

REPUBLICAN COMMISSIONERS  
ON THE FINANCIAL CRISIS INQUIRY COMMISSION

FINANCIAL CRISIS PRIMER

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QUESTIONS AND ANSWERS ON THE CAUSES OF THE FINANCIAL CRISIS

**Delivered as required by P.L. 111-21: The Fraud Enforcement and Recovery  
Act of 2009**

**December 15, 2010**

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On May 20, 2009, Public Law No. 111-21, the Fraud Enforcement and Recovery Act of 2009, was enacted into law, creating the Financial Crisis Inquiry Commission (FCIC). According to the Act, the FCIC was established to “examine the causes, domestic and global, of the current financial and economic crisis in the United States.” The law requires that today, December 15, 2010, the FCIC submit “to the President and to the Congress a report containing the findings and conclusions of the Commission on the causes of the current financial and economic crisis in the United States.”

This primer contains preliminary findings and conclusions released by Vice Chairman Bill Thomas, Commissioner Keith Hennessey, Commissioner Douglas Holtz-Eakin, and Commissioner Peter J. Wallison, and represents a portion of the findings and conclusions resulting from our work on the FCIC. As the transmission of the report of the FCIC to the President and Congress requires a majority vote of the Commission, these findings and conclusions do not constitute the Commission’s report. Rather, this document is an effort to reflect the clear intention of our enabling legislation.

Our views have been shaped, in part, by our knowledge of economics and financial markets generally. In the course of our examination, we have studied and drawn from the extensive work already available on the financial crisis. This crisis that we were tasked to study is neither the first nor likely the last of its type, and thus our examination of similar, previous episodes also informed our findings and conclusions. To that end, we see this document as a part of an already rich discussion of the causes of financial crises, both in the United States and around the world.

This document adds to that conversation rather than closing it. The two seminal works on the causes of the Great Depression, Milton Friedman and Anna Schwartz’s *A Monetary History of the United States, 1867–1960* and Ben Bernanke’s “Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression,” were published in 1963 and 1983, respectively, many decades after the crisis had ended. We anticipate that future generations will continue to provide additional insights into the causes of this financial crisis as well.

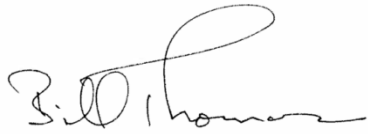
Further, we want to stress the extent to which our views have been influenced by the research and investigations conducted by the FCIC since our first meeting in September 2009. The work included conversations with economic historians, finance experts, and other academics, and hundreds of interviews with market participants, regulators, and government officials. While we may have organized and conducted some of these investigations differently given the choice, we have found many elements to be useful. We thank the FCIC staff for their hard work.

We have tried to distill those issues that we think are most important into a series of questions and answers. Different questions were included for different reasons, including those topics that, in our view, are commonly mischaracterized and those most relevant to future policy discussions. Certainly, this is not an exhaustive list.

Our framework reflects a central premise that the financial crisis was distinct from other recent important economic events, including the housing bubble and the prolonged economic recession. We believe that the financial crisis was, at its core, a financial panic that was precipitated by highly correlated mortgage-related losses concentrated at large financial firms in the United States and Europe. While the housing bubble, the financial crisis, and the recession are surely interrelated events, we do not believe that the housing bubble was a sufficient

condition for the financial crisis. The unprecedented number of subprime and other weak mortgages in this bubble set it and its effect apart from others in the past.

We look forward to continuing to participate in the ongoing dialogue on the causes of the financial crisis and providing our additional views as they develop.

A handwritten signature in black ink that reads "Bill Thomas". The signature is fluid and cursive, with a large loop at the end of the last name.

Vice Chairman Bill Thomas

A handwritten signature in black ink that reads "K. Hennessey". The signature is cursive and somewhat stylized, with a long horizontal stroke at the bottom.

Commissioner Keith Hennessey

A handwritten signature in black ink that reads "Douglas Holtz-Eakin". The signature is cursive and clearly legible.

Commissioner Douglas Holtz-Eakin

A handwritten signature in black ink that reads "Peter J. Wallison". The signature is cursive and somewhat stylized, with a large loop at the end of the last name.

Commissioner Peter J. Wallison

## *Why was there a housing bubble?*

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Bubbles happen. In retrospect, they always seem easy to identify, but as they are building, experts debate whether they exist—and, if so, why. The recent housing bubble was no different. Despite national home price appreciation well above the historical trend for almost a decade, and local markets with even more pronounced price swings, most homeowners and mortgage investors believed there were sound fundamentals underpinning their investments.

We will likely never have a complete explanation for why there was a housing bubble, but we have some clues. First, even without a big change in the costs of building a home, a sharp increase in demand for homes can cause rapid price increases until new homes are built, bringing prices back down.

Warren Buffett, in testimony before the Commission, echoed sentiments heard again and again by the Commission: “My old boss, Ben Graham, used to say, ‘You get in much more trouble in investments with a sound premise than a bad premise because the bad premise you recognize immediately doesn’t make any sense.’” Buffett continued, “A home is a sound investment. I mean, 66 or 67 percent of the people are going to be in one. And, if you believe house prices are going to go up next year, you’re going to stretch to buy one this year, and the world enabled people to stretch.” Investors of all kinds found themselves exposed to the housing market: homeowners, insurance companies, commercial banks and thrifts, investment banks, pension funds, the U.S. government, and ultimately the American taxpayer. Some identified froth in the national market and expected to see home prices plateau, or fall slightly. But a 30 percent national decline in just over two years—that was beyond their wildest fears.

As home prices ballooned, the costs of borrowing dropped dramatically. Homeowners were still able to borrow, even given the higher prices. Mortgage interest rates dropped to all-time low levels. The percentage of nontraditional mortgage products in the mortgage market exploded. Low mortgage rates meant that borrowers could buy a larger, more expensive home for the same monthly payment. Nontraditional mortgage products, such as 2/28s and option ARMs, meant that, unlike in the standard thirty-year fixed-rate mortgage, borrowers could make a lower payment up front and refinance their mortgage a few years later at a lower rate when their home had appreciated in value (or so they thought).

Why the sudden change in borrowing costs? For a borrower, a mortgage is a big part of the cost of buying a home. But for a lender, a mortgage is an investment like any other. Lenders, in theory, demand higher interest payments from riskier borrowers because the lender needs to be compensated for the risk that a borrower will default and the lender will have to sell the home for a loss. As long as home prices did not fall too far, mortgage lending was thought to be a relatively safe business. Even if the borrower could not make their payments, the lender could still make good on their investment by selling the foreclosed home.

In retrospect, however, it is clear that lenders—including the government, which held the credit risk on most of the subprime and other weak mortgages outstanding—were not requiring big enough returns to compensate for the risks they were taking. The real risk of a mortgage investment became delinked from the premium demanded by investors to make a loan. Why? For one, investors shared the same mindset as borrowers, enticed by the belief that home prices would never fall on a national scale. Further, the returns on investments thought to be comparably safe were yielding far less than mortgage-related investments. In the case of the

government, it was following a social policy in addition to an investment policy. There were three important ways that the government pushed investors toward investing in mortgage debt. First, the regulatory capital requirements associated with mortgage debt were lower than for other investments. Second, the government encouraged the private market to extend credit to previously underserved borrowers through a combination of legislation, regulation, and moral suasion. Third, and most important, during the bubble's expansion, the largest investors in the mortgage market, the government-sponsored enterprises (GSEs)—Fannie Mae and Freddie Mac—were instruments of U.S. government housing policy.

In time, the areas of the country with rapid home price appreciation became overbuilt, and home prices began to decline. A series of indices were created based on subprime mortgage-backed securities (MBS)—debt securities collateralized by subprime mortgage pools—that allowed investors to invest in housing without having to buy actual mortgage debt. These indices fell as bearish investors became increasingly pessimistic, indicating to the market as a whole that all was not well in the mortgage market. Demand for homes declined, and demand for mortgage investments followed. The U.S. government stepped in, but it was too little, too late. The bubble had burst.

### *How did the U.S. government contribute to declining lending standards?*

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During the boom, the biggest participants in the mortgage market were the GSEs. Unlike other investors, who are profit-maximizing and will invest in whatever will bring them the best returns, Fannie Mae and Freddie Mac had a number of competing investment objectives.

Fannie Mae and Freddie Mac were established in 1938 and 1970, respectively, by the government to invest in mortgages and thereby provide liquidity in the mortgage market. In recent years, the GSEs were also bound by a set of “affordable housing goals” established in the 1992 GSE Act to direct a certain proportion of their investments to low- and moderate-income borrowers and to homes located in low-income neighborhoods. In order to accomplish these dual goals, the government explicitly subsidized the investments of the GSEs.

However, Fannie Mae and Freddie Mac were not a part of the U.S. government. To remove Fannie Mae's debt load from the budget, Congress re-commissioned it as a privately run government-sponsored corporation in 1968, and Freddie Mac was similarly situated when it was created two years later. Despite being privately owned, the GSEs retained an implicit government guarantee. Investors believed that the government would always stand behind the GSEs, and the government encouraged that perception.

The GSEs easily met the affordable housing goals during the 1990s, but these goals were incrementally increased as part of a new housing policy agenda that began during the mid-1990s under President Bill Clinton and continued through the 2000s under President George W. Bush. President Clinton announced a “national homeownership strategy” that would increase the homeownership rate in America from the then-current level of 65 percent to 67.5 percent by 2000. Subsidizing mortgages through the GSEs was a particularly politically expedient way to increase the homeownership rate.

The government has always supported homeownership. But trying to get something for nothing—to subsidize homeownership without increasing the budget deficit—was a recipe for a crisis. The government, in effect, encouraged the GSEs to run two enormous monoline hedge funds that invested exclusively in mortgages and were implicitly backed by the U.S. taxpayer.

The GSEs had traditionally only purchased or guaranteed the highest-quality mortgages from low-risk borrowers. But from 1993 to 2007, the government-established affordable housing goals grew beyond the GSEs' ability to meet them. Shrinking their quantity of prime purchases, thus increasing the proportion of "goals" investments, would have violated their mission of providing liquidity to the mortgage market. Further, as publicly traded companies, they had a fiduciary duty to their stockholders. The only option available was to invest in mortgages of increasingly lower quality and higher risk to the taxpayer. That is precisely what they did. During the inflation of the housing bubble, the GSEs lowered their standards and began investing in subprime and Alt-A mortgages—and to great fanfare, as the national homeownership rate averaged 68.7 percent from 2003 to 2006.

The GSEs invested in high-risk mortgages in two ways. The first was by doing exactly what the GSEs had done for decades: guaranteeing loans. The GSEs would provide a credit guarantee on mortgage pools that were sold to them by originators and then issued back to the lender as a GSE-guaranteed MBS, or "agency MBS." The GSEs would charge a guarantee fee in exchange for taking on the credit risk of the pool of mortgages. But in an effort to meet their affordable housing goals, the GSEs began guaranteeing ever-riskier loans.

The second way the GSEs invested in high-risk mortgages was through MBS backed by subprime and Alt-A mortgages, which they held on balance sheet. Although some of these loans qualified for affordable housing goals, these investments were also, to a large extent, pure interest-rate arbitrage, given the low cost of funding for the GSEs.

The GSEs were not the only means by which the government supported the financing of high-risk mortgages. Through the GSEs, FHA loans, VA loans, the Federal Home Loan Banks, and the Community Reinvestment Act, among other programs, the government subsidized and, in some cases, mandated the extension of credit to high-risk borrowers, propagating risks for financial firms, the mortgage market, taxpayers, and ultimately the financial system.

### *How did important financial firms become exposed to the mortgage market?*

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The primary role that financial firms played in mortgage lending was that of financial intermediary, providing a link between those who wished to invest in mortgages and those who wanted to take out a mortgage to buy a home. This is the value of a robust financial system—it allows investors to make investments wherever they choose and borrowers to borrow at the lowest cost. Without this web of mortgage originators, depository institutions, broker-dealers, money funds, insurance companies, hedge funds, and the GSEs, it would have been incredibly hard for a retiree in California to lend his savings to a homebuyer in Miami, much less a diversified group of homebuyers across the country. But with financial firms acting as intermediaries, getting exposure to the U.S. mortgage market was made incredibly easy.

The process by which financial firms acted as intermediaries is known as securitization. Rather than holding a loan to maturity, the loan originator would sell the loan as part of a pool of loans into the secondary market for mortgages. These loan pools would be purchased, turned into MBS, and sold to investors. The system had worked this way for decades, and worked well. However, in the past, the majority of loans in the secondary market were sold to, guaranteed by, and securitized by the GSEs. During the 2000s, the non-agency MBS market boomed, and more types of financial firms became part of the chain linking borrowers and lenders.

There were two ways that financial firms became exposed to the housing downturn. Some financial firms, including Fannie Mae and Freddie Mac, were in the business of taking on mortgage risk, rather than passing it along to a new investor. Insurance companies comprised another group of firms that played a similar role in the mortgage market during the boom. These companies took on the credit risk of highly rated securities in exchange for a protection payment. Many mortgage investors were happy to rid themselves of the credit risk associated with their mortgage-related investments in exchange for a slightly lower return. These insurance companies, with their large and diverse balance sheets, felt that they would be able to withstand these very low probability risks. In the end, they were spectacularly wrong. Further, a number of banks, thrifts, and others did make investments in residential and commercial real estate for the purpose of holding those loans to maturity and took very large losses in the process.

However, important financial firms principally involved in pure credit intermediation—that is, providing the link between investors and borrowers—were exposed to the downturn as well, but did not understand the risks they were taking at the time. The Commission found three primary ways that the risk of the mortgage market found its way onto the balance sheets of these financial firms: pipeline risk, super-senior risk, and reputational risk. All three were important sources of liquidity risk, which is the risk that a financial firm will not have sufficient cash on hand to pay its debts as they come due. During a crisis, when depositors make withdrawal requests, or investors request that their short-term loans be repaid rather than rolled over, liquidity risk becomes a primary concern. If the financial firm does not have enough cash on hand, then it will have to sell assets into a depressed market. Liquidity risks can quickly evolve into solvency concerns once a run begins. A striking conclusion we drew from the FCIC’s work is the extent to which these liquidity risks proved to be systemically underappreciated.

*Pipeline risk:* Firms involved in the structuring of mortgage-backed products had to hold the underlying loans or MBS on their balance sheets while these structured products were in the process of being created. Although the underlying loans or MBS were acquired with the intention of pooling and selling them, the market for mortgage-backed structured products collapsed quickly. Not all of the accumulated loans and MBS could be sold for a profit, or sold at all.

*Super-senior risk:* The safest, “super-senior” tranches<sup>1</sup> of mortgage-backed structured products were less attractive to investors because they did not provide a sufficient spread above other, safer securities, like U.S. Treasuries. Some financial firms, therefore, held these exposures on their balance sheets, rather than selling them. Others sold the super-senior tranches with enhancements, such as liquidity put options, which gave the investor the ability to sell the security back to the issuer. In both cases, the firms issuing the products retained some risk. But it was risk that they believed was minuscule. After all, these products were rated Aaa. However, the complexity of these highly rated securities made them very hard to sell during the crisis.

*Reputational risk:* A number of financial firms made mortgage investments available by creating “off-balance-sheet” entities, which were self-financing, arms-length investment vehicles. Many of these investments came with an implicit promise that the sponsoring firm

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<sup>1</sup> MBS issuances were “tranching” in order to give investors the ability to take different quantities of risk associated with different yields, depending on the priority of payments from the mortgage pool. The senior tranches were the safest and lowest yielding, followed by the mezzanine tranches, which were higher-risk but still investment-grade, and the residual tranches, which were the riskiest and highest-yielding. Collateralized debt obligations often consisted of a pool of these MBS tranches, sometimes combined with other debt products, and were similarly pooled, tranching, and sold to investors.



would stand behind its product, even in the absence of an explicit legal obligation. If the sponsor would not stand behind its off-balance-sheet entities, it brought the viability of the rest of the firm into question, which could be enough to spark a run on its own. However, the decision to stand behind these entities during the crisis added stress to already fragile firms. It was a Catch-22.

The credit rating agencies made many of the same mistakes as mortgage investors, and their ratings on MBS proved to be severely inflated—an important reason that these credit and liquidity risks were not appreciated by financial firms. Collateralized debt obligation (CDO) ratings used MBS ratings and added another layer of complexity: default correlation. A CDO is a pool of different structured products, such as MBS tranches, created in order to provide additional diversification to the investment and thus, in theory, lower risks. Mezzanine CDOs, which were a significant source of losses for financial firms during the crisis, consisted of a pool of mezzanine tranches of MBS. For a bond rated Baa3 by Moody's—the lowest-rated investment grade bond—the five-year idealized expected loss rate is 1.7 percent. Given these loss assumptions, it made sense that there would be some benefit to diversification among mezzanine tranches of MBS. Imagine you are a landlord who manages one hundred properties in an area that is frequently buffeted by rainstorms. In a given storm, chances are that one or two of your basements will flood, and in a really hard storm, maybe five or six. So, that is what you prepare for. But this was not a normal storm. It was, to quote Goldman Sachs CEO Lloyd Blankfein, “a hurricane.” The diversification benefits of a mezzanine CDO were overwhelmed by the rising tide of foreclosures.

Put simply, the risk of a housing collapse was simply not appreciated. Not by homeowners, not by investors, not by banks, not by rating agencies, and not by regulators.

### *How did mortgage-related losses lead to the failures of important financial firms?*

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When Fed Chairman Ben Bernanke came before the Commission in a closed session, he highlighted one of the biggest questions that the Commission would have to address. Subprime mortgages constitute a small asset class in comparison to the vast size of the global financial markets. And yet, these mortgages were the trigger for the collapse of some of the most important financial firms in the world, a financial panic, and ultimately severe economic losses. How did it happen?

The answer: leverage and maturity mismatch. Because of the perceived safety of highly rated MBS and CDOs, firms held minuscule capital against the probability of loss. We have already discussed how leverage on mortgage assets permeated the regulatory apparatus. The danger was not in the size of the market; the danger was that no one expected the market to turn down, and mortgage investments were thus leveraged to the hilt.

Because these assets were considered so safe, and therefore so liquid, firms also funded their mortgage exposures using very short-term debt. Mortgage exposures are long term—that is, the actual loan payments accrue over a period of years. Yet, many firms were funding these exposures using debt that matured as quickly as overnight.

Leverage and maturity mismatch are not bad things. The financial system and the economy as a whole need them in order to operate. When a bank takes a deposit and lends a portion of that deposit to a business so that the business can finance a new long-term investment, that is

leverage and maturity mismatch at work. Leverage and maturity transformation are, to a large extent, what banks do.

But both of these factors also create fragility. If the bank uses deposits to fund poorly performing projects, depositors can become concerned that eventually their bank is going to fail and they will not get their deposits back. If a bank lends too much of its deposits to finance long-term projects, depositors might begin to worry that they will not be able to withdraw their money according to their needs. Therefore, banks hold enough cash on hand, or “liquidity,” to be able to honor withdrawal requests and offer confidence to depositors that their money will be there when they want it. If depositors lose confidence in their bank, the only rational thing to do is to withdraw their money and move it to a safer place.

With each depositor withdrawal, the bank becomes more leveraged, the mismatch between its assets and liabilities becomes more pronounced, and liquidity on hand is further diminished. Even more confidence is lost in the bank’s ability to meet future withdrawal requests. As rumors spread that the bank is in danger of failure, all the bank’s depositors will want their money back at once—a bank run. Runs can be sparked by real losses, but in the end, they are all about the loss of confidence that depositors will get their money back.

Bank runs have not been all that common in recent history because banks facing a run can borrow from the Federal Reserve to meet liquidity needs, and most deposits are insured by the Federal Deposit Insurance Corporation. But other types of financial firms fund themselves using a similar mechanism without the government backstop. They issue short-term debt to investors and pay a small interest payment in return. Investors will usually choose to roll over their loans when they mature, similar to a depositor choosing to keep their money in the bank. But once investors get spooked, and a run begins, there is nothing that a financial firm can do except try to regain the market’s confidence.

Runs are contagious. During a panic, fear of loss spreads quickly. When one firm is failing, investors will often lose confidence in firms with similar business models, or similar asset holdings. This is how the panic spread in the fall of 2008.

### *How did the panic start, and why did it end?*

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Following the successive collapses of Bear Stearns, Fannie Mae, Freddie Mac, Lehman Brothers, and American International Group (AIG), what had begun in the second half of 2007 as a run on those firms that the market identified as having large mortgage exposures and acute liquidity risks exploded into a generalized market panic. Depository institutions had failed. Investment banks had failed. A major insurance holding company was rescued by the U.S. government. Even the GSEs, with their implicit guarantee, were taken into conservatorship by their regulator. Few firms were considered safe, and if they were, it was only because they had a government backstop.

Lehman’s bankruptcy had an important effect on debt markets. Lehman had been unable to find a merger partner due to its hard-to-value commercial real estate portfolio and a perceived considerable capital hole. Following the government rescue of Bear Stearns, counterparties of Lehman expected that they, too, would be made whole. This perception was further reinforced by the bailout of the GSEs, as Fannie Mae and Freddie Mac debtholders were protected by the U.S. government as well. But when Lehman went into bankruptcy, debtholders took losses. Suddenly, holding debt of large financial firms seemed much more risky for investors.

This is the moral hazard problem caused by “too big to fail.” If the government is expected to be unwilling to let a firm fail, debtholders will continue to lend money to that firm regardless of the underlying strength of the firm’s balance sheet. This perception was an important source of stability in financial markets during the summer of 2008. After Bear was rescued, Lehman had been perceived as “too big to fail” by the markets, and when it failed, debtholders of other financial firms fled to safer investments.

Think about the state of the world in September 2008 from the perspective of a short-term lender. Your deposits and investments in short-term debt are based on the expectation that these are very safe and liquid. However, with the financial system in crisis, uncertainty abounds, and liquidity is paramount. What if one of your lenders refuses to lend you money or calls in your loan? The rational response is to hoard cash, or at least to move your investments away from counterparties that might be at risk of failure.

With everybody hoarding cash, and nobody lending, financial intermediation operated with escalating friction, and the panic spread rapidly. The first firms to experience problems after Lehman Brothers were the money market mutual funds and the two remaining investment banks, Morgan Stanley and Goldman Sachs. The runs then spread to Washington Mutual, Wachovia, and Citigroup.

By the end of 2008, the panic had spread to the widest corners of the financial system. Thrifts IndyMac and Washington Mutual had failed, and Countrywide had been acquired by Bank of America. Commercial banks Wachovia and National City had been acquired by Wells Fargo and PNC, respectively, and Citigroup had been rescued by the U.S. government. Investment banks Bear Stearns and Merrill Lynch had merged with JPMorgan Chase and Bank of America, respectively; Lehman Brothers had failed; and Morgan Stanley and Goldman Sachs had re-chartered as bank holding companies. AIG, one of the largest insurance holding companies in the world, had effectively been seized by the U.S. government.

The panic ended when confidence returned. Automatic stabilizers exist in the financial system. Once market participants believe that the weakest firms have failed, and asset prices fall far enough so that market participants believe that bargains abound, lending and borrowing return to normal. But the government played a big role in stemming the panic as well. The only response to a panic is to credibly assure debtholders that firms have sufficient liquidity to honor their commitments. By acting as a lender of last resort—that is, a counterparty willing to make secured loans when no one else will—the government played a key role in preventing runs on otherwise strong firms. Over the course of 2008, the Federal Reserve backstopped the financial system by providing loans to a wide variety of financial firms backed by an expanded number of collateral types. The passage of the Troubled Asset Relief Program helped restore confidence as well. The government’s commitment to stand behind financial firms, combined with capital injections and a guarantee of bank debt, helped to moderate the panic and stabilize financial markets.

These were the best of a series of bad options, and policymakers had extremely limited information to work with. While we believe that the government deserves quite a lot of the blame for getting our financial system and our nation into trouble in the first place, we applaud the quick and decisive actions taken by our nation’s leaders during the panic.

*Why was the panic so painful for the economy?*

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We do not often think about how many everyday activities are connected in some way to the functioning of the financial system, beyond the ability to access deposits at the local bank. But for businesses to function, they need access to credit. This is why financial crises are so destructive.

For large businesses that fund their liquidity needs through debt markets, strains in the commercial paper market and the market for repurchase agreements—two important short-term debt markets heavily relied on by large businesses for short-term funding prior to the crisis—meant that they had to pay much more for ever-limited available funds. That is, if they could access these debt markets at all. Many firms drew down existing lines of credit, fearful that if the panic continued, they might be unable to continue to borrow. Small businesses, which rely primarily on credit from banks, found borrowing increasingly difficult as well, as banks were unwilling to take additional risk. No one was willing to lend.

The credit freeze affected consumers, too. Securitization markets for credit cards and student loans, debts that had previously been securitized in similar fashion to mortgages, dried up. Without a private securitization market operating, the GSEs were the only investor remaining for homeowners looking to refinance their mortgages. Given the wealth loss that households faced with the diminished value of their homes and the plunging of the stock market, consumers were scared, and they decreased their spending.

The historical record is rich with examples of the prolonged and devastating economic impact of financial crises. University of Maryland economist Carmen Reinhart and Harvard economist Kenneth Rogoff have extensively studied the causes and aftermath of financial crises. The patterns they identify align with our nation's experience:

*“Broadly speaking, financial crises are protracted affairs. More often than not, the aftermath of severe financial crises share three characteristics. First, asset market collapses are deep and prolonged. Real housing price declines average 35 percent stretched over six years, while equity price collapses average 55 percent over a downturn of about three and a half years.”*<sup>2</sup>

National home prices fell 32 percent from their peak in April 2006 to their trough in March 2009. The Dow Jones Industrial Average dropped 54 percent from its peak in October 2007 to its trough in March 2009.

*“Second, the aftermath of banking crises is associated with profound declines in output and employment. The unemployment rate rises an average of 7 percentage points over the down phase of the cycle, which lasts on average four years. Output falls (from peak to trough) an average of over 9 percent, although the duration of the downturn, averaging roughly two years, is considerably shorter than for unemployment.”*

The unemployment rate increased from 4.4 percent in May 2007 to a peak of 10.1 percent in October 2009, a 5.7 percentage point increase. Output, in real terms, dropped 4.1 percent from its peak in the fourth quarter of 2007 to its trough in the second quarter of 2009.

*“Third, the real value of government debt tends to explode, rising an average of 86 percent in the major post-World War II episodes. Interestingly, the main cause of debt explosions is not the widely cited costs of bailing out and recapitalizing the banking system. Admittedly, bailout costs are difficult to measure, and there is considerable divergence among estimates from competing*

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<sup>2</sup> Carmen M. Reinhart and Kenneth S. Rogoff (2009) “The aftermath of financial crises.” *American Economic Review: Papers & Proceedings* 99 (2): 466–472.

*studies. But even upper-bound estimates pale next to actual measured rises in public debt. In fact, the big drivers of debt increases are the inevitable collapse in tax revenues that governments suffer in the wake of deep and prolonged output contractions, as well as often ambitious countercyclical fiscal policies in advanced economies aimed at mitigating the downturn.”*

From the end of 2007 to the end of September 2010, the federal government debt has increased 47 percent, from \$9.2 trillion to \$13.6 trillion. The Congressional Budget Office (CBO) estimates that the total cost of the Troubled Asset Relief Program will be \$25 billion. CBO projects that the cost of continuing to support the GSEs will be \$53 billion over ten years on a fair-value basis. And CBO estimates that the expanded Federal Reserve programs will be a net gain to the budget, as the subsidy costs involved will be more than outweighed by the increased remittances to the Treasury as the Federal Reserve accrues interest on its asset holdings.

It seems like the current episode fits the historical pattern quite well. But how much of the economic cost has come directly from the financial crisis, and how much has come from the downturn in the housing market and other weaknesses in the economy at the time—for example, the sky-high oil prices in the summer of 2008? To try to answer this question, former Treasury Assistant Secretary for Economic Policy Phillip Swagel examined the difference between CBO forecasts published in September 2008, right before the crisis, and the actual data. It is probably as good a hypothetical as we can run.<sup>3</sup>

Compared to the CBO forecast of essentially flat growth in the fourth quarter of 2008 and the first quarter of 2009, the economy contracted 5.4 percent and 6.4 percent at an annual rate in these two quarters, respectively. From the beginning of October 2008 to the end of December 2009, lost GDP relative to the September 2008 forecast amounted to \$648 billion. By the end of 2009, the economy lost an additional 5.5 million jobs above and beyond CBO’s September 2008 projection. Wealth losses were particularly acute following the crisis as well. From July 2008 through March 2009, real estate wealth fell \$3.4 trillion, and stock wealth, \$7.4 trillion. Swagel also projected the increase in wage losses and foreclosure starts due to the economic slowdown resulting from the crisis. He estimates that there was a \$3,250 loss in wages per household and that over 500,000 foreclosures would not have occurred had the crisis not weakened the economy in 2008.

Reinhart and Rogoff also find that financial crises often precede sovereign debt crises, given the rapid increase in public debt. To this end, it is not by pure coincidence that our Commission was set up at roughly the same time as the National Commission on Fiscal Responsibility and Reform, which recently presented its report on the looming fiscal crisis in our country.

In their panoramic study of financial crises and the debt crises that follow, Reinhart and Rogoff identify perhaps the four most dangerous words expressed by investors, regulators, and policymakers before a crash: *“This time is different.”* We could not agree more. We caution our nation’s leaders to learn the appropriate lessons from history and take seriously the need to reduce our federal deficit.

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<sup>3</sup> Phillip Swagel (2009) “The cost of the financial crisis: the impact of the September 2008 economic collapse.” Pew Financial Reform Project, Briefing Paper #18. [http://www.pewfr.org/admin/project\\_reports/files/Cost-of-the-Crisis-final.pdf](http://www.pewfr.org/admin/project_reports/files/Cost-of-the-Crisis-final.pdf).