver Analytics

Figure 11

Security Brokers and Dealers: Fed Funds and Security Repurchase Agreements

1995:Q1 - 2010:Q3



Source: Federal Reserve Board / Haver Analytics

Going Forward

- Note the over-confidence in recent historical data has repeated itself numerous times
- We need more focus on understanding assumptions, and what happens if they are invalid

Going Forward Cont...

- Stress testing, properly done can be a structured way to question assumptions
 - Expand responsibility / involvement of risk managers, CEOs, boards, ratings agencies, stock analysts, regulators
- Challenge of operationalizing
 - May require changes in governance of risk management

Potential Financial Myths, Going Forward

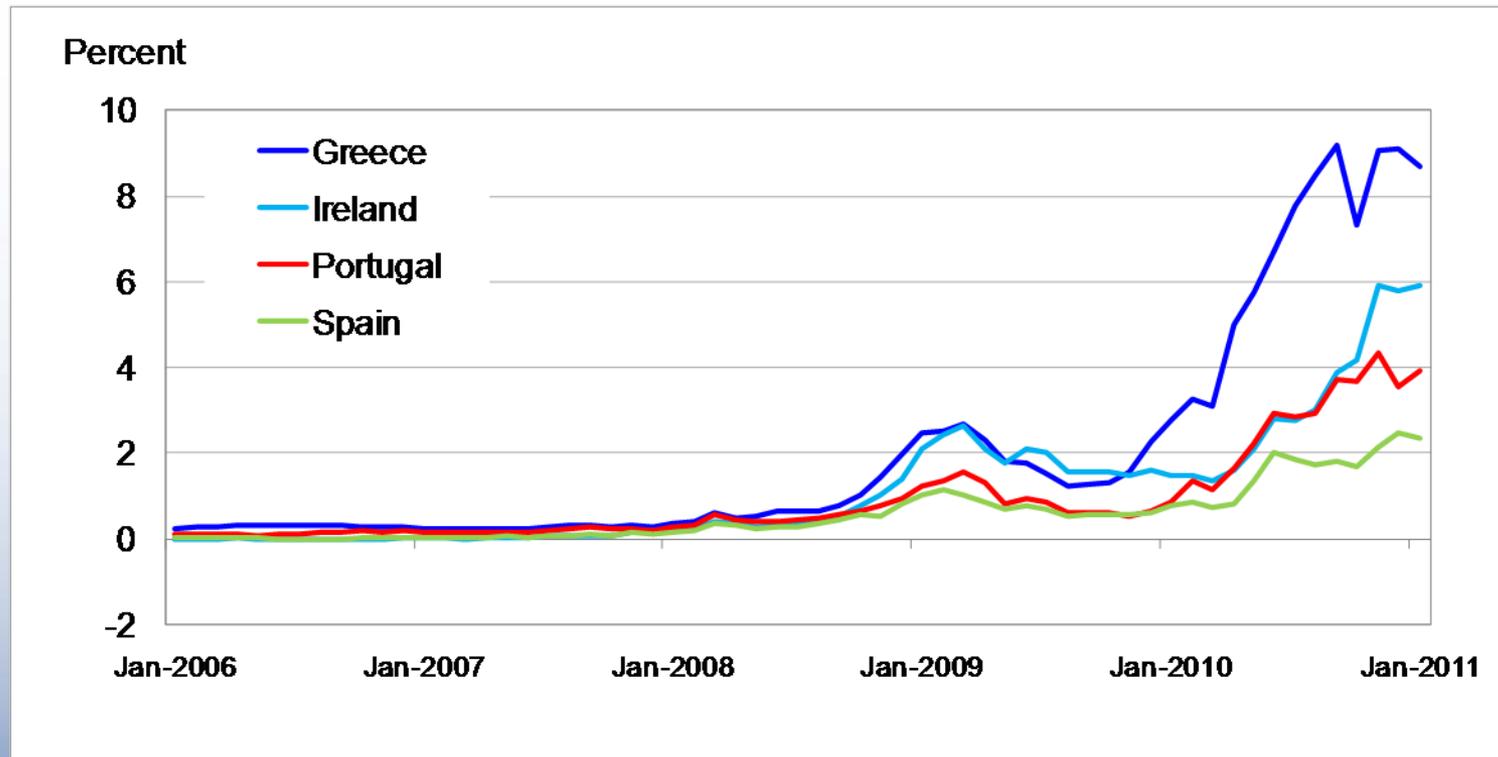
Potential Myth 1:

Sovereign debt problems will not be disruptive to the world economy

Figure 12

Spread: Ten-Year Government Bond Yields to Ten-Year German Government Bond Yield

January 2006 - January 2011



Source: Financial Times / Haver Analytics

Potential Financial Myths, Going Forward

Potential Myth 2:

State and local financing problems will not be disruptive to the national economy