Lessons Learned from the Financial Crisis

What happened and where are we now?

Julie L. Stackhouse
Senior Vice President

The views expressed in this presentation are the views of Julie Stackhouse and not necessarily the views of the Federal Reserve Bank of St. Louis or the Federal Reserve System.
Pre-event poll question
Although the Great Recession officially ended in June 2009, there are still many lingering issues in the U.S. economy. How have your economic circumstances changed since June 2009?

They have improved: 30.1%
They have remained the same: 34.9%
They have deteriorated: 34.9%
Pre-event poll question:
The financial crisis led to the passage of sweeping legislation in June 2010 that overhauled many aspects of our financial regulatory system. As a result of the changes, how confident are you that the U.S. can avoid or at least lessen the impact of future shocks to our financial system?

- Very confident: 1.2%
- Slightly more confident: 31.3%
- Neither more nor less confident: 33.7%
- Slightly less confident: 12.0%
- Not confident at all: 22.9%
Pre-event poll question

In the aftermath of the financial crisis, Congress convened a Financial Crisis Inquiry Commission to study the causes of the financial and economic crisis in the U.S. Which of these causes was most significant in your opinion?

- Collapsing mortgage-lending standards and the mortgage securitization pipeline that "transported toxic mortgages" to investors around the globe: 60.2%
- Deregulation, particularly in regards to the over-the-counter derivatives market: 24.1%
- Failures of the credit rating agencies to appropriately rate mortgage-related securities: 16.9%
- Interest rates that were "too low for too long" leading to a credit bubble: 9.6%
- U.S. government housing policy: 18.1%
We’ve learned a little about you. Now let’s talk about the Federal Reserve!

The Fed is the Central Bank of the United States. It was founded by Congress in 1913 to provide the nation with a safer, more flexible, and more stable monetary and financial system. Over the years, its role in banking and the economy has expanded. Today, the Federal Reserve's duties fall into four general areas:

<table>
<thead>
<tr>
<th>Conducting the nation’s monetary policy by influencing the monetary and credit conditions in the economy in pursuit of maximum employment, stable prices and moderate long-term interest rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervising and regulating banking institutions to ensure the safety and soundness of the nation’s banking system and to protect the rights of consumers</td>
</tr>
<tr>
<td>Maintaining the stability of the financial system and containing systemic risk that may arise in financial markets</td>
</tr>
<tr>
<td>Providing financial services to depository institutions, the U.S. government, and foreign official institutions, including playing a major role in operating the nation’s payments system</td>
</tr>
</tbody>
</table>

The Federal Reserve’s Response to the September 11 Attacks

Source: Federal Reserve Board of Governors’ H.4.1 releases, July 5 to October 25, 2001
The Federal Reserve also played a major role in addressing the financial crisis of 2008.

“The financial crisis that gripped the United States last fall* was unprecedented in type and magnitude. It began with an asset bubble in housing, expanded into the subprime mortgage crisis, escalated into a severe freeze-up of the interbank lending market, and culminated in intervention by the United States and other industrialized countries to rescue their banking systems.”

Congressional Oversight Report on the Troubled Asset Relief Program, December 9, 2009

* Reference is to the fall of 2008
Let’s look back at what happened. Favorable mortgage rates made it easier to purchase a home.

**Mortgage Originations**

Quarterly figures for 2007 and 2008 expressed at an annual rate.

*Source: Inside Mortgage Finance, January 30, 2009*
And new nontraditional mortgage products made it easier for less creditworthy individuals to get a mortgage.

Mortgage Originations

Quarterly figures for 2007 and 2008 expressed at an annual rate.
Source: Inside Mortgage Finance, January 30, 2009
Subprime mortgages were high risk.

<table>
<thead>
<tr>
<th>Subprime Mortgages – 2005-2006 Vintages</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 78%</td>
</tr>
<tr>
<td>Subprime mortgages with adjustable rates</td>
</tr>
<tr>
<td>(including hybrids)</td>
</tr>
<tr>
<td>40%</td>
</tr>
<tr>
<td>Subprime mortgages with reduced</td>
</tr>
<tr>
<td>documentation</td>
</tr>
<tr>
<td>98%</td>
</tr>
<tr>
<td>Combined loan-to-value ratio</td>
</tr>
<tr>
<td>55%</td>
</tr>
<tr>
<td>Share of subprime mortgages that were</td>
</tr>
<tr>
<td>cash-out refines</td>
</tr>
<tr>
<td>90%</td>
</tr>
<tr>
<td>Share of subprime mortgages originated</td>
</tr>
<tr>
<td>through broker or wholesale channel</td>
</tr>
</tbody>
</table>

Source: Mortgage Bankers Association, CoreLogic
The mortgages were transformed into securities, making the risk difficult to see.

- Mortgage companies specializing in these obligations originated volumes of mortgages for sale to investment banks.

- The mortgages were grouped into payment and risk “tranches” and sold as “collateralized mortgage obligations.”
- Sometimes, other assets or enhancements were added to the collateralized mortgage obligation to create a “collateralized debt obligation.”
- Sometimes, the risk was hedged through use of “credit default swaps.”

- The securities were sold to investors around the world or held in the trading books of investment banks.
Cash-out refinance options and home equity loans also accelerated and reduced the amount of equity in the home.

Total Home Equity Cashed Out in Freddie Mac Mortgage Refinances

Billions of dollars

Source: Federal Home Loan Mortgage Corporation /Haver Analytics
Easy credit fueled demand for houses, causing prices to rise at an unsustainable pace, especially in 2005 and 2006.

Source: BLS and Loan Performance/Haver Analytics
Bank lending followed the housing boom.
And then, house prices began to fall.

House prices in the 2nd quarter of 2011 were 16.6 and 10.0 percent below their peak in the United States and St. Louis, respectively.
Rapidly accelerating losses led to a “run” in financial markets.

“Fear in the financial markets, which had been building, evolved into a full-blown panic in September, 2008. During a remarkable 19-day stretch, the federal government took over the two largest players in the mortgage market, allowed a large investment bank to go bankrupt, bailed out one of the world’s largest insurance companies, and steered a major financial institution through the largest bank failure in U.S. history.”

Congressional Oversight Report on the Troubled Asset Relief Program, December 9, 2009
By September 2008, the country faced the most significant financial crisis since the Great Depression.

Source: British Bankers Associations and Reuters
The crisis required a massive response.

**Federal Reserve**
- Provided funds (liquidity) to stabilize financial markets.

**United States Government**
- Funded the Troubled Asset Relief Program, the $800 billion economic stimulus, Cash for Clunkers, Homebuyer Tax Credit, extended unemployment benefits.

**Federal Deposit Insurance Corporation**
- Raised bank deposit insurance limits and provided other bank debt guarantees.
A picture of the Federal Reserve’s actions.

Federal Reserve Credit Easing Policy Tools
Weekly, January 2007 - August 2011, in millions of dollars

Source: Federal Reserve Board
While these actions avoided a collapse of the financial system...

**London Interbank Offered Rate (LIBOR) and Overnight Indexed Swap (OIS) Interest Rate Spread**
Weekly, January 2007 - August 2011, in basis points

*Source: British Bankers Associations and Reuters*
we did not avoid a “Great Recession.”

Growth Real GDP
Percent Change from Quarter A Year Ago,
NBER Recession Shaded in Grey

Source: Bureau of Economic Analysis
Home prices have collapsed in some markets.

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Market Peak</th>
<th>Market Trough</th>
<th>Peak to Current Percent Decline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boston</td>
<td>November 2005</td>
<td>April 2009</td>
<td>15.6</td>
</tr>
<tr>
<td>Chicago</td>
<td>March 2007</td>
<td>April 2011</td>
<td>32.0</td>
</tr>
<tr>
<td>Denver</td>
<td>March 2006</td>
<td>February 2009</td>
<td>10.9</td>
</tr>
<tr>
<td>Las Vegas</td>
<td>April 2006</td>
<td>June 2011</td>
<td>59.2</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>April 2006</td>
<td>May 2009</td>
<td>37.8</td>
</tr>
<tr>
<td>Miami</td>
<td>May 2006</td>
<td>February 2011</td>
<td>49.8</td>
</tr>
<tr>
<td>New York City</td>
<td>May 2006</td>
<td>March 2011</td>
<td>23.1</td>
</tr>
<tr>
<td>San Diego</td>
<td>March 2006</td>
<td>May 2009</td>
<td>38.6</td>
</tr>
<tr>
<td>San Francisco</td>
<td>March 2006</td>
<td>May 2009</td>
<td>38.9</td>
</tr>
<tr>
<td>Washington, D.C.</td>
<td>March 2006</td>
<td>March 2009</td>
<td>27.9</td>
</tr>
</tbody>
</table>

Source: Case-Shiller, through August 2011 release
Challenges remain in the housing market. 
Seriously delinquent or in-foreclosure mortgages are backlogged and must work through the pipeline.

Source: Lender Processing Services (LPS) and Federal Housing Finance Agency (FHFA)
Many households face negative equity positions.

Percentage of Mortgages with Negative Equity

- 50% or greater
- 25% to 50%
- 10% to 25%
- up to 10%
- N/A

Source: Corelogic, Q1 2011
Unemployment remains undesirably high.

Source: Bureau of Labor Statistics

Gray bars indicate recession periods
On the other hand, mortgage financing options have quickly corrected. The subprime mortgage market has largely disappeared.

Source: Calculations based on data from Lender Processing Service (LPS) Inc
And savings rates have shown signs of rebound.
What challenges lie ahead?

Real GDP Growth: Actual and Projection

Source: Bureau of Economic Analysis and Blue Chip Financial Forecasts®
What challenges lie ahead?

Gross Government Debt-to-GDP
Yearly, in %

Source: International Monetary Fund
The perspective of Fed Chairman Bernanke

“The growth fundamentals of the United States do not appear to have been permanently altered by the shocks of the past four years. It may take some time, but we can reasonably expect to see a return to growth rates and employment levels consistent with those underlying fundamentals.”

Jackson Hole, Wyoming, August 26, 2011
What have we learned?

High levels of debt, uncertain ability of borrowers to repay debt, and an expectation that housing prices will always increase (among other factors) created a comfort level that was misguided.

Spreading risk outside of the insured banking system and use of “insurance” policies such as credit default swaps did not result in risk diversification. Risk needs to be understood across all parts of the financial system – banks and nonbanks. The Dodd-Frank Act provides a means to do so.

Choices made in the short-run may have long-run consequences that need to be carefully considered.
Questions tonight will be taken by:

- Julie Stackhouse
- Dr. William Emmons, Assistant Vice President and Economist
- Dr. Silvio Contessi, Economist
- Mary H. Karr, Senior Vice President and General Counsel