Statement of Bill Thomas

Vice-Chairman, Financial Crisis Inquiry Commission

Testimony before the House Committee on Financial Services

February 16, 2011

Chairman Bachus, Ranking Member Frank and members of the Committee, my name is Bill Thomas. I was appointed as Vice-Chairman of the Financial Crisis Inquiry Commission by the Republican leaders of the 111th Congress. Thank you for having me here today to speak about the report of the Financial Crisis Inquiry Commission. You have asked that I address the Commission's findings, to assess the Dodd-Frank Act in light of those findings, and to discuss why the Commission was unable to reach unanimous agreement.

I joined a dissent from the majority's report with Commissioners Keith Hennessey and Douglas Holtz-Eakin. In our dissent, we describe what we believe are the ten essential causes of the financial crisis – that is, the ten causes which were individually necessary and together sufficient to cause the financial and economic crisis that we were tasked to investigate. Our thesis is that the crisis was, at its core, a global financial panic precipitated by concentrated, correlated housing-related losses at large and midsize financial institutions in the United States and Europe.

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THE TEN ESSENTIAL CAUSES OF THE FINANCIAL AND ECONOMIC CRISIS

The following ten causes, global and domestic, are essential to explaining the financial and economic crisis.

I. **Credit bubble.** Starting in the late 1990s, China, other large developing countries, and the big oil-producing nations built up large capital surpluses. They loaned these savings to the United States and Europe, causing interest rates to fall. Credit spreads narrowed, meaning that the cost of borrowing to finance risky investments declined. A credit bubble formed in the United States and Europe, the most notable manifestation of which was increased investment in high-risk mortgages. U.S. monetary policy may have contributed to the credit bubble but did not cause it.

II. **Housing bubble.** Beginning in the late 1990s and accelerating in the 2000s, there was a large and sustained housing bubble in the United States. The bubble was characterized both by national increases in house prices well above the historical trend and by rapid regional boom-and-bust cycles in California, Nevada, Arizona, and Florida. Many factors contributed to the housing bubble, the bursting of which created enormous losses for homeowners and investors.

III. **Nontraditional mortgages.** Tightening credit spreads, overly optimistic assumptions about U.S. housing prices, and flaws in primary and secondary mortgage markets led to poor origination practices and combined to increase the flow of credit to U.S. housing finance. Fueled by cheap credit, firms like Countrywide, Washington Mutual, Ameriquest, and HSBC Finance originated vast numbers of high-risk, nontraditional mortgages that were in some cases deceptive, in many cases confusing, and often beyond borrowers' ability to repay. At the same time, many homebuyers and homeowners did not live up to their responsibilities to understand the terms of their mortgages and to make prudent financial decisions. These factors further amplified the housing bubble.

IV. **Credit ratings and securitization.** Failures in credit rating and securitization transformed bad mortgages into toxic financial assets. Securitizers lowered the credit quality of the mortgages they securitized. Credit rating agencies erroneously rated mortgage-backed securities and their derivatives as safe investments. Buyers failed to look behind the credit ratings and do their own due diligence. These factors fueled the creation of more bad mortgages.

V. **Financial institutions concentrated correlated risk.** Managers of many large and midsize financial institutions in the United States amassed enormous concentrations of highly correlated housing risk. Some did this knowingly by betting on rising housing prices, while others paid insufficient attention to the potential risk of carrying large amounts of housing risk on their balance sheets. This enabled large but seemingly manageable mortgage losses to precipitate the collapse of large financial institutions.

VI. **Leverage and liquidity risk.** Managers of these financial firms amplified this concentrated housing risk by holding too little capital relative to the risks they were carrying on their balance sheets. Many placed their firms on a hair trigger by relying heavily on short-term financing in repo and commercial paper markets for their day-to-day liquidity. They placed solvency bets (sometimes unknowingly) that their housing investments were solid, and liquidity bets that overnight money would always be available. Both turned out to be bad bets. In several cases, failed solvency bets triggered liquidity crises, causing some of the largest financial firms to fail or nearly fail. Firms were insufficiently transparent about their housing risk, creating uncertainty in markets that made it difficult for some to access additional capital and liquidity when needed.

VII. **Risk of contagion.** The risk of contagion was an essential cause of the crisis. In some cases, the financial system was vulnerable because policymakers were afraid of a large firm's sudden and disorderly failure triggering balance-sheet losses in its counterparties. These institutions were deemed too big and interconnected to other firms through counterparty credit risk for policymakers to be willing to allow them to fail suddenly.

VIII. **Common shock.** In other cases, unrelated financial institutions failed because of a common shock: they made similar failed bets on housing. Unconnected financial firms failed for the same reason and at roughly the same time because they had the same problem: large housing losses. This common shock meant that the problem was broader than a single failed bank – key large financial institutions were undercapitalized because of this common shock.

IX. **Financial shock and panic.** In quick succession in September 2008, the failures, near-failures, and restructurings of ten firms triggered a global financial panic. Confidence and trust in the financial system began to evaporate as the health of almost every large and midsize financial institution in the United States and Europe was questioned.

X. **Financial crisis causes economic crisis.** The financial shock and panic caused a severe contraction in the real economy. The shock and panic ended in early 2009. Harm to the real economy continues through today.

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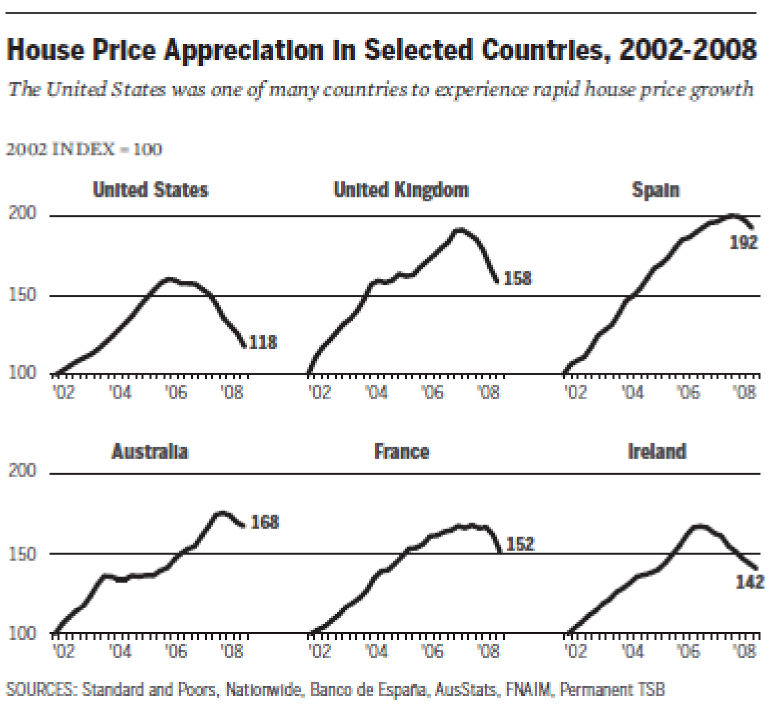
I will highlight three areas where our findings and conclusions differ from those of the six-member majority:

First, our explanation of the crisis begins with a global credit bubble fueled by international capital flows. We do not think that you can understand what happened in the United States without first understanding what was going on in international capital markets. There were a series of credit bubbles occurring at the same time in a variety of asset classes around the world. This fact undermines the thesis that it was something about U.S. capital markets, or the U.S. housing market in particular, that was the primary cause of the bubble. This difference in emphasis is also indicative of a general divergence in approach: we focused more heavily on the role that economic forces played in causing the crisis where the majority focused on individual firms and actors.

This divergence in approach is highlighted in an important and timely article by Robert J. Samuelson entitled “Rethinking the Great Recession” featured in the Winter 2011 issue of the *Wilson Quarterly*.[1] Samuelson's main thesis is that "there's a political, journalistic, and intellectual imperative to find out who caused the crisis, who can be blamed, and who can be indicted (either in legal courts or the court of public opinion) and, if found guilty, be jailed or publicly humbled," but "in embracing a victims-and-villains explanation of the recession, Americans are missing important lessons about the future of the U.S. economy."

Second, housing bubbles occurred in a number of large countries with very different systems of housing finance. Some had a lot of subprime mortgages; others did not. Some had mortgages primarily originated by centrally regulated banks; others were dominated by independent mortgage originators. Some had little mortgage securitization; others had much more securitization. No two were quite alike, and none looked anything like ours. Therefore, we had a hard time placing too much emphasis on the structure of our mortgage finance system in explaining the boom and bust, and focused more on factors common to all of these countries, e.g. the broader credit bubble.



[1] The article has been included as Appendix C. Robert Samuelson (2011) "Rethinking the Great Recession," *The Wilson Quarterly*, Winter. http://www.wilsonquarterly.com/article.cfm?AID=1768.

Third, we observed financial firm failures across a variety of different firm organizational structures in the United States and Europe. For us, this fact supported the conclusion that the organizational form of a financial firm or its specific regulatory regime was secondary in importance to common factors, e.g. concentrated exposure to the housing market and poorly managed solvency and liquidity risk. When we look at the multitude of firm failures – banks, thrifts, investment banks, insurance companies, credit unions, hedge funds, pension funds, the list goes on and on – in the United States and around the world, it casts doubt on the majority's thesis that a particular feature of the American regulatory regime, a specific type of financial institution, or an individual firm and the people that ran it was an essential cause of the crisis. However, when you are looking for victims and villains, rather than essential causes, you can examine the same set of facts and arrive at diametrically different conclusions.

This leads me to the central question of why we were unable to reach unanimous agreement among the Commissioners on the causes of the crisis. I will not deny that there were substantive differences of opinion, but I do not believe that these differences were so large as to make a bipartisan final report impossible. From the beginning, I thought that the Commission was created for political purposes, with a partisan structure and a partisan 22-point agenda. It called for six of us to be appointed by Democrats and four by Republicans, and only six votes were needed to transmit the report to the President and the Congress – the math was simple. Further, we were created for a number of political purposes which depended on what unfolded following the Commission's creation, which made bipartisan agreement next to impossible.

Let's be clear: the Commission was not created by Congress to write a 500-plus page commercially-produced book. The Commission was created to determine why we had a financial and economic crisis. When inordinate hours of staff time are being used to find 'gotcha' documents to support provocative headlines rather than to produce material relevant to Commissioner deliberations; when the proceedings of private Commission meetings are inaccurately leaked again and again in an attempt to embarrass the minority and create artificial hype for a commercial book; when the minority is forced to vote on potentially illegal motions presented to them just one day prior; when the final findings and conclusions of the majority are first presented to the minority four days before the final vote; and when minority views are then excluded by a 6-4 vote from the report[2] and suppressed in the commercial book[3], in the event presenting the report, and on the Commission's website, it becomes abundantly clear that consensus is not a primary goal.

In our dissent, we conclude: "By focusing too narrowly on U.S. regulatory policy and supervision, ignoring international parallels, emphasizing only arguments for greater regulation, failing to prioritize the causes, and failing to distinguish sufficiently between causes and effects, the majority's report is unbalanced and leads to incorrect conclusions about what caused the crisis." I think we had the money, the time, the staff, and the resources necessary for our work to have been a success. I believe this disappointing result was as much a product of the political motivation in our creation as it was an inability to reach agreement on substantive issues. When you have the votes, what else really matters?

Regarding the Dodd-Frank Act, I do believe that our work has shed light on a number of problems in our financial markets that have not been sufficiently addressed, as well as cases of regulatory overreach where the financial and economic crisis was used as cover to regulate activities that had little to do with the financial crisis

I look forward to your questions.

Thank you.

[2] In the December 6, 2010 business meeting, the majority decided by 6-4 vote to change the Commission's rules from stating that dissents would be published "in the report" to stating that dissents would be published "along with" the report.
[3] In the December 6, 2010 business meeting, the majority decided by 6-4 vote that "Additional or dissenting views of up to nine typeset pages in length, including charts and footnotes, may be submitted by any Commissioner for publication in the Commission's commercially published report." No limits were placed on the length of the majority's views.

Appendix A:

"What Caused the Financial Crisis"

By Bill Thomas, Keith Hennessey and Douglas Holtz-Eakin

The Wall Street Journal
January 27, 2011

January 27, 2011

What Caused the Financial Crisis?

Congress's inquiry commission is offering a simplistic narrative that could lead to the wrong policy reforms.

By BILL THOMAS, KEITH HENNESSEY AND DOUGLAS HOLTZ-EAKIN

Today, six members of the Financial Crisis Inquiry Commission—created by the last Congress to investigate the causes of the financial crisis—are releasing their final report. Although the three of us served on the commission, we were unable to support the majority's conclusions and have issued a dissenting statement.

In a November 2009 article, Brookings Institution economists Martin Baily and Douglas Elliott describe the three common narratives about the financial crisis. The first argues that the primary cause was government intervention in the housing market. This intervention, principally through Fannie Mae and Freddie Mac, inflated a housing bubble that triggered the crisis. This is the view expressed by one of our co-commissioners in a separate dissent.

The second narrative blames Wall Street and its influence in Washington. According to this narrative, greedy bankers knowingly manipulated the financial system and politicians in Washington to take advantage of homeowners and mortgage investors alike, intentionally jeopardizing the financial system while enjoying huge personal gains. That's the view of the six majority commissioners.

We subscribe to a third narrative—a messier story that emphasizes both global economic forces and failures in U.S. policy and supervision. Though our explanation of the crisis doesn't fit conveniently into the political order of Washington, we believe that it is far superior to the other two.

We recognize that the other two narratives have popular appeal: They each blame a clear entity, and thus outline a clear set of reform proposals. Had the government not supported housing subsidies (the first narrative) or had policy makers implemented more restrictive financial regulations (the second) there would have been no calamity.

Both of these views are incomplete and misleading. The existence of housing bubbles in a number of large countries, each with vastly different systems of housing finance, severely undercuts the thesis that the housing bubble was a phenomenon driven solely by the U.S. government. Likewise, the multitude of financial-firm failures, spanning varied organizational forms and differing regulatory regimes across the U.S. and Europe, makes it implausible that the crisis was the product of a small coterie of Wall Street bankers and their Washington bedfellows.

We believe the crisis was the product of 10 factors. Only when taken together can they offer a sufficient explanation of what happened:

Starting in the late 1990s, there was a broad credit bubble in the U.S. and Europe and a sustained housing bubble in the U.S. (factors 1 and 2). Excess liquidity, combined with rising house prices and an ineffectively regulated primary mortgage market, led to an increase in nontraditional mortgages (factor 3) that were in some cases deceptive, in many cases confusing, and often beyond borrowers' ability to pay.

However, the credit bubble, housing bubble, and the explosion of nontraditional mortgage products are not by themselves responsible for the crisis. Our country has experienced larger bubbles—the dot-com bubble of the 1990s, for example—that were not nearly as devastating as the housing bubble. Losses from the housing downturn were concentrated in highly leveraged financial institutions. Which raises the essential question: Why were these firms so exposed?

Failures in credit-rating and securitization transformed bad mortgages into toxic financial assets (factor 4). Securitizers lowered the credit quality of the mortgages they securitized, credit-rating agencies erroneously rated these securities as safe investments, and buyers failed to look behind the ratings and do their own due diligence. Managers of many large and midsize financial institutions amassed enormous concentrations of highly correlated housing risk (factor 5), and they amplified this risk by holding too little capital relative to the risks and funded these exposures with short-term debt (factor 6). They assumed such funds would always be available. Both turned out to be bad bets.

These risks within highly leveraged, short-funded financial firms with concentrated exposure to a collapsing asset class led to a cascade of firm failures. The losses spread in two ways. Some firms had large counterparty credit risk exposures, and the sudden and disorderly failure of one firm risked triggering losses elsewhere. We call this the risk of contagion (factor 7). In other cases, the problem was a common shock (factor 8). A number of firms had made similar bad bets on housing, and thus unconnected firms failed for the same reason and at roughly the same time.

A rapid succession of 10 firm failures, mergers and restructurings in September 2008 caused a financial shock and panic (factor 9). Confidence and trust in the financial system evaporated, as the health of almost every large and midsize financial institution in the U.S. and Europe was questioned. The financial shock and panic caused a severe contraction in the real economy (factor 10).

We agree with our colleagues that individuals across the financial sector pursued their self-interest first, sometimes to the detriment of borrowers, investors, taxpayers and even their own firms. We also agree that the mountain of government programs supporting the housing market produced distorted investment incentives, and that the government's implicit support of Fannie Mae and Freddie Mac was a ticking time bomb.

But it is dangerous to conclude that the crisis would have been avoided if only we had regulated everything a lot more, had fewer housing subsidies, and had more responsible bankers. Simple narratives like these ignore the global nature of this crisis, and promote a simplistic explanation of a complex problem. Though tempting politically, they will ultimately lead to mistaken policies.

Mr. Thomas is a former Republican congressman from California. Mr. Hennessey served as director of the White House National Economic Council in 2008. Mr. Holtz-Eakin is a former director of the Congressional Budget Office.

Appendix B:

Dissenting Statement of Commissioner Keith Hennessey, Commissioner Douglas Holtz-Eakin and Vice Chairman Bill Thomas

January 27, 2011

Dissenting Statement of

Commissioner

KEITH HENNESSEY

Commissioner

DOUGLAS HOLTZ-EAKIN

Vice Chairman

BILL THOMAS

CAUSES OF THE FINANCIAL AND ECONOMIC CRISIS

CONTENTS

INTRODUCTION

We have identified ten causes that are essential to explaining the crisis. In this dissenting view:

- We explain how our approach differs from others';
- We briefly describe the stages of the crisis;
- We list the ten essential causes of the crisis; and
- We walk through each cause in a bit more detail.

We find areas of agreement with the majority's conclusions, but unfortunately the areas of disagreement are significant enough that we dissent and present our views in this report.

We wish to compliment the Commission staff for their investigative work. In many ways it helped shape our thinking and conclusions.

Due to a length limitation recently imposed upon us by six members of the Commission,[1] this report focuses only on the causes *essential* to explaining the crisis. We regret that the limitation means that several important topics that deserve a much fuller discussion get only a brief mention here.

HOW OUR APPROACH DIFFERS FROM OTHERS'

During the course of the Commission's hearings and investigations, we heard frequent arguments that there was a single cause of the crisis. For some it was international capital flows or monetary policy; for others, housing policy; and for still others, it was insufficient regulation of an ambiguously defined shadow banking sector, or unregulated over-the-counter derivatives, or the greed of those in the financial sector and the political influence they had in Washington.

In each case, these arguments, when used as single-cause explanations, are too simplistic because they are incomplete. While some of these factors were essential contributors to the crisis, each is insufficient as a standalone explanation.

The majority's approach to explaining the crisis suffers from the opposite problem–it is too broad. Not everything that went wrong during the financial crisis caused the crisis, and while some causes were essential, others had only a minor impact. Not every regulatory change related to housing or the financial system prior to the crisis was a cause. The majority's almost 550-page report is more an account of bad events than a focused explanation of what happened and why. When everything is important, nothing is.

As an example, non-credit derivatives did not in any meaningful way cause or contribute to the financial crisis. Neither the Community Reinvestment Act nor removal of the Glass-Steagall firewall was a significant cause. The crisis can be explained without resorting to these factors.

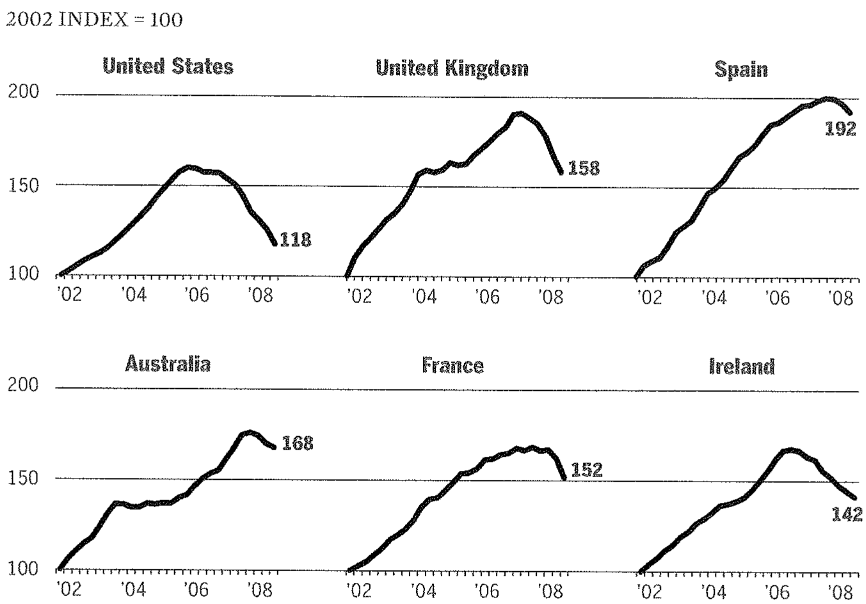
We also reject as too simplistic the hypothesis that too little regulation caused the crisis, as well as its opposite, that too much regulation caused the crisis. We question this metric for determining the effectiveness of regulation. The *amount* of financial regulation should reflect the need to address particular failures in the financial system. For example, high-risk, nontraditional mortgage lending by nonbank lenders flourished in the 2000s and did tremendous damage in an ineffectively regulated environment, contributing to the financial crisis. Poorly designed government housing policies distorted market outcomes and contributed to the creation of unsound mortgages as well. Countrywide's irresponsible lending and AIG's failure were in part attributable to ineffective regulation and supervision, while Fannie Mae and Freddie Mac's failures were the result of policymakers using the power of government to blend public purpose with private gains and then socializing the losses. Both the "too little government" and "too much government" approaches are too broad-brush to explain the crisis.

The majority says the crisis was avoidable if only the United States had adopted across-the-board more restrictive regulations, in conjunction with more aggressive regulators and supervisors. This conclusion by the majority largely ignores the global nature of the crisis. For example:

- A credit bubble appeared in both the United States and Europe. This tells us that our primary explanation for the credit bubble should focus on factors common to both regions.

House Price Appreciation in Selected Countries, 2002-2008

The United States was one of many countries to experience rapid house price growth



SOURCES: Standard and Poors, Nationwide, Banco de España, AusStats, FNAIM, Permanent TSB

- The report largely ignores the credit bubble beyond housing. Credit spreads declined not just for housing, but also for other asset classes like commercial real estate. This tells us to look to the credit bubble as an essential cause of the U.S. housing bubble. It also tells us that problems with U.S. housing policy or markets do not by themselves explain the U.S. housing bubble.
- There were housing bubbles in the United Kingdom, Spain, Australia, France and Ireland, some more pronounced than in the United States. Some nations with housing bubbles relied little on American-style mortgage securitization. A good explanation of the U.S. housing bubble should also take into account its parallels in other nations. This leads us to explanations broader than just U.S. housing policy, regulation, or supervision. It also tells us that while failures in U.S. securitization markets may be an essential cause, we must look for other things that went wrong as well.
- Large financial firms failed in Iceland, Spain, Germany, and the United Kingdom, among others. Not all of these firms bet solely on U.S. housing assets, and

they operated in different regulatory and supervisory regimes than U.S. commercial and investment banks. In many cases these European systems have stricter regulation than the United States, and still they faced financial firm failures similar to those in the United States.

These facts tell us that our explanation for the credit bubble should focus on factors common to both the United States and Europe, that the credit bubble is likely an essential cause of the U.S. housing bubble, and that U.S. housing policy is by itself an insufficient explanation of the crisis. Furthermore, any explanation that relies too heavily on a unique element of the U.S. regulatory or supervisory system is likely to be insufficient to explain why the same thing happened in parts of Europe. This moves inadequate international capital and liquidity standards up our list of causes, and it moves the differences between the regulation of U.S. commercial and investment banks down that list.

Applying these international comparisons directly to the majority's conclusions provokes these questions:

- If the political influence of the financial sector in Washington was an essential cause of the crisis, how does that explain similar financial institution failures in the United Kingdom, Germany, Iceland, Belgium, the Netherlands, France, Spain, Switzerland, Ireland, and Denmark?
- How can the "runaway mortgage securitization train" detailed in the majority's report explain housing bubbles in Spain, Australia, and the United Kingdom, countries with mortgage finance systems vastly different than that in the United States?
- How can the corporate and regulatory structures of investment banks explain the decisions of many U.S. commercial banks, several large American university endowments, and some state public employee pension funds, not to mention a number of large and midsize German banks, to take on too much U.S. housing risk?
- How did former Fed Chairman Alan Greenspan's "deregulatory ideology" also precipitate bank regulatory failures across Europe?

Not all of these factors identified by the majority were irrelevant; they were just not essential.

The Commission's statutory mission is "to examine the causes, domestic and global, of the current financial and economic crisis in the United States." By focusing too narrowly on U.S. regulatory policy and supervision, ignoring international parallels, emphasizing only arguments for greater regulation, failing to prioritize the causes, and failing to distinguish sufficiently between causes and effects, the majority's report is unbalanced and leads to incorrect conclusions about what caused the crisis.

We begin our explanation by briefly describing the stages of the crisis.

STAGES OF THE CRISIS

As of December 2010, the United States is still in an *economic slump* caused by a *financial crisis* that first manifested itself in August 2007 and ended in early 2009. The primary features of that financial crisis were a *financial shock* in September 2008 and a concomitant *financial panic*. The financial shock and panic triggered a severe contraction in lending and hiring beginning in the fourth quarter of 2008.

Some observers describe recent economic history as a recession that began in December 2007 and continued until June 2009, and from which we are only now beginning to recover. While this definition of the recession is technically accurate, it obscures a more important chronology that connects financial market developments with the broader economy. We describe recent U.S. macroeconomic history in five stages:

- A series of foreshocks beginning in August 2007, followed by an economic slowdown and then a mild recession through August 2008, as liquidity problems emerged and three large U.S. financial institutions failed;
- A severe financial shock in September 2008, in which ten large financial institutions failed, nearly failed, or changed their institutional structure; triggering
- A financial panic and the beginning of a large contraction in the real economy in the last few months of 2008; followed by
- The end of the financial shock, panic, and rescue at the beginning of 2009; followed by
- A continued and deepening contraction in the real economy and the beginning of the financial recovery and rebuilding period.

As of December 2010, the United States is still in the last stage. The financial system is still recovering and being restructured, and the U.S. economy struggles to return to sustained strong growth. The remainder of our comments focuses on the financial crisis in the first three stages by examining its ten essential causes.

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X. **Financial crisis causes economic crisis.** The financial shock and panic caused a severe contraction in the real economy. The shock and panic ended in early 2009. Harm to the real economy continues through today.

We now describe these ten essential causes of the crisis in more detail.

THE CREDIT BUBBLE: GLOBAL CAPITAL FLOWS, UNDERPRICED RISK, AND FEDERAL RESERVE POLICY

The financial and economic crisis began with a credit bubble in the United States and Europe. Credit spreads narrowed significantly, meaning that the cost of borrowing to finance risky investments declined relative to safe assets such as U.S. Treasury securities. The most notable of these risky investments were high-risk mortgages.

The U.S. housing bubble was the most visible effect of the credit bubble but not the only one. Commercial real estate, high-yield debt, and leveraged loans were all boosted by the surplus of inexpensive credit.

There are three major possible explanations for the credit bubble: global capital flows, the repricing of risk, and monetary policy.

Global capital flows

Starting in the late 1990s, China, other large developing countries, and the big oil-producing nations consumed and invested domestically less than they earned. As

China and other Asian economies grew, their savings grew as well. In addition, boosted by high global oil prices, the largest oil-producing nations built up large capital surpluses and looked to invest in the United States and Europe. Massive amounts of inexpensive capital flowed into the United States, making borrowing inexpensive. Americans used the cheap credit to make riskier investments than in the past. The same dynamic was at work in Europe. Germany saved, and its capital flowed to Ireland, Italy, Spain and Portugal.

Fed Chairman Ben Bernanke describes the strong relationship between financial account surplus growth (the mirror of current account deficit growth) and house price appreciation: "Countries in which current accounts worsened and capital inflows rose . . . had greater house price appreciation [from 2001 to 2006] . . . The relationship is highly significant, both statistically and economically, and about 31 percent of the variability in house price appreciation across countries is explained."[2]

Global imbalances are an essential cause of the crisis and the most important macroeconomic explanation. Steady and large increases in capital inflows into the U.S. and European economies encouraged significant increases in domestic lending, especially in high-risk mortgages.

The repricing of risk

Low-cost capital can but does not necessarily have to lead to an increase in risky investments. Increased capital flows to the United States and Europe cannot alone explain the credit bubble.

We still don't know whether the credit bubble was the result of rational or irrational behavior. Investors may have been rational—their preferences may have changed, making them willing to accept lower returns for high-risk investments. They may have collectively been irrational—they may have adopted a bubble mentality and assumed that, while they were paying a higher price for risky assets, they could resell them later for even more. Or they may have mistakenly assumed that the world had gotten safer and that the risk of bad outcomes (especially in U.S. housing markets) had declined.

For some combination of these reasons, over a period of many years leading up to the crisis, investors grew willing to pay more for risky assets. When the housing bubble burst and the financial shock hit, investors everywhere reassessed what return they would demand for a risky investment, and therefore what price they were willing to pay for a risky asset. Credit spreads for all types of risk around the world increased suddenly and sharply, and the prices of risky assets plummeted. This was most evident in but not limited to the U.S. market for financial assets backed by high-risk, nontraditional mortgages. The credit bubble burst and caused tremendous damage.

Monetary policy

The Federal Reserve significantly affects the availability and price of capital. This leads some to argue that the Fed contributed to the increased demand for risky investments by keeping interest rates too low for too long. Critics of Fed policy argue that, beginning under Chairman Greenspan and continuing under Chairman Bernanke, the Fed kept rates too low for too long and created a bubble in housing.

Dr. John B. Taylor is a proponent of this argument. He argues that the Fed set interest rates too low in 2002–2006 and that these low rates fueled the housing bubble as measured by housing starts. He suggests that this Fed-created housing bubble was the essential cause of the financial crisis. He further argues that, had federal funds rates instead followed the path recommended by the Taylor Rule (a monetary policy formula for setting the funds rate), the housing boom and subsequent bust would have been much smaller. He also applies this analysis to European economies and concludes that similar forces were at play.

Current Fed Chairman Bernanke and former Fed Chairman Greenspan disagree with Taylor's analysis. Chairman Bernanke argues that the Taylor Rule is a descriptive rule of thumb, but that "simple policy rules" are insufficient for making monetary policy decisions.[3] He further argues that, depending on the construction of the particular Taylor Rule, the monetary policy stance of the Fed may not have diverged significantly from its historical path. Former Chairman Greenspan adds that the connection between short-term interest rates and house prices is weak—that even if the Fed's target for overnight lending between banks was too low, this has little power to explain why rates on thirty-year mortgages were also too low.

This debate intertwines several monetary policy questions:

- How heavily should the Fed weigh a policy rule in its decisions to set interest rates? Should monetary policy be mostly rule-based or mostly discretionary?
- If the Fed thinks an asset bubble is developing, should it use monetary policy to try to pop or prevent it?
- Were interest rates too low in 2002–2006?
- Did too-low federal funds rates cause or contribute to the housing bubble?

This debate is complex and thus far unresolved. Loose monetary policy does not necessarily lead to smaller credit spreads. There are open questions about the link between short-term interest rates and house price appreciation, whether housing starts are the best measure of the housing bubble, the timing of housing price increases relative to the interest rates in 2002–2006, the European comparison, and whether the magnitude of the bubble can be explained by the gap between the Taylor Rule prescription and historic rates. At the same time, many observers argue that Taylor is right that short-term interest rates were too low during this period, and therefore that his argument is at least plausible if not provable.

We conclude that global capital flows and risk repricing caused the credit bubble, and we consider them essential to explaining the crisis. U.S. monetary policy may have been an amplifying factor, but it did not by itself cause the credit bubble, nor was it essential to causing the crisis.

The Commission should have focused more time and energy on exploring these questions about global capital flows, risk repricing, and monetary policy. Instead, the

Commission focused thousands of staff hours on investigation, and not nearly enough on analyzing these critical economic questions. The investigations were in many cases productive and informative, but there should have been more balance between investigation and analysis.

Conclusions:

- The credit bubble was an essential cause of the financial crisis.
- Global capital flows lowered the price of capital in the United States and much of Europe.
- Over time, investors lowered the return they required for risky investments. Their preferences may have changed, they may have adopted an irrational bubble mentality, or they may have mistakenly assumed that the world had become safer. This inflated prices for risky assets.
- U.S. monetary policy may have contributed to the credit bubble but did not cause it.

THE HOUSING BUBBLE

The housing bubble had two components: the actual homes and the mortgages that financed them. We look briefly at each component and its possible causes.

There was a *housing* bubble in the United States—the price of U.S. housing increased by more than could be explained by market developments. This included both a national housing bubble and more concentrated regional bubbles in four "Sand States": California, Nevada, Arizona, and Florida.

Conventional wisdom is that a bubble is hard to spot while you're in one, and painfully obvious after it has burst. Even after the U.S. housing bubble burst, there is no consensus on what caused it.

While we still don't know the relative importance of the possible causes of the housing bubble, we can at least identify some of the most important hypotheses:

- **Population growth.** Arizona, Florida, Nevada, and parts of California all experienced population growth that far exceeded the national average. More people fueled more demand for houses.
- **Land use restrictions.** In some areas, local zoning rules and other land use restrictions, as well as natural barriers to building, made it hard to build new houses to meet increased demand resulting from population growth. When supply is constrained and demand increases, prices go up.
- **Over-optimism.** Even absent market fundamentals driving up prices, shared expectations of future price increases can generate booms. This is the classic explanation of a bubble.
- **Easy financing.** Nontraditional (and higher risk) mortgages made it easier for potential homebuyers to borrow enough to buy more expensive homes. This doesn't mean they could afford those homes or future mortgage payments in

the long run, but only that someone was willing to provide the initial loan. Mortgage originators often had insufficient incentive to encourage borrowers to get sustainable mortgages.

Some combination of the first two factors may apply in parts of the Sand States, but these don't explain the nationwide increase in prices.

The closely related and nationwide *mortgage* bubble was the largest and most significant manifestation of a more generalized credit bubble in the United States and Europe. Mortgage rates were low relative to the risk of losses, and risky borrowers, who in the past would have been turned down, found it possible to obtain a mortgage.[4]

In addition to the credit bubble, the proliferation of nontraditional mortgage products was a key cause of this surge in mortgage lending. Use of these products increased rapidly from the early part of the decade through 2006. There was a steady deterioration in mortgage underwriting standards (enabled by securitizers that lowered the credit quality of the mortgages they would accept, and credit rating agencies that overrated the subsequent securities and derivatives). There was a contemporaneous increase in mortgages that required little to no documentation.

As house prices rose, declining affordability would normally have constrained demand, but lenders and borrowers increasingly relied on nontraditional mortgage products to paper over this affordability issue. These mortgage products included interest-only adjustable rate mortgages (ARMs), pay-option ARMs that gave borrowers flexibility on the size of early monthly payments, and negative amortization products in which the initial payment did not even cover interest costs. These exotic mortgage products would often result in significant reductions in the initial monthly payment compared with even a standard ARM. Not surprisingly, they were the mortgages of choice for many lenders and borrowers focused on minimizing initial monthly payments.

Fed Chairman Bernanke sums up the situation this way: "At some point, both lenders and borrowers became convinced that house prices would only go up. Borrowers chose, and were extended, mortgages that they could not be expected to service in the longer term. They were provided these loans on the expectation that accumulating home equity would soon allow refinancing into more sustainable mortgages. For a time, rising house prices became a self-fulfilling prophecy, but ultimately, further appreciation could not be sustained and house prices collapsed."[5]

This explanation posits a relationship between the surge in housing prices and the surge in mortgage lending. There is not yet a consensus on which was the cause and which the effect. They appear to have been mutually reinforcing.

In understanding the growth of nontraditional mortgages, it is also difficult to determine the relative importance of causal factors, but again we can at least list those that are important:

- Nonbank mortgage lenders like New Century and Ameriquest flourished under ineffective regulatory regimes, especially at the state level. Weak disclosure standards and underwriting rules made it easy for irresponsible lenders to issue mortgages that would probably never be repaid. Federally regulated bank and thrift lenders, such as Countrywide, Wachovia, and Washington Mutual, had lenient regulatory oversight on mortgage origination as well.

- Mortgage brokers were paid for new originations but did not ultimately bear the losses on poorly performing mortgages. Mortgage brokers therefore had an incentive to ignore negative information about borrowers.
- Many borrowers neither understood the terms of their mortgage nor appreciated the risk that home values could fall significantly, while others borrowed too much and bought bigger houses than they could ever reasonably expect to afford.
- All these factors were supplemented by government policies, many of which had been in effect for decades, that subsidized homeownership but created hidden costs to taxpayers and the economy. Elected officials of both parties pushed housing subsidies too far.

The Commission heard convincing testimony of serious mortgage fraud problems. Excruciating anecdotes showed that mortgage fraud increased substantially during the housing bubble. There is no question that this fraud did tremendous harm. But while that fraud is infuriating and may have been significant in certain areas (like Florida), the Commission was unable to measure the impact of fraud relative to the overall housing bubble.

The explosion of legal but questionable lending is an easier explanation for the creation of so many bad mortgages. Lending standards were lax enough that lenders could remain within the law but still generate huge volumes of bad mortgages. It is likely that the housing bubble and the crisis would have occurred even if there had been no mortgage fraud. We therefore classify mortgage fraud not as an essential cause of the crisis but as a contributing factor and a deplorable effect of the bubble. Even if the number of fraudulent loans was not substantial enough to have a large impact on the bubble, the increase in fraudulent activity should have been a leading indicator of deeper structural problems in the market.

Conclusions:

- Beginning in the late 1990s and accelerating in the 2000s, there was a large and sustained housing bubble in the United States. The bubble was characterized both by national increases in house prices well above the historical trend and by more rapid regional boom-and-bust cycles in California, Nevada, Arizona, and Florida.
- There was also a contemporaneous mortgage bubble, caused primarily by the broader credit bubble.
- The causes of the housing bubble are still poorly understood. Explanations include population growth, land use restrictions, bubble psychology, and easy financing.
- The causes of the mortgage bubble and its relationship to the housing bubble

are also still poorly understood. Important factors include weak disclosure standards and underwriting rules for bank and nonbank mortgage lenders alike, the way in which mortgage brokers were compensated, borrowers who bought too much house and didn't understand or ignored the terms of their mortgages, and elected officials who over years piled on layer upon layer of government housing subsidies.

- Mortgage fraud increased substantially, but the evidence gathered by the Commission does not show that it was quantitatively significant enough to conclude that it was an essential cause.

TURNING BAD MORTGAGES INTO TOXIC FINANCIAL ASSETS

The mortgage securitization process turned mortgages into mortgage-backed securities through the government-sponsored enterprises (GSEs) Fannie Mae and Freddie Mac, as well as Countrywide and other "private label" competitors. The securitization process allows capital to flow from investors to homebuyers. Without it, mortgage lending would be limited to banks and other portfolio lenders, supported by traditional funding sources such as deposits. Securitization allows homeowners access to enormous amounts of additional funding and thereby makes homeownership more affordable. It also can diversify housing risk among different types of lenders. If everything else is working properly, these are good things. Everything else was not working properly.

Some focus their criticism on the *form* of these financial instruments. For example, financial instruments called collateralized debt obligations (CDOs) were engineered from different bundled payment streams from mortgage-backed securities. Some argue that the conversion of a bundle of simple mortgages to a mortgage-backed security, and then to a collateralized debt obligation, was a problem. They argue that complex financial derivatives caused the crisis. We conclude that the details of this engineering are incidental to understanding the essential causes of the crisis. If the system works properly, reconfiguring streams of mortgage payments has little effect. The total amount of risk in a mortgage is unchanged if the pieces are put together in a different way.

Unfortunately, the system did not work as it should have. There were several flaws in the securitization and collateralization process that made things worse.

- Fannie Mae and Freddie Mac, as well as Countrywide and other private label competitors, all lowered the credit quality standards of the mortgages they securitized.[6] A mortgage-backed security was therefore "worse" during the crisis than in preceding years because the underlying mortgages were generally of poorer quality. This turned a bad mortgage into a worse security.
- Mortgage originators took advantage of these lower credit quality securitization standards and the easy flow of credit to relax the underwriting discipline in the loans they issued. As long as they could resell a mortgage to the secondary market, they didn't care about its quality.

- The increasing complexity of housing-related assets and the many steps between the borrower and final investor increased the importance of credit rating agencies and made independent risk assessment by investors more difficult. In this respect, complexity did contribute to the problem, but the other problems listed here are more important.
- Credit rating agencies assigned overly optimistic ratings to the CDOs built from mortgage-backed securities.[7] By erroneously rating these bundles of mortgage-backed security payments too highly, the credit rating agencies substantially contributed to the creation of toxic financial assets.
- Borrowers, originators, securitizers, rating agencies, and the ultimate buyers of the securities into which the risky mortgages were packaged all failed to exercise prudence and perform due diligence in their respective transactions. In particular, CDO buyers who were, in theory, sophisticated investors relied too heavily on credit ratings.
- Many financial institutions chose to make highly concentrated bets on housing prices. While in some cases they did that with whole loans, they were able to more easily and efficiently do so with CDOs and derivative securities.
- Regulatory capital standards, both domestically and internationally, gave preferential treatment to highly rated debt, further empowering the rating agencies and increasing the desirability of mortgage-backed structured products.
- There is a way that housing bets can be magnified using a form of derivative. A *synthetic CDO* is a security whose payments mimic that of a CDO that contains real mortgages. This is a "side bet" that allows you to assume the same risk as if you held pieces of actual mortgages. To the extent that investors and financial institutions wanted to increase their bets on housing, they were able to use synthetic CDOs. The risks in these synthetic CDOs, however, are zero-sum, since for every investor making a bet that housing performance will fall there must be other investors with equal-sized bets in the opposite direction.

These are related but different problems. While many involve the word "derivative," it is a mistake to bundle them together and say, "Derivatives or CDOs caused the crisis." In each case, we assign responsibility for the failures to the people and institutions rather than to the financial instruments they used.

Conclusions:

Rather than "derivatives and CDOs caused the financial crisis," it is more accurate to say:

- Securitizers lowered credit quality standards;
- Mortgage originators took advantage of this to create junk mortgages;
- Credit rating agencies assigned overly optimistic ratings;
- Securities investors and others failed to perform sufficient due diligence;

- International and domestic regulators encouraged arbitrage toward lower capital standards;
- Some investors used these securities to concentrate rather than diversify risk; and
- Others used synthetic CDOs to amplify their housing bets.

The dangerous imprecision of the term "shadow banking"

Part II of the majority's report begins with an extensive discussion of the failures of the "shadow banking system," which it defines as a "financial institutions and activities that in some respects parallel banking activities but are subject to less regulation than commercial banks." The majority's report suggests that the shadow banking system was a cause of the financial crisis.

"Shadow banking" is a term used to represent a collection of different financial institutions, instruments, and issues within the financial system. Indeed, "shadow banking" can refer to any financial activity that transforms short-term borrowing into long-term lending without a government backstop. This term can therefore include financial instruments and institutions as diverse as:

- The tri-party repo market;
- Structured Investment Vehicles and other off-balance-sheet entities used to increase leverage;
- Fannie Mae and Freddie Mac;
- Credit default swaps; and
- Hedge funds, monoline insurers, commercial paper, money market mutual funds, and investment banks.

As discussed in other parts of this paper, some of these items were important causes of the crisis. No matter what their individual roles in causing or contributing to the crisis, however, they are undoubtedly different. It is a mistake to group these issues and problems together. Each should be considered on its merits, rather than painting a poorly defined swath of the financial sector with a common brush of "too little regulation."

BIG BANK BETS AND WHY BANKS FAILED

The story so far involves significant lost housing wealth and diminished values of securities financing those homes. Yet even larger past wealth losses did not bring the global financial system to its knees. The key differences in this case were leverage and risk concentration. Highly correlated housing risk was concentrated in large and highly leveraged financial institutions in the United States and much of Europe. This leverage magnified the effect of a housing loss on a financial institution's capital reserve, and the concentration meant these losses occurred in parallel.

In effect, many of the largest financial institutions in the world, along with hundreds of smaller ones, bet the survival of their institutions on housing prices. Some did this knowingly; others not.

Many investors made three bad assumptions about U.S. housing prices. They assumed:

- A low probability that housing prices would decline significantly;
- Prices were largely uncorrelated across different regions, so that a local housing bubble bursting in Nevada would not happen at the same time as one bursting in Florida; and
- A relatively low level of *strategic defaults*, in which an underwater homeowner voluntarily defaults on a non-recourse mortgage.

When housing prices declined nationally and quite severely in certain areas, these flawed assumptions, magnified by other problems described in previous steps, created enormous financial losses for firms exposed to housing investments.

An essential cause of the financial and economic crisis was appallingly bad risk management by the leaders of some of the largest financial institutions in the United States and Europe. Each failed firm that the Commission examined failed in part because its leaders poorly managed risk.

Based on testimony from the executives of several of the largest failed firms and the Commission staff's investigative work, we can group common risk management failures into several classes:

- **Concentration of highly correlated (housing) risk.** Firm managers bet massively on one type of asset, counting on high rates of return while comforting themselves that their competitors were doing the same.
- **Insufficient capital.** Some of the failed institutions were levered 35:1 or higher. This meant that every $35 of assets was financed with $1 of equity capital and $34 of debt. This made these firms enormously profitable when things were going well, but incredibly sensitive to even a small loss, as a 3 percent decline in the market value of these assets would leave them technically insolvent. In some cases, this increased leverage was direct and transparent. In other cases, firms used Structured Investment Vehicles, asset-backed commercial paper conduits, and other off-balance-sheet entities to try to have it both ways: further increasing their leverage while appearing not to do so. Highly concentrated, highly correlated risk combined with high leverage makes a fragile financial sector and creates a financial accident waiting to happen. These firms should have had much larger capital cushions and/or mechanisms for contingent capital upon which to draw in a crisis.
- **Overdependence on short-term liquidity from repo and commercial paper markets.** Just as each lacked sufficient capital cushions, in each case the failing firm's liquidity cushion ran out within days. The failed firms appear to have based their liquidity strategies on the flawed assumption that both the firm and

these funding markets would always be healthy and functioning smoothly. By failing to provide sufficiently for disruptions in their short-term financing, management put their firm's survival on a hair trigger.

- **Poor risk management systems.** A number of firms were unable to easily aggregate their housing risks across various business lines. Once the market began to decline, those firms that understood their total exposure were able to effectively sell or hedge their risk before the market turned down too far. Those that didn't were stuck with toxic assets in a disintegrating market.

Solvency failure versus liquidity failure

The Commission heard testimony from the former heads of Bear Stearns, Lehman, Citigroup, and AIG, among others. A common theme pervaded the testimony of these witnesses:

- We were solvent before the liquidity run started.
- Someone (unnamed) spread bad information and started an unjustified liquidity run.
- Had that unjustified liquidity run not happened, given enough time we would have recovered and returned to a position of strength.
- Therefore, the firm failed because we ran out of time, and it's not my fault.

In each case, experts and regulators contested the former CEO's "we were solvent" claim. Technical issues make it difficult to prove otherwise, especially because the answer depends on when solvency is measured. After a few days of selling assets at fire-sale prices during a liquidity run, a highly leveraged firm's balance sheet will look measurably worse. In each case, whether or not the firm was technically solvent, the evidence strongly supports the claim that those pulling back from doing business with the firm were not irrational. In each of the cases we examined, there were huge financial losses that at a minimum placed the firm's solvency in serious doubt.

Interestingly, in each case, the CEO was willing to admit that he had poorly managed his firm's liquidity risk, but unwilling to admit that his firm was insolvent or nearly so. In each case the CEO's claims were highly unpersuasive. These firm managers knew or should have known that they were risking the solvency and therefore the survival of their firms.

Conclusions:

- Managers of many large and midsize financial institutions in the United States and Europe amassed enormous concentrations of highly correlated housing risk on their balance sheets. In doing so they turned a building housing crisis into a subsequent crisis of failing financial institutions. Some did this knowingly; others, unknowingly.
- Managers of the largest financial firms further amplified these big bad bets by

holding too little capital and having insufficiently robust access to liquidity. Many placed their firms on a hair trigger by becoming dependent upon short-term financing from commercial paper and repo markets for their day-to-day funding. They placed failed solvency bets that their housing investments were solid, and failed liquidity bets that overnight money would always be there no matter what. In several cases, failed solvency bets triggered liquidity crises, causing some of the largest financial firms to fail or nearly fail.

"Investment banks caused the crisis"

A persistent debate among members of the Commission was the relative importance of a firm's legal form and regulatory regime in the failures of large financial institutions. For example, Commissioners agreed that investment bank holding companies were too lightly (barely) regulated by the SEC leading up to the crisis and that the Consolidated Supervised Entities program of voluntary regulation of these firms failed. As a result, no regulator could force these firms to strengthen their capital or liquidity buffers. There was agreement among Commissioners that this was a contributing factor to the failure of these firms. The Commission split, however, on whether the *relatively* weaker regulation of investment banks was an essential cause of the crisis.

Institutional structure and differential regulation of various types of financial institutions were less important in causing the crisis than common factors that spanned different firm structures and regulatory regimes. Investment banks failed in the United States, and so did many commercial banks, large and small, despite a stronger regulatory and supervisory regime. Wachovia, for example, was a large insured depository institution supervised by the Fed, OCC, and FDIC. Yet it experienced a liquidity run that led to its near failure and prompted the first-ever invocation of the FDIC's systemic risk exception. Insurance companies failed as well, notably AIG and the monoline bond insurers.

Banks with different structures and operating in vastly differing regulatory regimes failed or had to be rescued in the United Kingdom, Germany, Iceland, Belgium, the Netherlands, France, Spain, Switzerland, Ireland, and Denmark. Some of these nations had far stricter regulatory and supervisory regimes than the United States. The bad loans in the United Kingdom, Ireland, and Spain were financed by federally-regulated lenders–not by "shadow banks."

Rather than attributing the crisis principally to differences in the stringency of regulation of these large financial institutions, it makes more sense to look for common factors:

- Different types of financial firms in the United States and Europe made highly concentrated, highly correlated bets on housing.
- Managers of different types of financial firms in the United States and Europe poorly managed their solvency and liquidity risk.

TWO TYPES OF SYSTEMIC FAILURE

Government policymakers were afraid of large firms' sudden and disorderly failure and chose to intervene as a result. At times, intervention itself contributed to fear and uncertainty about the stability of the financial system. These interventions responded to two types of systemic failure.

Systemic failure type one: contagion

We begin by defining **contagion** and **too big to fail**.

If financial firm X is a large counterparty to other firms, X's sudden and disorderly bankruptcy might weaken the finances of those other firms and cause them to fail. We call this the risk of **contagion**, when, because of a direct financial link between firms, the failure of one causes the failure of another. Financial firm X is **too big to fail** if policymakers fear contagion so much that they are unwilling to allow it to go bankrupt in a sudden and disorderly fashion. Policymakers make this judgment in large part based on how much counterparty risk other firms have to the failing firm, along with a judgment about the likelihood and possible damage of contagion.

Policymakers may also act if they worry about the effects of a failed firm on a particular financial market in which that firm is a large participant.

The determination of too big to fail rests in the minds of the policymakers who must decide whether to "bail out" a failing firm. They may be more likely to act if they are uncertain about the size of counterparty credit risk or about the health of an important financial market, or if broader market or economic conditions make them more risk averse.

This logic can explain the actions of policymakers[8] in several cases in 2008:

- In March, the Fed facilitated JPMorgan's purchase of Bear Stearns by providing a bridge loan and loss protection on a pool of Bear's assets. While policymakers were concerned about the failure of Bear Stearns itself and its direct effects on other firms, their decision to act was heightened by their uncertainty about potential broader market instability and the potential impact of Bear Stearns' sudden failure on the tri-party repo market.
- In September, the Federal Housing Finance Agency (FHFA) put Fannie Mae and Freddie Mac into conservatorship. Policymakers in effect promised that "the line would be drawn between debt and equity," such that equity holders were wiped out but GSE debt would be worth 100 cents on the dollar. They made this decision because banking regulators (and others) treated Fannie and Freddie debt as equivalent to Treasuries. A bank cannot hold all of its assets in debt issued by General Electric or AT&T, but can hold it all in Fannie or Freddie debt. The same is true for many other investors in the United States and around the world–they assumed that GSE debt was perfectly safe and so they weighted it too heavily in their portfolios. Policymakers were convinced that

this counterparty risk faced by many financial institutions meant that any write-down of GSE debt would trigger a chain of failures throughout the financial system. In addition, GSE debt was used as collateral in short-term lending markets, and by extension, their failure would have led to a sudden massive contraction of credit beyond what did occur. Finally, mortgage markets depended so heavily on the GSEs for securitization that policymakers concluded that their sudden failure would effectively halt the creation of new mortgages. All three reasons led policymakers to conclude that Fannie Mae and Freddie Mac were too big to fail.

- In September, the Federal Reserve, with support from Treasury, "bailed out" AIG, preventing it from sudden disorderly failure. They took this action because AIG was a huge seller of credit default swaps to a number of large financial firms, and they were concerned that an AIG default would trigger mandatory write-downs on those firms' balance sheets, forcing counterparties to scramble to replace hedges in a distressed market and potentially triggering a cascade of failures. AIG also had important lines of business in insuring consumer and business activities that would have been threatened by a failure of AIG's financial products division and potentially led to severe shocks to business and consumer confidence. The decision to aid AIG was also influenced by the extremely stressed market conditions resulting from other institutional failures in prior days and weeks.
- In November, the Federal Reserve, FDIC, and Treasury provided assistance to Citigroup. Regulators feared that the failure of Citigroup, one of the nation's largest banks, would both undermine confidence the financial system gained after TARP and potentially lead to the failures of Citi's major counterparties.

Conclusion:

The risk of contagion was an essential cause of the crisis. In some cases the financial system was vulnerable because policymakers were afraid of a large firm's sudden and disorderly failure triggering balance-sheet losses in its counterparties. These institutions were too big and interconnected to other firms, through counterparty credit risk, for policymakers to be willing to allow them to fail suddenly.

Systemic failure type two: a common shock

If contagion is like the flu, then a common shock is like food poisoning. A common factor affects a number of firms in the same way, and they all get sick at the same time. In a common shock, the failure of one firm may inform us about the breadth or depth of the problem, but the failure of one firm does not cause the failure of another.

The common factor in this case was concentrated losses on housing-related assets in large and midsize financial firms in the United States and some in Europe.

These losses wiped out capital throughout the financial sector. Policymakers were not just dealing with a single insolvent firm that might transmit its failure to others. They were dealing with a scenario in which many large, midsize, and small financial institutions took large losses at roughly the same time.

Conclusion:

Some financial institutions failed because of a common shock: they made similar failed bets on housing. Unconnected financial firms were failing for the same reason and at roughly the same time because they had the same problem of large housing losses. This common shock meant the problem was broader than a single failed bank–key large financial institutions were undercapitalized because of this common shock.

We examine two frequently debated topics about the events of September 2008.

"The government should not have bailed out ______"

Some argue that no firm is too big to fail, and that policymakers erred when they "bailed out" Bear Stearns, Fannie and Freddie, AIG, and later Citigroup. In our view, this misses the basic arithmetic of policymaking. Policymakers were presented, for example, with the news that "AIG is about to fail" and counseled that its sudden and disorderly failure *might* trigger a chain reaction. Given the preceding failures of Fannie Mae and Freddie Mac, the Merrill Lynch merger, Lehman's bankruptcy, and the Reserve Primary Fund breaking the buck, market confidence was on a knife's edge. A chain reaction could cause a run on the global financial system. They feared not just a run on a bank, but a generalized panic that might crash the entire system–that is, the risk of an event comparable to the Great Depression.

For a policymaker, the calculus is simple: if you bail out AIG and you're wrong, you will have wasted taxpayer money and provoked public outrage. If you don't bail out AIG and you're wrong, the global financial system collapses. It should be easy to see why policymakers favored action–there was a chance of being wrong either way, and the costs of being wrong without action were far greater than the costs of being wrong with action.

"Bernanke, Geithner, and Paulson should not have chosen to let Lehman fail"

This is probably the most frequently discussed element of the financial crisis. To make this case one must argue:

- Bernanke, Geithner, and Paulson had a legal and viable option available to them other than Lehman filing bankruptcy.
- They knew they had this option, considered it, and rejected it.

- They were wrong to do so.
- They had a reason for choosing to allow Lehman to fail.

We have yet to find someone who can make a plausible case on all four counts. We think that these three policymakers would have saved Lehman if they thought they had a legal and viable option to do so. In hindsight, we also think they were right at the time–they did not have a legal and viable option to save Lehman.

Many prominent public officials and market observers have accused these three of making a mistake. These critics usually argue that these three *should have* saved Lehman. When asked what else they could have done, the critic's usual response is, "I don't know, but surely they could have done *something*. They chose not to and caused the crisis."

Those who want to label Lehman's failure a policy mistake are obliged to suggest an alternate course of action.

The Fed's assistance for Bear Stearns, and FDIC and Treasury's assistance for Wachovia, followed a pattern. In each case, the failing firm or the government found a buyer, and the government subsidized the purchase. In the case of Bear Stearns, the government subsidized the purchase, and in the case of Wachovia, the government made clear that assistance would be available if it were needed. The specific mechanics of the subsidy differed between the two cases, but in each bailout the key condition was the presence of a willing buyer.

Lehman had no willing buyer. Bank of America bought Merrill Lynch instead, and no other American financial institution was willing or able to step up. For months, government officials had tried and failed to facilitate transactions with possible domestic and foreign purchasers. At the end of "Lehman weekend," the most viable candidate was the British bank Barclays. To make the purchase, Barclays needed either a shareholder vote, which would take several weeks to execute, or the permission of their regulator. They could get neither in the time available.

Lehman was therefore facing an imminent liquidity run without a path to success. There was no buyer. There was the possibility that Barclays might be a buyer, some weeks in the future. Bernanke, Geithner, and Paulson were then confronted with the question of whether to provide an effectively uncapped loan to Lehman to supplant its disappearing liquidity while Lehman searched for a buyer.

This loan would have to come from the Fed, since before the enactment of the TARP legislation, Treasury had no authority to provide such financing. The law limits the Fed in these cases. The Fed can only provide *secured* loans. They were able to make this work for Bear Stearns and AIG because there were sufficient unencumbered assets to serve as collateral. Fed officials argue that Lehman had insufficient unpledged assets to secure the loan it would have needed to survive. Former Lehman executives and Fed critics argue otherwise, even though private market participants were unwilling to provide credit.

Was there another option? The Fed leaders would have had to direct the staff to re-evaluate in a more optimistic way the analysis of Lehman's balance sheet to justify a secured loan. They then would have had to decide to provide liquidity support to

Lehman for an indefinite time period while Lehman searched for a buyer. That asset revaluation would later have come under intense legal scrutiny, especially given the likely large and potentially uncapped cost to the taxpayer. In the meantime, other creditors to Lehman could have cashed out at 100 cents on the dollar, leaving taxpayers holding the bag for losses.

Fed Chairman Bernanke, his general counsel Scott Alvarez, and New York Fed general counsel Thomas C. Baxter Jr. all argued in sworn testimony that this option would not have been legal. Bernanke suggested that it also would have been unwise because, in effect, the Fed would have been providing an open-ended commitment to allow Lehman to shop for a buyer. Bernanke testified that such a loan would merely waste taxpayer money for an outcome that was quite unlikely to change.

Based on their actions to deal with other failing financial institutions in 2008, we think these policymakers would have taken any available option they thought was legal and viable. This was an active team that was in all cases erring on the side of intervention to reduce the risk of catastrophic outcomes. Fed Chairman Bernanke said that he "was very, very confident that Lehman's demise was going to be a catastrophe."[9] We find it implausible to conclude that they would have broken pattern on this one case at such an obviously risky moment if they had thought they had another option.

Some find it inconceivable that policymakers could be confronted with a situation in which there was no legal and viable course of action to avoid financial catastrophe. In this case, that is what happened.

THE SHOCK AND THE PANIC

Conventional wisdom is that the failure of Lehman Brothers triggered the financial panic. This is because Lehman's failure was unexpected and because the debate about whether government officials could have saved Lehman is so intense.

The focus on Lehman's failure is too narrow. The events of September 2008 were a chain of one firm failure after another:

- Sunday, September 7, FHFA put Fannie Mae and Freddie Mac into conservatorship.
- This was followed by "Lehman weekend at the New York Fed," which was in fact broader than just Lehman. At the end of that weekend, Bank of America had agreed to buy Merrill Lynch, Lehman was filing for bankruptcy, and AIG was on the verge of failure.
- Monday, September 15, Lehman filed for Chapter 11 bankruptcy protection.
- Tuesday, September 16, the Reserve Primary Fund, a money market mutual fund, "broke the buck" after facing an investor run. Its net asset value declined below $1, meaning that an investment in the fund had actually lost money. This is a critical psychological threshold for a money market fund. On the same day, the Fed approved an $85 billion emergency loan to AIG to prevent it from sudden failure.

- Thursday, September 18, the Bush Administration, supported by Fed Chairman Bernanke, proposed to Congressional leaders that they appropriate funds for a new Troubled Asset Relief Program (TARP) to recapitalize banks.
- Friday, September 19, the $700 billion TARP was publically announced.
- Sunday, September 21, the Fed agreed to accept Goldman Sachs and Morgan Stanley as bank holding companies, putting them under the Fed's regulatory purview. After this, there were no large standalone investment banks remaining in the United States.
- Thursday, September 25, the FDIC was appointed receiver of Washington Mutual and later sold it to JPMorgan.
- Monday, September 29, the TARP bill failed to pass the House of Representatives, and the FDIC agreed to provide assistance to facilitate a sale of Wachovia to Citigroup.
- Wednesday, October 1, the Senate passed a revised TARP bill. Two days later, the House passed it, and the President signed it into law. Wells Fargo, rather than Citigroup, bought Wachovia.
- As the month progressed, interbank lending rates soared, indicating the heightened fear and threatening a complete freeze of lending.

The financial panic was triggered and then amplified by the close succession of these events, and not just by Lehman's failure. Lehman was the most unexpected bad news in that succession, but it's a mistake to attribute the panic entirely to Lehman's failure. There was growing realization by investors that mortgage losses were concentrated in the financial system, but nobody knew precisely where they lay.

Conclusion:

In quick succession in September 2008, the failure, near-failure, or restructuring of ten firms triggered a global financial panic. Confidence and trust in the financial system began to evaporate as the health of almost every large and midsize financial institution in the United States and Europe was questioned.

We briefly discuss two of these failures.

The Reserve Primary Fund

The role of the Reserve Primary Fund's failure in triggering the panic is underappreciated. This money market mutual fund faced escalating redemption requests and had to take losses from its holdings of Lehman debt. On Tuesday, September 16, it broke the buck in a disorganized manner. Investors who withdrew early recouped 100 cents on the dollar, with the remaining investors bearing the losses. This spread fear among investors that other similarly situated funds might follow. By the middle of the following week, prime money market mutual fund investors had withdrawn $349 billion.

When the SEC was unable to reassure market participants that the problem was isolated, money market mutual fund managers, in anticipation of future runs, refused to renew the commercial paper they were funding and began to convert their holdings to Treasuries and cash. Corporations that had relied on commercial paper markets for short-term financing suddenly had to draw down their backstop lines of credit. No one had expected these corporate lines of credit to be triggered simultaneously, and this "involuntary lending" meant that banks would have to pull back on other activities.

The role of Fannie Mae and Freddie Mac in causing the crisis

The government-sponsored enterprises Fannie Mae and Freddie Mac were elements of the crisis in several ways:

- They were part of the securitization process that lowered mortgage credit quality standards.
- As large financial institutions whose failures risked contagion, they were massive and multidimensional cases of the too big to fail problem. Policymakers were unwilling to let them fail because:
  - Financial institutions around the world bore significant counterparty risk to them through holdings of GSE debt;
  - Certain funding markets depended on the value of their debt; and
  - Ongoing mortgage market operation depended on their continued existence.
- They were by far the most expensive institutional failures to the taxpayer and are an ongoing cost.

There is vigorous debate about how big a role these two firms played in securitization relative to "private label" securitizers. There is also vigorous debate about why these two firms got involved in this problem. We think both questions are less important than the multiple points of contact Fannie Mae and Freddie Mac had with the financial system.

These two firms were guarantors and securitizers, financial institutions holding enormous portfolios of housing-related assets, and the issuers of debt that was treated like government debt by the financial system. Fannie Mae and Freddie Mac did not by themselves cause the crisis, but they contributed significantly in a number of ways.

THE SYSTEM FREEZING

Following the shock and panic, financial intermediation operated with escalating frictions. Some funding markets collapsed entirely. Others experienced a rapid blowout in spreads following the shock and stabilized slowly as the panic subsided and the government stepped in to backstop markets and firms. We highlight three funding markets here:

- **Interbank lending.** Lending dynamics changed quickly in the federal funds market where banks loan excess reserves to one another overnight. Even large banks were unable to get overnight loans, compounding an increasingly restricted ability to raise short-term funds elsewhere.

- **Repo.** By September 2008, repo rates increased substantially, and haircuts ballooned. Nontraditional mortgages were no longer acceptable collateral.
- **Commercial paper.** The failure of Lehman and the Reserve Primary Fund breaking the buck sparked a run on prime money market mutual funds. Money market mutual funds withdrew from investing in the commercial paper market, leading to a rapid increase in funding costs for financial and nonfinancial firms that relied on commercial paper.

The inability to find funding, financial firm deleveraging, and macroeconomic weakness translated into tighter credit for consumers and businesses. Securitization markets for other kinds of debt collapsed rapidly in 2008 and still have not recovered fully, cutting off a substantial source of financing for credit cards, car loans, student loans, and small business loans.

Decreased credit availability, the collapse of the housing bubble, and additional wealth losses from a declining stock market led to a sharp contraction in consumption and output and an increase in unemployment.

Real GDP contracted at an annual rate of 4.0 percent in the third quarter of 2008, 6.8 percent in the fourth quarter, and 4.9 percent in the first quarter of 2009. The economic contraction in the fourth quarter of 2008 was the worst in nearly three decades. Firms and households that had not previously been directly affected by the financial crisis suddenly pulled back–businesses stopped hiring and halted new investments, while families put spending plans on hold. After the panic began, the rate at which the economy shed jobs jumped, going from an average of 185,000 jobs lost per month in the first three quarters of 2008, to an average of over 700,000 jobs lost per month in the fourth quarter of 2008 and the first quarter of 2009. The economy continued to lose jobs through most of 2009, with the unemployment rate peaking at 10.1 percent in October 2009 and remaining above 9.5 percent for the rest of 2009 and the first eleven months of 2010.

While the shock and panic therefore appear to have ended in early 2009, the harm to the real economy continues through today. Firms and families are still deleveraging and are uncertain about both future economic growth and the direction of future policy. The final tragedy of the financial and economic crisis is that the needed recovery is slow and looks to be so for a while longer.

NOTES

1. A vote of the Commission on December 6, 2010, limited dissenters to nine pages each in the approximately 550-page commercially published book. No limits apply to the official version submitted to the President and the Congress.

2. Ben S. Bernanke, "Monetary Policy and the Housing Bubble," Speech at the Annual Meeting of the American Economic Association, Atlanta, Georgia, January 3, 2010 (www.federalreserve.gov/newsevents/speech/bernanke20100103a.htm).

3. Ibid.

4. "Risky borrowers" does not mean poor. While many risky borrowers were low-income, a borrower with unproven income applying for a no-documentation mortgage for a vacation home was also risky.

5. Bernanke, "Monetary Policy and the Housing Bubble."

6. The Commission vigorously debated the relative importance and the motivations of the different types of securitizers in lowering credit quality. We think that both types of securitizers were in part responsible and that these debates are less important than the existence of lower standards and how this problem fits into the broader context.

7. While bad information created by credit rating agencies was an essential cause of the crisis, it is less clear why they did this. Important hypotheses include: (1) bad analytic models that failed to account for correlated housing price declines across wide geographies, (2) an industry model that encouraged the rating agencies to skew their ratings upward to generate business, and (3) a lack of market competition due to their government-induced oligopoly.

8. In most cases during the crisis, the three key policymakers were Treasury Secretary Henry Paulson, Federal Reserve Chairman Ben Bernanke, and Federal Reserve Bank of New York President Timothy Geithner. Other officials were key in particular cases, such as FHFA Director Jim Lockhart's GSE actions and FDIC Chairman Sheila Bair's extension of temporary loan guarantees to bank borrowing in the fall of 2008. During the financial recovery and rebuilding stage that began in early 2009, the three key policymakers were Treasury Secretary Timothy Geithner, Fed Chairman Ben Bernanke, and White House National Economic Council Director Larry Summers.

9. Ben S. Bernanke, testimony before the FCIC, Hearing on Too Big to Fail: Expectations and Impact of Extraordinary Government Intervention and the Role of Systemic Risk in the Financial Crisis, session 1: The Federal Reserve, September 2, transcript, p. 78.

Appendix C:

"Rethinking the Great Recession"

By Robert J. Samuelson

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Rethinking the Great Recession

by Robert J. Samuelson

In embracing a victims-and-villains explanation of the recession, Americans are missing important lessons
about the future of the U.S. economy.

We Americans turn every major crisis into a morality tale in which the good guys and the bad guys are identified and praised or vilified accordingly. There's a political, journalistic, and intellectual imperative to find out who caused the crisis, who can be blamed, and who can be indicted (either in legal courts or the court of public opinion) and, if found guilty, be jailed or publicly humbled. The great economic and financial crisis that began in 2007 has been no exception. It has stimulated an outpouring of books, articles, and studies that describe what happened: the making of the housing bubble, the explosion of complex mortgage-backed securities, the ethical and legal shortcuts used to justify dubious but profitable behavior. This extended inquest has produced a long list of possible villains: greedy mortgage brokers and investment bankers, inept government regulators, naive economists, self-serving politicians. What it hasn't done is explain why all this happened.

The story has been all about crime and punishment when it should have been about boom and bust. The boom did not begin with the rise of home prices, as is usually asserted. It began instead with the suppression of double-digit inflation in the early 1980s, an event that unleashed a quarter-century of what seemed to be steady and dependable prosperity. There were only two recessions, both of them short and mild. Unemployment peaked at 7.8 percent. As inflation fell, interest rates followed. The stock market soared. From 1979 to 1999, stock values rose 14-fold. Housing prices climbed, though less spectacularly. Enriched, Americans borrowed and spent more. But what started as a justifiable response to good economic news—lower inflation—slowly evolved into corrupting overconfidence, the catalyst for the reckless borrowing, overspending, financial speculation, and regulatory lapses that caused the bust.

In some ways, the boom-bust story is both more innocent and more disturbing than the standard explanations of blundering and wrongdoing. It does not excuse the financial excesses, policy mistakes, economic miscalculations, deceits, and crimes that contributed to the collapse. But it does provide a broader explanation and a context. People were conditioned by a quarter-century of good economic times to believe that we had moved into a new era of reliable economic growth. Homeowners, investors, bankers, and economists all suspended disbelief. Their heady assumptions fostered a get-rich-quick climate in which wishful thinking, exploitation, and illegality flourished. People took shortcuts and thought they would get away with them. In this sense, the story is more understandable and innocent than the standard tale of calculated greed and dishonesty.

But the story is also more disturbing in that it batters our faith that modern economics—whether of the Left or Right—can protect us against great instability and insecurity. The financial panic and subsequent Great Recession have demonstrated that the advances in economic management and financial understanding that supposedly protected us from violent business cycles—ruling out another Great Depression—were oversold, exposing us to larger economic reversals than we thought possible. It's true that we've so far avoided another depression, but it was a close call, and the fact that all the standard weapons (low interest rates, huge government budget deficits) have already been deployed leaves open the disquieting question of what would happen if the economic system again lurched violently into reverse. The economic theorems and tools that we thought could forewarn and protect us are more primitive than we imagined. We have not traveled so far from the panic-prone economies of 1857, 1893, and 1907 as we supposed.

Our experience since 2007 has also revealed a huge contradiction at the center of our politics. Prosperity is almost everyone's goal, but too much prosperity enjoyed for too long tends to destroy itself. It seems that periodic recessions and burst bubbles—at least those of modest proportions—serve a social purpose by reminding people of economic and financial hazards and by rewarding prudence. Milder setbacks may avert less frequent but larger and more damaging convulsions—such as the one we're now experiencing—that shake the country's very political and social foundations. But hardly anyone wants to admit this publicly. What politician is going to campaign on the slogan, "More Recessions, Please"?

In a more honest telling of the story, avaricious Wall Street types, fumbling government regulators, and clueless economists become supporting players in a larger tragedy that is not mainly of their making. If you ask who did make it, the most honest answer is: We all did. Put differently, the widely shared quest for ever-improving prosperity contributed to the conditions that led to the financial and economic collapse. Our economic technocrats as well as our politicians and the general public constantly strive for expansions that last longer, unemployment that falls lower, economic growth that increases faster. Americans crave booms, which bring on busts. That is the unspoken contradiction.

Naturally, it's unwelcome and unacknowledged. What we want to hear is that we were victimized and that, once the bad actors and practices are purged, we can resume the pursuit of uninterrupted and greater prosperity. So that's what most crisis postmortems aim to do. They tell us who's to blame and what we must accomplish to resume the quest for ever greater prosperity. Good policies will replace bad. To simplify only slightly, the theories of the crisis break into two camps—one from the Left, one from the Right.

From the Left, the explanation is greed, deregulation, misaligned pay incentives, and a mindless devotion to "free markets" and "efficient markets" theory. The result, it's said, was an orgy of risk taking, unrestrained either by self-imposed prudence or sensible government oversight. Mortgage brokers and others relaxed lending standards for home mortgages because they were not holding them but passing them on to investment bankers, who packaged them in increasingly arcane securities, which were then bought by other investment entities (pension funds, hedge funds, foreign banks). These investors were in turn reassured because the securities had received high ratings from agencies such as Moody's, Standard & Poor's, and Fitch. All along the financial supply chain, people had incentives to minimize or ignore risks because the volume of loans, securitizations, or ratings determined their compensation. The more they ignored risk, the more they earned. The result was a mountain of bad debt that had to collapse, to the great peril of the entire financial system and the economy.

The Right's critique blames the crisis mainly on government, which, it is alleged, encouraged risk taking in two ways. First, through a series of interventions in financial markets, it seemed to protect large investors against losses. Portfolio managers and lenders were conditioned to expect bailouts. Profits were privatized, it said, and losses socialized. In 1984, government bailed out Continental Illinois National Bank and Trust Company, then the nation's seventh-largest bank. In the early 1990s, the Treasury rescued Mexico, thus protecting private creditors who had invested in short-term Mexican government securities. The protection continued with the bailout of the hedge fund Long-Term Capital Management in 1998. After the tech bubble burst in 2000, the Federal Reserve again rescued investors by lowering interest rates.

The second part of the Right's argument is that government directly inflated the bubble by keeping interest rates too low (the Federal Reserve's key rate fell to one percent in 2003) and subsidizing housing. In particular, Fannie Mae and Freddie Mac—government-created and -subsidized institutions—underwrote large parts of the mortgage market, including subprime mortgages.

We can test these theories of the crisis against the evidence. Note: Each aims to answer the same questions. Why did the system spin out of control? What caused the surge in borrowing by households and financial institutions? What led to the decline in lending standards and, as important, the misreading of risk, even by supposedly sophisticated players and observers?

Let's start with the critique from the Left. The presumption is that with adequate regulation, problems would have been identified and corrected before they reached crisis proportions. Although this analysis seems plausible—and has been embraced by many journalists, economists, and politicians, and by much of the public—it rests on a wobbly factual foundation. For starters, many major players *were* regulated: Multiple agencies, including the Federal Reserve, supervised all the large bank-holding companies, including Citigroup, Bank of America, and Wachovia. Washington Mutual, a large mortgage lender that had to be rescued and was merged into JPMorgan Chase, was regulated by the Office of Thrift Supervision. Fannie and Freddie were regulated. To be sure, gaps existed; many mortgage brokers were on loose leashes. But there was enough oversight that alert regulators should have spotted problems and intervened to stop dubious lending.

The problem was not absent regulation; it was that the regulators were no smarter than the regulated. By and large, they didn't anticipate the troubles that would afflict subprime mortgages or the devastating financial and economic ripple effects. The idea that regulators possess superior wisdom rests mainly on the myth that tough regulation in the 1970s and '80s prevented major financial problems. History says otherwise. In the 1980s, more than 1,800 banks failed, including savings and loan associations. Their problems were not anticipated.

More important, many of the largest U.S. banks almost failed. They had lent billions of dollars to Mexico, Brazil, and other developing countries—loans that could not be repaid. If banks had been forced to recognize these losses immediately, much of the banking system would have been "nationalized," writes William Isaac, who headed the Federal Deposit Insurance Corporation between 1981 and 1985, in his recent book *Senseless Panic.* Losses would have depleted banks' reserves and capital. Instead, regulators temporized. They allowed bad loans to be refinanced until banks' capital increased sufficiently to bear the losses. Still, regulators weren't smart enough to prevent the loans from being made in the first place.

As for greed and dishonesty, their role in the crisis is exaggerated. Of course, greed was widespread on Wall Street and elsewhere. It always is. There was also much mistaken analysis about the worth of mortgages and the complex securities derived from them. But being wrong is not the same as being dishonest, and being greedy is not the same as being criminal. In general, banks and investment banks weren't universally offloading mortgage securities known to be overvalued. Some of this happened; testimony before the Financial Crisis Inquiry Commission shows that some banks knew (or should have known) about the poor quality of mortgages. But many big financial institutions kept huge volumes of these securities. They, too, were duped—or duped themselves. That's why there was a crisis. Merrill Lynch, Bear Stearns, and Wachovia, among others, belonged to this group.

If anything, the Right's critique—Wall Street became incautious because government conditioned it to be incautious—is weaker. It's the textbook "moral hazard" argument: If you protect people against the consequences of their bad behavior, you will incite bad behavior. But this explanation simply doesn't fit the facts. Investors usually weren't shielded from their mistakes, and even when they were, it was not possible to know in advance who would and wouldn't be helped. In 1984, the shareholders of Continental Illinois weren't protected; when the FDIC rescued the bank, it also acquired 80 percent of the company's stock. When the Federal Reserve orchestrated a bailout of Long-Term Capital Management in 1998, most of the original shareholders lost the majority of their stake. After the bursting of the stock market bubble in 2000, most investors weren't spared massive paper losses, even with Alan Greenspan's easy money. From the market's peak in early 2000 to its trough in October 2002, stock values dropped 50 percent, a wealth loss of about $8.5 trillion, according to the investment advisory firm Wilshire Associates.

Likewise, many investors weren't protected in the current crisis. The share prices of most major financial institutions—even those that survived—declined dramatically. The stockholders of Bear Stearns and Lehman Brothers suffered massive losses, and their executives and employees were among the biggest losers. Fannie and Freddie's shareholders met a similar fate. Institutions that were "too big to fail" did fail in a practical sense. It is true that, both before and after the present crisis, some creditors were shielded. Foreign lenders in the Mexican debt crisis of the early 1990s were protected, and most (though not all) lenders to major financial institutions were protected in the present crisis. But to repeat: The protections were not pervasive or predictable enough to inspire the sort of reckless risk taking that actually occurred.

As for interest rates, it is probably true that the very low rates adopted by Greenspan (the one percent rate on overnight loans lasted from June 2003 to June 2004, and even after that, rates remained low for several years) contributed to the speculative climate. Some investors did shift to riskier long-term bonds in an attempt to capture higher interest rates, and the additional demand likely reduced the return on these bonds somewhat. But a bigger effect on long-term rates, including mortgages, seems to have come from massive inflows of foreign money over which the Federal Reserve had no control. Moreover, the fact that housing booms also occurred in England, Spain, and Ireland, among other countries, seems to exonerate the Fed's interest rates policies as the main cause of the housing bubble.

The central question about the crisis that must be answered is, Why was almost everyone fooled? "Almost everyone" includes most economists (starting with Fed chairmen Alan Greenspan and Ben Bernanke), most investors, most traders, most bankers, the rating agencies, most government regulators, most corporate executives, and most ordinary Americans. There were, of course, exceptions or partial exceptions. Warren Buffett warned against the dangers of financial derivatives—but did not anticipate the problem of mortgages. In *The Big Short* (2010), journalist Michael Lewis chronicled the tale of professional investors who were dismissed as oddballs and deviants when they correctly questioned the worth of subprime mortgages. Economist Nouriel

Roubini foresaw the connections between fragile financial markets and the real economy, but his early pessimism was a minority view.

People are conditioned by their experiences. The most obvious explanation of why so many people did not see what was coming is that they'd lived through several decades of good economic times that made them optimistic. Prolonged prosperity seemed to signal that the economic world had become less risky. Of course, there were interruptions to prosperity. Indeed, for much of this period, Americans groused about the economy's shortcomings. Incomes weren't rising fast enough; there was too much inequality; unemployment was a shade too high. These were common complaints. Prosperity didn't seem exceptional. It seemed flawed and imperfect.

That's the point. Beneath the grumbling, people of all walks were coming to take a basic stability and state of well-being for granted. Though business cycles endured, the expectation was that recessions would be infrequent and mild. When large crises loomed, governments—mainly through their central banks, such as the Federal Reserve—seemed capable of preventing calamities. Economists generally concurred that the economy had entered a new era of relative calm. A whole generation of portfolio managers, investors, and financial strategists had profited from decades of exceptional returns on stocks and bonds. But what people didn't realize then—and still don't—is that almost all these favorable trends flowed in one way or another from the suppression of high inflation.

It's hard to recall now, but three decades ago, inflation was the nation's main economic problem. It had risen from negligible levels of about one percent in 1960 to about six percent at the end of the 1960s and to 12 to 14 percent in 1979 and 1980. Hardly anyone believed it could be controlled, although it was a source of deepening havoc, spurring four recessions since 1969, a stagnant stock market, and rising interest rates. And yet, the pessimists were proven wrong. A wrenching recession—deliberately engineered by then–Federal Reserve chairman Paul Volcker and supported by the newly elected Ronald Reagan—smothered inflationary psychology. It did so in a conventionally destructive way. Volcker tightened credit. Banks' prime interest rates, the rates they charged on loans to their best customers, averaged 19 percent in 1981. There were gluts of jobless workers (unemployment reached 10.8 percent in late 1982), underutilized factories, and vacant stores and office buildings. But by 1984, inflation was down to four percent, and by 2000 it had gradually declined to the unthreatening levels of the early 1960s.

When Americans think of this inflation—if they think of it at all—they focus on inflation's rise and ignore the consequences of its fall, disinflation. But these consequences were huge and mostly beneficial. The two recessions that occurred between 1982 and 2007—those of 1990–91 and 2001—each lasted only eight months. Over an entire quarter-century, the economy was in recession for a total of only 16 months, slightly more than a year. By contrast, the four recessions that struck between 1969 to 1982 lasted a total of 49 months, or about four years out of 13. Peak unemployment, 10.8 percent as noted, was much higher than in the following quarter-century, when it topped out at 7.8 percent. Economists called this subdued business cycle "the Great Moderation," and wrote papers and organized conferences to explore it. But the basic explanation seemed evident: High and rising inflation was immensely destabilizing; low and falling inflation was not.

Declining inflation also stoked stock market and housing booms. By the end of 1979, the Standard & Poor's 500 index had barely budged from its 1968 level; by year-end 1999, it had risen by a factor of 14. The rise in housing prices was less steep, though still impressive. In 1980, the median-priced existing home sold for $62,000; by 1999, the median price had climbed to $141,000. Declining interest rates propelled these increases. As inflation subsided—and as Americans realized that its decline was permanent—interest rates followed. From 1981 to 1999, interest rates on 10-year Treasury bonds fell from almost 14 percent to less than six percent. Lower rates boosted stocks, which became more attractive compared with bonds or money market funds. Greater economic stability helped by making future profits more certain. Lower interest rates increased housing prices by enabling buyers to pay more for homes.

Millions of Americans grew richer. From 1980 to 2000, households' mutual funds and stocks rose in value from $1.1 trillion to $10.9 trillion. The 10-fold increase outpaced that of median income, which roughly doubled during the same period, reaching $42,000. Over the same years, households' real estate wealth jumped from $2.9 trillion to $12.2 trillion. Feeling richer and less vulnerable to recessions, Americans borrowed more (often against their higher home values). This borrowing helped fuel a consumption boom that sustained economic expansion. Disinflation had, it seemed, triggered a virtuous circle of steady economic and wealth growth.

It was not just the real economy of production and jobs that seemed to have become more stable. Financial markets—stocks, bonds, foreign exchange, and securities of all sorts—also seemed calmer. Volatility, a measure of how much prices typically fluctuate, declined in the early 2000s. Sophisticated investors and traders understood this. Studies confirmed it.

Finally, government economic management seemed more skillful. The gravest threats to stability never materialized. In October 1987, the stock market dropped a frightening 20 percent in a single day, but that did not trigger a deep recession. Neither did the 1997–98 Asian financial crisis (when some countries defaulted on loans) or the bursting of the tech bubble in 2000. In each case, the Federal Reserve seemed to check the worst consequences. Faith in the Fed grew; Greenspan was dubbed the "maestro."

Well, if the real economy and financial markets were more stable and the government more adept, then once risky private behaviors would be perceived as less hazardous. People could assume larger debts, because their job and repayment prospects were better and their personal wealth was steadily increasing. Lenders could liberalize credit standards, because borrowers were more reliable. Investors could adopt riskier strategies, because markets were less frenetic. In particular, they could add "leverage"—i.e., borrow more—which, on any given trade, might enhance profits.

So, paradoxically, the reduction of risk prompted Americans to take on more risk. From 1995 to 2007, household debt grew from 92 percent to 138 percent of disposable income. Bear Stearns, Lehman Brothers, and other financial institutions became heavily dependent on short-term loans that underpinned leverage ratios of 30 to 1 or more. (In effect, firms had $30 of loans for every $1 of shareholder capital.) Economists and government regulators became complacent and permissive. Optimism became self-fulfilling and self-reinforcing. Americans didn't think they were behaving foolishly because so many people were doing the same thing. This—not deregulation or investor "moral hazard"—was the foundry in which the crisis was forged.

What now seems unwise could be rationalized then. Although households borrowed more, their wealth expanded so rapidly that their net worth—the difference between what they owned and what they owed—increased. Their financial positions looked stronger. From 1982 to 2004, households' net worth jumped from $11 trillion to $53 trillion. Ascending home prices justified easier credit standards, because if (heaven forbid) borrowers defaulted, loans could be recouped from higher home values. Because the rating agencies adopted similarly favorable price assumptions, their models concluded that the risks of mortgage-backed securities were low. No less a figure than Greenspan himself dismissed the possibility of a nationwide housing collapse. People who sold a house usually had to buy another. They had to live somewhere. That process would sustain demand. "While local economies may experience significant speculative price imbalances," he said in 2004, "a national severe price distortion seems most unlikely."

As time passed, the whole system became more fragile and vulnerable. If the complex mortgage securities held by banks and others began to default—as they did—then the short-term loans that were used to finance the purchase of these securities would be curtailed or withdrawn, threatening the banks' survival. Because no one knew precisely which banks held which securities (and, therefore, which banks were weakest), this process—once started—could cause a panic within the financial system. Banks, hedge funds, pensions, and corporations would retreat from trading and lending for fear that they might not be repaid. As banks and companies hoarded cash, production and jobs would decrease. Basically, that's what happened. The initial reaction to disinflation, reflecting its real benefits, had disintegrated into overborrowing, speculation, and self-deception.

It's worth noting that this explanation of the present crisis is neither widely held nor original. It vindicates Charles Kindleberger, the late economic historian who argued in his 1978 book *Manias, Panics, and Crashes* that financial crises occur in three stages. First comes "displacement": a favorable development such as new technology, the end of a war, or a change in government that improves the economic outlook. Next is "euphoria": the process by which a proportionate response to the original development becomes an artificial "bubble." The last stage is "revulsion": the recognition of excesses, which leads to panic and a collapse of speculative prices.

Beginning in the 1980s, the U.S. economy followed exactly this pattern. The decline of double-digit inflation was the original "displacement." The ensuing prolonged prosperity spawned "euphoria," which culminated in the "revulsion" and panic of 2008. But Kindleberger's views—which built on those of the economist Hyman Minsky—have never commanded center stage among academic economists. Though widely read and respected, Kindleberger was always something of a renegade. He expressed skepticism and even contempt for the mathematical models and theoretical constructs that have defined mainstream macroeconomics for decades, while paying great attention to historical conditions and events.

If this explanation of the crisis is correct, it raises momentous questions. Since World War II, American democracy has been largely premised on its ability to create ever greater economic benefits—higher living standards, more social protections, greater job and income security—for most of its citizens. The promise has largely succeeded and, in turn, rests heavily on the belief, shared unconsciously by leaders in both parties, that we retain basic control over the economy. Until recently, the consensus among economists was that another Great Depression was unthinkable. We could prevent it. As for recessions, we might not be able to eliminate them entirely, but we could regulate them and minimize the damage. Economic knowledge and management had progressed. These comforting assumptions now hang in doubt.

The great delusion of the boom was that we mistook the one-time benefits of disinflation for a permanent advance in the art of economic stabilization. We did so because it fulfilled our political wish. Ironically, the impulse to improve economic performance degraded economic performance. This happened once before, in the 1960s and '70s, when academic economists—among them Walter Heller of the University of Minnesota, James Tobin of Yale, and Robert Solow of MIT—sold political leaders on an ambitious agenda. Despite widespread post–World War II prosperity, there had been recessions every three or four years. Invoking John Maynard Keynes, the economists said they could—by manipulating budget deficits and interest rates—smooth business cycles and maintain "full employment" (then defined as four percent unemployment) most of the time. They couldn't, and the effort to do so created the inflation that crippled the economy for 15 years.

We still haven't forsaken the hope for perfected prosperity. After the recent crisis, both liberals and conservatives offered therapeutic visions. Liberals promoted expanded regulation to curb Wall Street's excesses. Conservatives wanted a less activist government that would let markets perform their disciplining functions. Both may achieve some goals. Liberals have already engineered greater regulation. Banks will be required to hold more capital as a cushion against losses. The new financial reform legislation would allow government to shut large failing financial institutions, such as Lehman Brothers, without resorting to disruptive bankruptcy. Conservatives may take solace from fewer bailouts. They are so unpopular that investors must know that the chances of getting one have diminished. Together, these changes may make the financial system safer.

The trouble is that, like generals fighting the last war, we may be fighting the last economic crisis. Future threats to stability may originate elsewhere. One danger spot is globalization. Economies are intertwined in ways that are only crudely understood. Supply chains are global. Vast sums of money routinely cross borders and shift among currencies. Countries are mutually dependent and mutually vulnerable through many channels: Supplies of oil and other essential raw materials may be curtailed; cyberattacks could cripple vital computer networks; manipulated exchange rates might disrupt trade and investment flows. Economic activity has grown more international, while decision making remains largely with nation-states. Although the global economy has remained basically stable since World War II, there is really no good theory as to why it should stay so—and there are some signs (currency tensions, for instance) that it may not.

Overcommitted welfare states pose another threat. Most affluent nations face similar problems: High budget deficits and government debts may portend a loss of investor confidence, but the deficits and debts have been driven higher by massive social spending—on pensions, health care, unemployment insurance, education—that people have come to expect. Economics and politics are colliding. If the debt and deficits aren't controlled, will investors someday desert bond markets, jolting interest rates upward and triggering a new financial crisis? But if many countries try to control deficits simultaneously, might a tidal wave of spending cuts and tax increases cause a global depression? (The United States, Europe, and Japan still constitute about half the world's economy.) These are all good questions without good answers. The underlying problem is that economic change seems to have outrun economic understanding and control.

It's widely believed that the financial panic and Great Recession constitute a watershed for global capitalism, which has been (it's said) permanently discredited. Around the world, the political pendulum is swinging from unfettered competition toward more government oversight. Markets have been deemed incorrigibly erratic. Greed must be contained, and the greedy must be taxed. These ideas reflect a real shift in thinking, but in time that may not be seen as the main consequence of the economic collapse. These ideas imply that capitalism was unsupervised and untaxed before. Of course, this is not true. Businesses everywhere, big and small, were and are regulated and taxed. Future changes are likely to be those of degree, in part because countervailing forces, mobile capital being the most obvious, will impose limits. Countries that oppressively regulate or tax are likely to see businesses go elsewhere.

What looms as the most significant legacy of the crisis is a loss of economic control. Keynes famously remarked that "practical men" are "usually the slaves of some defunct economist." By this he meant that politics and public opinion are often governed by what economists (living and dead, actually) define as desirable and doable. In the years after World War II, the prevailing assumption among economists, embraced by much of the public, was that we had conquered the classic problem of booms and busts. Grave economic crises afflicted only developing countries or developed countries that had grossly mismanaged their affairs. This common view is no longer tenable. It has been refuted by events.

Our economic knowledge and tools came up short. Either they were overwhelmed by change or their power was always exaggerated. This does not mean that economic growth will cease. Chances are that the United States and the other prosperous nations of the developed world will, over time, get wealthier as a result of technological changes that are now barely glimpsed. But the widespread faith—and the sense of security it imparted—that economic management would forever spare us devastating disruptions has been shattered. Just as there has never been a war to end all wars, there has yet to be an economic theory that can end all serious instability.

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United States House of Representatives
Committee on Financial Services

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