

# Policy Analysis

No. 648

October 8, 2009

## *Would a Stricter Fed Policy and Financial Regulation Have Averted the Financial Crisis?*

by Jagadeesh Gokhale and Peter Van Doren

### Executive Summary

Many commentators have argued that if the Federal Reserve had followed a stricter monetary policy earlier this decade when the housing bubble was forming, and if Congress had not deregulated banking but had imposed tighter financial standards, the housing boom and bust—and the subsequent financial crisis and recession—would have been averted. In this paper, we investigate those claims and dispute them. We are skeptical that economists can detect bubbles in real time through technical means with any degree of unanimity. Even if they could, we doubt the Fed would have altered its policy in the early 21st century, and we suspect that political leaders would have exerted considerable pressure to maintain that policy. Concerning regulation, we find that the banking reform of the late 1990s had little effect on the housing boom and bust, and that the many reform ideas currently proposed would have done little or nothing to avert the crisis.

Commentators have also argued that the popularization of financial products such as teaser-rate hybrid loans for subprime homebuyers and credit default swaps for investors is to blame for the financial crisis. We find little evidence for this. Housing data indicate that the majority of subprime hybrid loans that have entered default had not undergone interest rate resets, and the default rate for subprime hybrid loans is not much higher than for subprime fixed rate loans. Concerning swaps, although their introduction may increase financial inflows into risky sectors, their execution through a clearing-house or regulation via other means would not necessarily have avoided the mispricing of risks in underlying contracts. Capital requirements for the credit default swaps that were used to insure mortgage-backed securities would have been low because housing investments were not considered risky.

---

*Jagadeesh Gokhale is a senior fellow at the Cato Institute and the author of Social Security: A Fresh Look at Reform Alternatives (forthcoming). Peter Van Doren is a senior fellow at the Cato Institute and the editor of Cato's Regulation magazine.*

**Economists cannot detect asset-price bubbles in real time through technical means with any degree of uniformity.**

## **Introduction**

Many commentators argue that the housing market boom and bust, the subsequent implosion of financial markets, and the recession that followed have two important causes: inappropriately loose monetary policy during 2003–2005 and financial market deregulation, including the 1999 Gramm-Leach-Bliley banking reform act (GLB), the lack of regulation of credit default swaps, and loose capital and leverage standards.<sup>1</sup> The commentators claim that tighter Federal Reserve Policy and stricter capital market regulation would have averted the crisis and should be adopted now to avoid future crises.

We investigate these claims and dispute them. First, economists cannot detect asset-price bubbles in real time through technical means with any degree of unanimity. Second, even if economists could detect asset-price bubbles without significant controversy, the Fed may not have enacted tighter monetary policy in the period prior to the housing bubble because of heightened concerns about deflation at the time. And if the Fed had adopted such policy, it would have faced severe bipartisan criticism from Congress and the White House, which wanted low interest rates at a time when inflation was low and economic growth was sluggish following the 2001 recession. Third, even if bubble detection were possible and the Fed had political support to stop bubbles, it could not have used its short-term rate-setting power to stop housing bubbles during the 2004–2006 period because Fed short-term rates were no longer correlated with short- or long-term mortgage interest rates.

Our discussion of financial market deregulation includes discussion of three claims. The passage of Gramm-Leach-Bliley Act had the accidental effect of lowering the capital standards governing investment banks, but it did not mean the banks were operating under *laissez faire*. Instead, they were subject to the Basel I and II regulatory framework, which considered investment in residential mortgages to be fairly safe.

Second, we consider credit default swaps (CDSs), and argue that, although their introduction may increase financial inflows into risky sectors, their execution through a clearing-house or regulation via other means would not necessarily have avoided the mispricing of risks in underlying contracts. Capital requirements for CDSs that insured mortgage-backed securities would have been low because housing investments were not considered risky.

Third, many have argued that low teaser-rate hybrid loans and low capital standards for financial institutions are to blame.<sup>2</sup> Yet, the data do not support the teaser-rate argument because the majority of mortgages in foreclosure had not undergone interest rate resets, and increased capital standards would likely have led to increased risk taking as financial firms pursued what appeared to be safe but high returns in the residential real estate market.

In short, the many policy proposals that advocates on the Left and Right now say are necessary because of the financial crisis—such as stricter regulation of derivatives and banking, higher reserve requirements, and more conservative Fed policy—would have done little to avert the financial crisis. The crisis is simply the product of the widespread belief that residential real estate investment is “safe as houses,” and it is unclear what policy could have disabused both policymakers and financial markets of a firmly held, but false, belief.

## **Detecting the Home Price Bubble—A Failure?**

Many argue that an essential component of any policy to prevent future financial crises and their negative effects on the real economy is the detection of asset-price bubbles.<sup>3</sup> For such a policy to be successful, economists must be able to use the technical tools of the discipline to distinguish sustainable from unsustainable asset appreciation in real time and inform decisionmakers about appropriate policy responses. We believe that the track record of forecasts during the recent hous-

ing-price bubble suggests that such a faith in the ability of technical analysis to reveal “the correct” answer is unwarranted. As housing appreciation occurred from 2000 to 2006, consider the quotations that follow from some prominent economists who doubted that there was a housing bubble or who believed that the bubble posed little risk to the broader economy.

Suzanne Stewart and Ike Brannon, congressional staff economists, wrote in the spring of 2006:

Predictions about home prices have gone from a sober questioning of future price growth to shrill apocalyptic predictions of an impending market collapse that will trigger a deep recession. . . . With no specter of inflation . . . relatively low returns . . . and a stagnant stock market . . . who is to say that . . . a family spending another \$100,000 on a nicer house is not making a wise decision?<sup>4</sup>

Robert Van Order and Rose Neng Lai, professors at the University of Michigan’s Business School and University of Macau, China, respectively, conducted statistical tests of momentum shifts in home price increases. They concluded in November of 2006:

We find evidence of momentum throughout the period (1980 and later) and some evidence that the momentum increased after 1999, but not by a lot. We find no evidence of an increase in volatility. We also do not find evidence of explosive momentum after 1999, nor do we find much difference in price growth behavior between the bubble and nonbubble candidate cities. We do find that momentum operates with a long lag. There were always bubbles, but not large regime shifts, at least not in our sample period.<sup>5</sup>

Writing in the Federal Reserve Bank of New York’s *Economic Policy Review* in December 2004, bank senior economist Jonathan

McCartney and vice president Richard W. Peach said:

Home prices have been rising strongly . . . prompting concerns that a bubble exists . . . and that home prices are vulnerable to a collapse. . . . A close analysis of the U.S. housing market . . . finds little basis for such concerns. The . . . upturn in home prices is . . . attributable to strong market fundamentals . . . and regional price declines in the past have not had devastating effects on the broader economy.<sup>6</sup>

John V. Duca, vice president and senior economist at the Dallas Federal Reserve, wrote in that bank’s *Southwest Economy* in spring of 2004:

Overall home prices have risen . . . by 37 percent since 1997 (26 percent when adjusted for inflation). Such increases have raised concerns that low interest rates have spawned a housing-price bubble. . . . One key finding is that although there is little risk of a national bubble, prices in some areas are vulnerable if local economic conditions deteriorate.<sup>7</sup>

One year later, he wrote in the same journal:

Mortgage innovations have made housing a more liquid, and thus more attractive, asset. In addition, the demand for owning more than one home has recently increased. For these reasons, prices may not be as overvalued as [a chart in the journal] suggests.<sup>8</sup>

Alan Greenspan, then chairman of the Federal Reserve, told a congressional committee in June 2005:

Although we certainly cannot rule out home price declines, especially in some local markets, these declines, were they to occur, likely would not have sub-

**The majority of mortgages in foreclosure had not undergone interest rate resets.**

**If these economists could not foresee the danger posed by the housing bubble, how could policymakers?**

stantial macroeconomic implications. Nationwide banking and widespread securitization of mortgages make it less likely that financial intermediation would be impaired than was the case in prior episodes of regional house price corrections.<sup>9</sup>

Even as late as 2007, Austan Goolsbee of the University of Chicago (now a top economic adviser to President Obama) said:

Lost in the current discussion about borrowers' income levels in the sub-prime market is the fact that someone with a low income now but who stands to earn much more in the future would, in a perfect market, be able to borrow from a bank to buy a house. That is how economists view the efficiency of a capital market: people's decisions unrestricted by the amount of money they have right now. . . . Measured this way, the mortgage market has become more perfect, not more irresponsible. People tend to make good decisions about their own economic prospects.<sup>10</sup>

Apart from these "establishment" economists, a few voiced warnings of a potential housing-price bubble. Among them were Wellesley College economist Karl Case and Yale economist Robert Shiller, cocreators of the Case-Shiller house-price index.<sup>11</sup> However, even Case and Shiller said in 2003:

Judging from the historical record, a nationwide drop in real housing prices is unlikely, and the drops in different cities are not likely to be synchronous: some will probably not occur for a number of years. Such a lack of synchrony would blunt the impact on the aggregate economy of the bursting of housing bubbles.<sup>12</sup>

In hindsight, they were all wrong.<sup>13</sup> If these economists could not foresee the danger posed by the housing bubble, then it

seems unclear how any new policy empowering such economists to steer the nation away from future crises will be effective.<sup>14</sup>

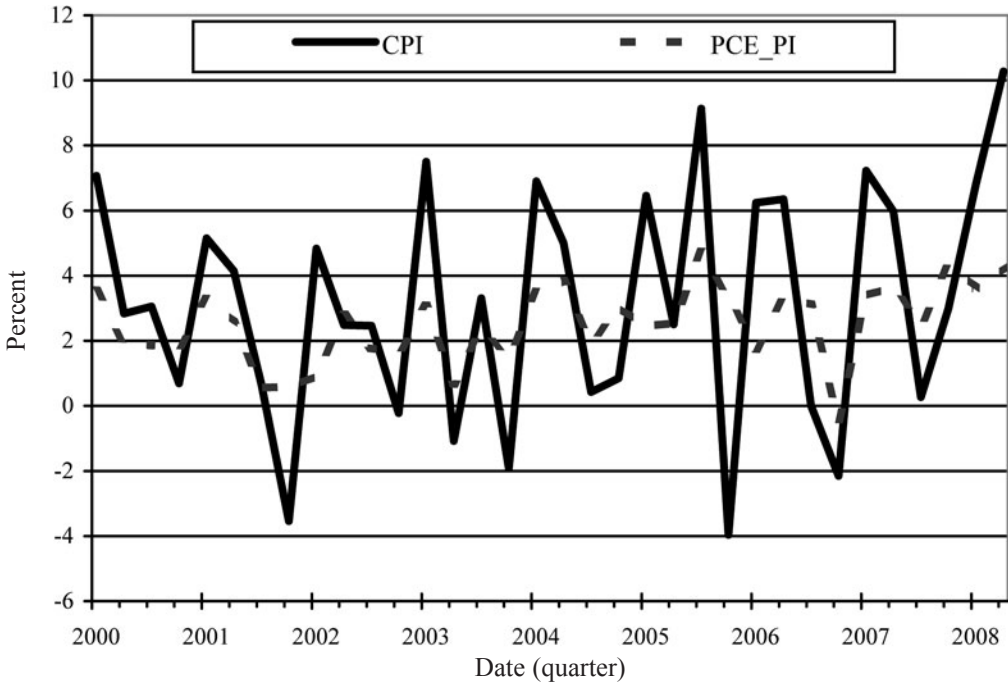
## **Asset Price Bubble Versus Deflation: Which Is More Dangerous?**

Even if these economists had clearly identified the threat of runaway housing prices, Fed officials charged with preventing asset-price bubbles may have continued to insist that no policy action to counter the bubble was warranted because so many other factors made deflation an overriding concern. During the early 21st century, the Fed had investigated the implications of a deflationary environment for Fed policymaking. Under such an environment, with rising real debt burdens and slowing economic activity, monetary policy would be rendered impotent because a low federal funds rate could not be reduced below 0 percent. That is, with price levels nearly stagnant and at risk of sliding backwards, the Fed would be unable to lower interest rates in order to spur the economy.

Conventional inflation measures were very low during this time period. Figure 1 shows quarterly growth in the Consumer Price Index and in the Personal Consumption Expenditures Price Index.<sup>15</sup> Growth in both price indices remained close to zero between 2001 and 2005, with the CPI growth occasionally wandering into negative territory.<sup>16</sup> Thus deflation, and not inflation, was of primary concern.

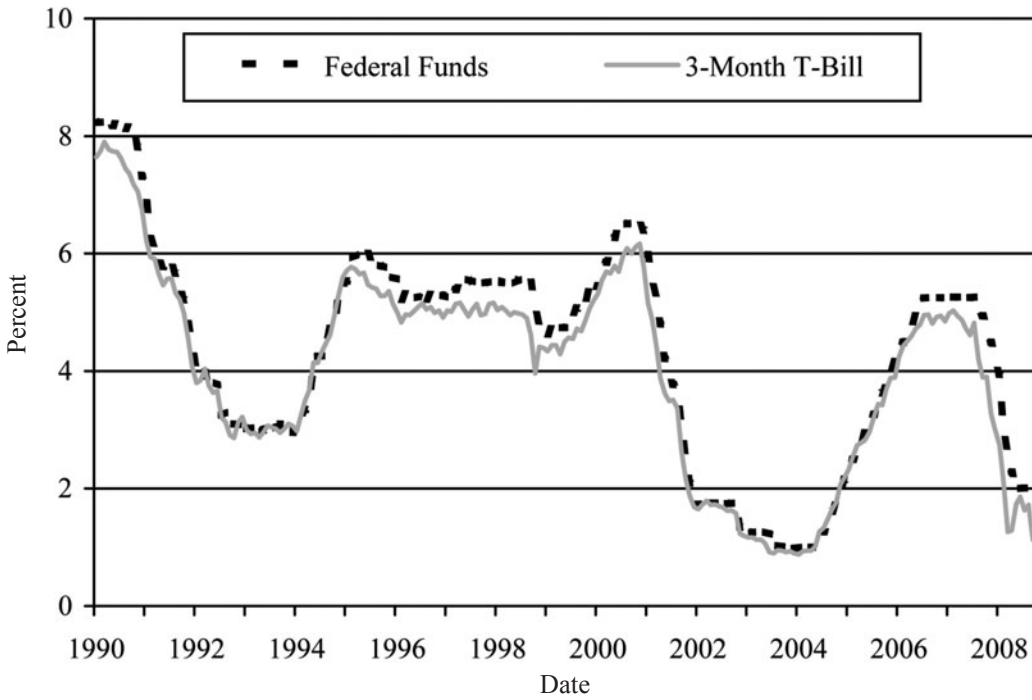
Another rationale for a low federal funds rate was low short-term market interest rates. As shown in Figure 2, the close association between short-term market rates and the federal funds rate is the result of "rational forecasts" of short-term interest rates based on available information made independently by market actors and Fed policymakers. Both forecasts are predicated on the Fed's objective of maintaining maximum economic growth under price stability. Given the extremely low inflationary environment soon after the stock-market implosion of 2000 and the eco-

**Figure 1**  
**Real CPI and PCE—Quarterly Growth at Annual Rate**



Source: Bureau of Labor Statistics.

**Figure 2**  
**Federal Funds and 3-Month T-Bill Rates**



Source: Federal Reserve Bank of St. Louis.

**The Fed would not have been credited with preventing a housing-price bubble because none would have been observed.**

conomic recession of 2001, market rates and Fed policy resulted in the low-interest-rate environment that some observers now blame for triggering the housing price bubble.

The Fed ultimately did raise rates beginning in 2004, but some would argue that it could have done so earlier and at a speed consistently faster than any associated increases in market interest rates. The Fed's post-Paul Volker reputation as an effective inflation fighter might have given it the credibility to influence market short-term interest rates to move in lockstep with the federal funds rate. But repeated attempts to move market rates in a direction inconsistent with underlying market demands for liquid reserves and financial assets would have failed—eventually. Indeed, attempts to increase market interest rates significantly during the 2003–2005 period would have increased foreign savings flows into the United States—worsening the already severe global financial imbalance.

Following such an alternative policy may have helped the Fed to avoid its current fate of being criticized for allowing the home-price bubble to grow larger. But by initiating interest-rate increases earlier, it could have directly triggered a recession by constraining aggregate spending. Then the Fed would have been blamed for the recession, but would not have been credited with preventing a housing-price bubble because none would have been observed. How can an institution that attracts so much scrutiny and is the target of intense political pressure inflict economic pain and survive if the benefits of its policies are not observable?<sup>17</sup>

## **Home Prices and Monetary Policy**

Assume that economists saw the housing bubble in real time and assume that both the technical and political tradeoffs between inflation and deflation had been resolved. Could the Fed have stopped the housing bubble through its control of short-term interest rates? Alan Greenspan says no, but

prominent economist and Fed-watcher John Taylor says yes.

The housing bubble is attributed by Greenspan to massive increases in saving relative to investment in developing countries such as China, and the oil-exporting countries of the Middle East.<sup>18</sup> As Figure 3 shows, net international capital inflows to the United States, which were near zero from 1987 through the mid 1990s, grew in the late 1990s and early 21st century.

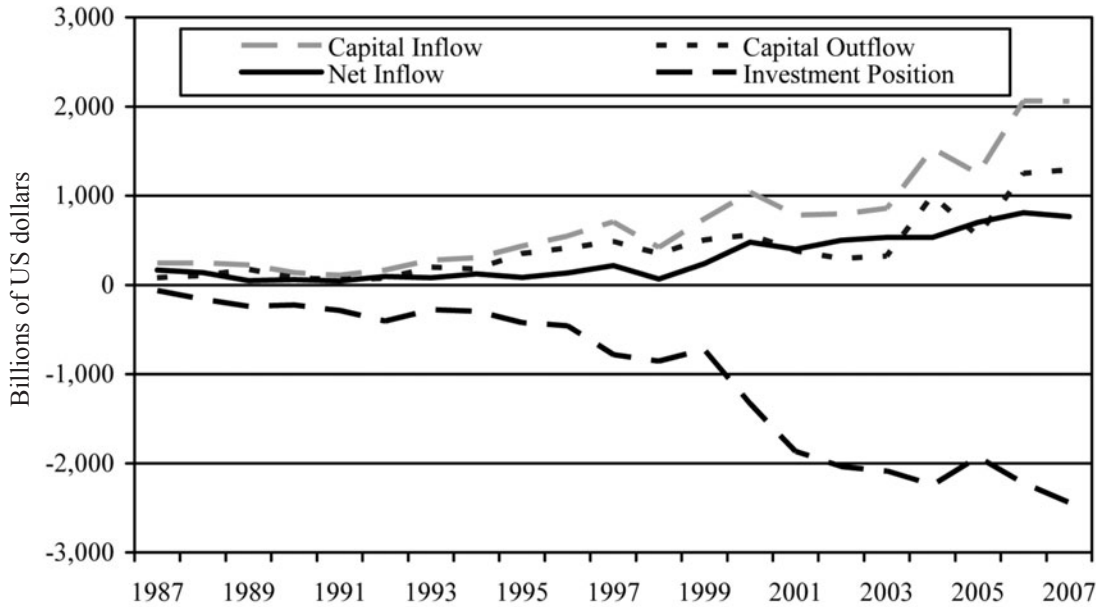
However, a few prominent economists and Fed-watchers have attributed the emergence of the housing-price bubble to poor monetary policy: the maintenance of low interest rates from 2003 through 2005. Professor John Taylor of Stanford University places the blame squarely on monetary excesses by the Fed:

The classic explanation of financial crises is that they are caused by excesses—frequently monetary excesses—which lead to a boom and an inevitable bust. This crisis was no different: a housing boom followed by a bust led to defaults, the implosion of mortgages and mortgage-related securities at financial institutions, and resulting financial turmoil. Monetary excesses were the main cause of the boom.<sup>19</sup>

Taylor suggests that had the Fed adhered closely to the eponymous Taylor rule's prescription for setting the federal funds rate, the housing bubble could have been avoided without tipping the economy into a recession. But the Taylor rule works well as a guidepost for interest-rate policies when the economic environment is stable, and that has not been the case during this decade because of massive capital inflows to the United States. Given increasing capital inflows, overleveraged financial institutions, and a potentially deflationary environment, we cannot say scientifically whether following the Taylor rule would have prevented a housing bubble without causing a significant economic slowdown.

If lax monetary policy were the chief cause

**Figure 3**  
**Net International Capital Inflows into the United States**



Source: Authors' calculations, based on data from the Bureau of Economic Analysis.

of the housing bubble, then higher rates would have been the solution. What is the evidence that higher federal funds rates during the early 21st century would have prevented the housing bubble from developing? According to Greenspan, homes are long-lasting assets and are priced based on long-term interest rates. Whatever the power of the Fed to influence short-term rates, long-term rates have not followed the short-rates since the mid 1990s, making monetary policy—to the extent it could influence the term structure of interest rates—relatively ineffective in influencing the opportunity costs of housing finance.

Gerald O'Driscoll Jr., a former vice president at the Federal Reserve Bank of Dallas, argues that the subprime and low-teaser-rate mortgages used in the boom-and-bust areas of California, Phoenix, Las Vegas, and Florida, are priced based on much shorter-term rates of one to three years because these mortgages are funded by short-term borrowing.<sup>20</sup> Thus, he suggests, Greenspan's focus on the relationship between Fed policy and long-term rates is irrelevant.

But even short-term mortgage rates were decoupled from short-term (federal funds and 3-month) interest rates. A casual look at the empirical evidence shows that Treasury short-term rates of one- to three-year terms failed to move in lockstep with changes in the federal funds rate during the early 21st century. Table 1 shows how changes in Treasury and key market interest rates correlated with changes in the federal funds rate during three periods—between 1987 and 1993, between 1993 and 2001, and after 2001. The market rates on Treasury securities are used to set the cost of funds for all kinds of loans, including mortgages, at various time horizons. Although pre-1993 correlations between changes in the federal funds rate and Treasury interest rates were quite high—much closer to one than to zero—the correlations were smaller during the two subsequent periods.

In addition, the decoupling of federal funds rates and market rates appears to be confined to housing. Correlations between changes in the federal funds rate and bank lending rates (the prime loan rate) and short-term commercial paper rates issued by finan-

**The decoupling of federal funds rates and market rates appears to be confined to housing.**

**Table 1**  
**Correlations of Changes in Market Interest Rates with Changes in the Federal Funds Rate**

	Feb. 1987–Oct. 1993	Nov. 1993–July 2001	Aug. 2001–March 2009
Treasury 1 month	n.a.	n.a.	0.64
Treasury 3 month	0.76	0.63	0.75
Treasury 6 month	0.78	0.56	0.79
Treasury 1 year	0.74	<b>0.48</b>	0.69
Treasury 2 year	0.66	0.34	<b>0.48</b>
Treasury 3 year	0.63	0.28	0.37
Treasury 5 year	0.58	0.18	0.26
Treasury 7 year	0.58	0.12	0.20
Treasury 10 year	0.55	0.08	0.12
Treasury 20 year	n.a.	0.01	0.04
Conventional mortgage rate*	<b>0.62</b>	<b>0.16</b>	<b>0.07</b>
Bank prime loan rate	0.78	0.92	0.94
1 month CP(nf)	n.a.	n.a.	0.90
2 month CP(nf)	n.a.	n.a.	0.82
3 month CP(nf)	n.a.	n.a.	0.72
1 month CP(f)	n.a.	n.a.	0.72
2 month CP(f)	n.a.	n.a.	0.70
3 month CP(f)	n.a.	n.a.	0.63

\*Contract interest rates on commitments for fixed-rate first mortgages.

Source: Authors' calculations based on data from the Federal Reserve Bank of St. Louis.

Note: CP(f) = Commercial Paper (financial); CP(nf) = Commercial Paper (nonfinancial).

cial and nonfinancial companies remained quite high during the early 21st century.<sup>21</sup>

The evidence in Table 1 of the potential dichotomous impact of monetary policy on housing finance versus other real-sector economic activity should caution those who suggest that Fed errors of omission and commission are to blame for the housing bubble and its subsequent collapse. The claims that the Fed's interest-rate policy is the key culprit, or that manipulating it with the goal of eliminating a tenuously observed housing-price bubble would have succeeded (without unintended consequences), appear to be misguided. Increases in the market short-term rates and the federal funds rate beginning in June 2004 certainly proved insufficient to prevent home price increases for another two years.<sup>22</sup>

## Why a Systemic Risk Regulator is an Oxymoron

What lesson can we draw from the phenomenon we have just witnessed—that identifying asset-price bubbles is tricky business, and even if one had been correctly identified, policymakers would have stood pat anyway? It is simply that judgments by even very seasoned and seemingly disinterested observers about whether statistical data on asset prices indicate (the possibility of imminent) bubbles, and whether “systemic” risks from asset-price reversal are high, are clouded by the environments within which they are made. Indeed, under a meta-macroeconomic framework, such professional economists' opinions might even be considered to be *integral elements* of “the economic system,” serving to

**Increases in the market short-term rates and the federal funds rate certainly proved insufficient to prevent home price increases.**



temporarily sustain a macroeconomic “equilibrium” at high rates of consumption and investment spending, employment, home prices, and stock-market values.

Notice that the earlier-cited economists who provided “evidence-based” opinions about the absence of a home-price bubble conditioned their arguments on variables that are, essentially, part of a mutually reinforcing system of a robust economy and high housing prices. For example, economists from the New York Federal Reserve, Columbia University, and Wharton School based their conclusion of “no bubble” on a comparison between the imputed annual cost of homeownership relative to its own history and “fundamentals.”<sup>23</sup> Whether home prices accelerated too much must be judged, the authors argue, with reference to changes in long-term interest rates, expected inflation, expected home-price appreciation, rental costs of similar residences, and taxes. Fundamentals are mainly proxied by the cost of rental units compared to the imputed rental on owned homes. Other economists, among those cited earlier, used such factors as estimated income and wealth elasticities of housing demand and real improvements made by homeowners to their residences—even to homes that never entered the market for sale—to determine that the “fundamentals” supported home price increases.

The problem with using such measures to assess whether housing prices are too high is that those fundamentals may themselves be the consequence of high asset prices, and they exhibit vulnerability to macroeconomic shocks and become unstable at the same time as asset prices. The point that economic fundamentals and asset prices may turn out to be jointly determined has been made by George Akerlof and Robert Shiller in their new book *Animal Spirits*.<sup>24</sup>

Most of the economists cited earlier are either government economists or those involved directly or indirectly in the real estate sector—that is, working for institutions with mandates to promote economic and housing growth. It is generally not in the interest of those institutions to promote and advertise

conclusions that would increase market uncertainty and promote economic pessimism among the public. Such opinions would weaken the economy, which is not only contrary to the Fed’s mandated objectives, but also contrary to the financial interests of real estate associations, home management companies, and mortgage brokers. Moreover, the forecasts and opinions of professional economists working for such institutions receive the most attention from the media and are accorded the most respect by the public because of their elevated status as knowledgeable “oracles” about the future course of the economy—a fact that maximizes their effectiveness in sustaining an equilibrium at a high level of macroeconomic activity.

Our recent economic troubles indicate that judgments made in real time about the contemporary economic outlook, especially those by economists working for government agencies, are unlikely to be useful in assessing exposures to “systemic” risks. An external shock to the system or an unanticipated constraint that is sufficiently strong and begins to bind—such as a hard limit on energy-production capacity in the short-term—could trigger a financial and economic crisis, and render those judgments false within a relatively short period of time.<sup>25</sup>

## Deregulation or Reregulation?

In addition to the claim that the Fed can detect and stop asset bubbles in real time through monetary policy, many also argue that “deregulation” of financial markets allowed excessive risk-taking to occur and that “responsible” regulation would prevent such “irresponsible” lending in the future.<sup>26</sup> Three claims are made: first, the passage of the 1999 Gramm-Leach-Bliley banking reform act eliminated the barriers between investment banking, commercial banking, and insurance, and permitted banks to dilute the effectiveness of capital requirements by engaging in off-balance-sheet expansion of liabilities.<sup>27</sup> Second,

**Judgments made in real time about the contemporary economic outlook are unlikely to be useful in assessing exposure to “systemic” risks.**

**During the Depression, banks with investment affiliates had no greater earnings volatility than banks without.**

Congress chose not to regulate the over-the-counter market in credit default swaps and the result was the failure, and taxpayer rescue, of AIG. Third, the Fed and other supervisory agencies chose not to restrict qualification for low-teaser-rate loans (sometimes called “liar loans”), which allowed aggressive lending practices to proliferate and allowed too much leverage into the financial system.

#### **Gramm-Leach-Bliley**

Prior to the passage of GLB, economists had concluded that the supposed virtues of separating investment from commercial banking through the New Deal-era Glass-Steagall Act followed from two incorrect theories about the origins of the Great Depression.

The first theory emphasized conflicts of interest between jointly owned investment and commercial banks. From this perspective the stock market crash of 1929 was the result of investment banks selling poor-quality stocks to an uninformed public in order to raise funds to repay the stock-issuing company’s loans to the investment bank’s affiliate commercial bank. If the theory were true, securities underwritten by investment banks that had affiliated commercial banks would default more than *ex ante*-similar securities underwritten by independent investment banks. In fact, securities underwritten by banks with affiliates were no more likely to default than similar securities issued by independent investment banks during 1924–1940.<sup>28</sup>

A second (and related) theory was that investment banks were inherently riskier, and thus, combining them with commercial banks would make the banking system more risky. But during the Depression, banks with investment affiliates had no greater earnings volatility than banks without and actually failed less frequently than unaffiliated banks.<sup>29</sup> And in the modern era, GLB was not that radical a departure from Glass-Steagall because GLB basically ratified what already had occurred through regulatory experimentation in the United States and regulatory regimes in other developed economies.<sup>30</sup>

In contrast to both positive and negative

predictions made before the passage of GLB, and the claims made in 2008 by critics after the financial crisis started, an evaluation in 2005 concluded that very few financial holding companies had taken advantage of GLB to form “universal” banks.<sup>31</sup> And the financial holding companies formed after GLB were not more profitable than traditional bank holding companies. So the current conventional wisdom that GLB changed the financial world dramatically and for the worse is, at best, a very selective reading of history.

GLB did affect investment banking regulation in one important way. Prior to GLB, investment banks were regulated as broker-dealers by the Securities and Exchange Commission and subject to its net capital rules, which required 6.67 percent capital.<sup>32</sup> After GLB, investment banks initially became part of unregulated financial holding companies. European countries then asked to subject European branches of U.S. investment banks to European (Basel II) regulation.<sup>33</sup> European regulation was preempted only when the SEC agreed to implement Basel II risk-related regulation for U.S. investment banks.<sup>34</sup> This had the effect of changing fixed capital requirements to requirements that varied by investment.

Under Basel I’s bank capital regulations, which had governed the world since 1988, mortgages and AAA-rated asset-backed securities were treated as much safer investments than corporate debt. Commercial loans had a risk weight of 100 percent meaning that 8 percent of the loan had to be backed by capital. Residential mortgages had a risk weight of 50 percent, and thus only 4 percent ( $0.5 \times 8\%$ ) had to be backed by capital; and AAA-rated asset-backed securities had a risk weighting of 20 percent, so only 1.6 percent ( $0.2 \times 8\%$ ) had to be set aside.<sup>35</sup> Thus, the regulatory system itself provided extremely strong incentives for the financial community to shift to mortgages and from mortgages to highly rated securities backed by pools of mortgages.

Basel II’s innovation was to allow the use of flexible, rather than fixed, risk weights for dif-

ferent classes of assets, which reduced the capital requirement for mortgages to 2.8 percent. As Charles Calomiris of Columbia University quipped, Basel II was not “a libertarian plot cooked up at the Cato Institute. . . . It was the product of many years of effort by the world’s major central banks, intended to avoid crises such as the savings and loan disaster of the 1980s. . . . [T]he SEC could be forgiven for thinking that if it was good enough for the world’s central bankers, it was good enough for the Commission.”<sup>36</sup>

So to summarize, although GLB eliminated the Glass-Steagall law, it had very little effect on the structure of U.S. financial institutions. Banking innovations, in providing financial products and services, had already considerably eroded that law’s constraints. But GLB had the accidental effect of lowering the capital requirements for investment banks—an outcome not of reducing or eliminating regulations, but of subjecting U.S. investment banks to the regulatory rules of Basel I and II that had previously applied only to commercial banks. Within that framework, mortgages and highly rated mortgage-backed securities were considered safer than normal investment bank activities. All participants in the world of banking regulation—investment banks, regulators, and other policymakers—affirmed that consensus and affirmed its implications for investment banks’ capital requirements. This is another component of the mutually reinforcing high-growth meta-macroeconomic equilibrium that we referred to earlier.

### **Commodity Futures Trading Commission Regulation**

The second claim about deregulation is that Congress chose not to regulate the over-the-counter (OTC) market in credit default swaps—voluntary contracts in which investors agreed to be liable for other investors’ unpaid debts. According to conventional wisdom, CDSs—especially those held by insurance giant AIG—prompted irresponsible home mortgage lending.<sup>37</sup>

In journalists’ account of this story, in the spring of 1998, Brooksley Born, the head of

the Commodity Futures Trading Commission, wanted to consider regulating OTC CDSs, but Federal Reserve chairman Alan Greenspan, Treasury secretary Robert Rubin, and SEC chair Arthur Levitt Jr. opposed the effort.

CDSs are insurance contracts against failure to repay debts—in this case, mortgages. The AIG financial products business model consisted of using AIG’s AAA bond rating, held by only a dozen or so U.S. companies, to borrow at low rates and write insurance contracts against mortgage defaults.<sup>38</sup> Instead of investing the proceeds from such contracts in long-term bonds to accumulate reserves for eventual payout, AIG assumed defaults would be rare and signaled such beliefs by “binding itself to the mast,” that is, subjecting the CDS contracts to collateral calls if its AAA rating were ever downgraded.<sup>39</sup>

The important questions are whether the existence of AIG CDSs induced counterparties to invest more in mortgage-backed securities (thereby injecting more funds into the housing sector and maintaining mortgage rates at very low levels) than they would have in their absence. Alternatively, would mortgage funding be less abundant under a regulated CDS market, and would such regulations have resulted in larger capital requirements for AIG?

Some analysts claim that CDSs do not add to total financial risk in the economy, they simply transfer risk from the original loan provider, such as a bank, to insurance firms, such as AIG.<sup>40</sup> However, the existence of CDSs for redistributing risks and returns probably triggers additional debt creation on the part of risk-averse lenders.

So, unregulated CDSs increased the quantity of mortgage debt. Would regulated CDSs have priced risk correctly and induced an optimal level of additional mortgage debt?

Although it is difficult to do so now, we ask the reader to recall the environment in which housing prices and beliefs about housing price appreciation and risk were mutually supportive and positive. In such an environment, regulated CDSs might have allowed the same, *possibly even looser*, capital requirements on AIG.

**Regulated CDSs might have allowed the same, and possibly even looser, capital requirements on AIG.**

**The imposition of a clearinghouse on nonstandard CDSs would likely have increased, rather than decreased, moral hazard and risk taking.**

Here, too, Basel II rules provide the clue: capital requirements for CDSs that insured mortgage-backed securities would have been low because the housing investments were not considered risky. In fact, during 2000–2007, investing in such instruments was considered brilliantly conceived normal arbitrage (taking advantage of mispriced risk) rather than what turned out to be enormously underpriced risk.

A related issue is the claim that by choosing not to extend CFTC regulation over CDSs, an opportunity was missed to reduce risks by adopting a clearinghouse for such contracts. In futures markets in which standardized contracts are traded, buyer and seller trade with a clearinghouse, which has its own capital to insure against default.

Could the existence of CFTC jurisdiction and an associated clearinghouse have prevented the AIG calamity? In an article last year in *Regulation*, Craig Pirrong asked what would have happened in September 2008 if CDS contracts had to be cleared.<sup>41</sup> He concludes that the existence of a clearinghouse affects only the distribution rather than the total amount of losses from default. If a large number of CDSs were to fail, the clearinghouse would have to cover the losses with its own capital and perhaps even have to draw on additional capital from its members. Thus, a clearinghouse would produce more efficient risk pricing and reduce aggregate risks only if it priced risk more efficiently than current individual counterparty transactions on the OTC market.

However, more efficient risk pricing under a clearinghouse arrangement is unlikely. Clearinghouses charge only for the risks created by betting that prices of commodities will go up or down (so-called “position risk”) through collateral standards, the amount that an investor must put up in cash, which are based on the historical variance of prices for a particular commodity. But adverse price changes can exceed collateral and thus require the use of capital to meet margin calls. Unless capital is invested in treasuries, it is risky. That is, when sold to meet margin calls, capital’s value may be lower than its book value. Clearinghouses

do not charge for the riskiness of capital, the so-called “balance sheet risk.” And if clearinghouses attempted to price such risk, they would be at a severe disadvantage relative to the current bilateral deals struck by the traders themselves. Pirrong concludes that the absence of a CDS clearinghouse reflects “an efficient market outcome, and that a hasty imposition of a clearinghouse could actually be inefficient.”

In addition, a clearinghouse would do nothing to price systemic risk correctly. The effect of the failure of a CDS market participant on the stability of financial markets as a whole would not be taken into account by a clearinghouse. So a clearinghouse is not capable of pricing private default risk correctly for complex products traded by information-intensive intermediaries, and clearinghouses do not charge for systemic risk, which is the basis for the AIG intervention. Clearinghouses are a solution for a limited class of problems, and they usually arise naturally when market participants believe they would produce benefits.

So while the journalistic accounts of how Brooksley Born was bullied by Robert Rubin and Alan Greenspan into rejecting CDS regulation certainly provide a gripping narrative, CFTC regulation of capital requirements for them would have been unlikely to differ from the Basel I and Basel II risk-related capital requirements that perceive little risk of sliding property values and widespread mortgage defaults. And the imposition of a clearinghouse on nonstandard CDSs would likely have increased, rather than decreased, moral hazard and risk taking.

### **Low Teaser Rates**

A third claim about the role of regulation is that the Fed should have restrained subprime borrowers from taking out hybrid mortgages that initially offered low introductory rates but then reset to higher rates that the borrowers could not afford.<sup>42</sup> However, as of July 2007, 57 percent of the 2-year/28-year and 83 percent of the 3-year/27-year hybrid subprime mortgages that were in foreclosure had never undergone any interest rate resets.<sup>43</sup> And of all the sub-

prime loans originated between January 1999 and July 2007, 36 percent of the hybrid loans were in foreclosure—not much different from 31 percent of the fixed rate loans that were also in foreclosure as of September 2007.<sup>44</sup> Mayer, Pence, and Sherlund also “find little evidence that the rise in delinquencies through mid-2008 was linked to these [novel mortgage] products.”<sup>45</sup> The diminished market value of the home itself, rather than the characteristics of the loan contract, appears to be more relevant as a foreclosure trigger.

### Capital Standards

Falling home prices made the mortgages supporting them untenable and increased defaults because with their equity (and more) now lost in the bubble collapse, many homeowners are simply electing to walk away. This has led some observers to conclude that leverage is the problem. They argue that higher capital standards for banks and larger down payments for loans are essential components of the solution, as those changes would protect banks and lessen homeowners’ incentive to default on their mortgages.

But this raises the question about how large down payments and capital standards should be. There is no scientific answer to the question. In practice, they are usually set above the levels that failed to prevent the last financial crisis. In the 1840s, before deposit insurance, banks had a capital buffer in excess of 50 percent of assets in order to induce willing depositors.<sup>46</sup> Prior to the savings and loan debacle in the 1980s, commercial banks had a capital ratio of 7.0 percent and savings and loan institutions had a minimum capital ratio of 5.0 percent. The Basel I standards, adopted in 1988, set the ratio at 8.0 percent, but varied the ratio for various classes of assets—requiring only 4 percent for mortgages and 1.6 percent for AAA-rated asset-backed securities. Basel II, however, reduced the capital set aside for mortgages to 2.8 percent, kept the AAA-rated asset-backed security at 1.6 percent, and reset that for AAA-rated tranches of a collateralized debt obligation funded by mortgages to 0.56 percent.<sup>47</sup>

The Swiss have a reputation for extremely conservative banking and high bank capital standards—requiring as much as 20 percent more capital than specified under Basel II. And Credit Suisse and UBS, the two largest Swiss banks, are required to have a nonpublic amount of additional capital.<sup>48</sup> But even such high capital requirements proved insufficient, and the Swiss government was forced to inject 6 billion Swiss francs into UBS in exchange for a 9-percent ownership stake, and also set up a large fund to offload troubled mortgage assets from the UBS balance sheet.<sup>49</sup>

The Swiss experience suggests that ever-increasing capital standards may not be the answer. In fact, the market perceives bank equity to be part of the problem because it keeps bank managers on too loose a leash—with more investor money in the vault, banks would be more likely to lend to questionable borrowers. Naively requiring more equity capital probably increases rather than decreases risk taking.

Maintaining a highly conservative capital standard has been proposed by some who advocate what is known as “limited-purpose banking.” Banks would be required to hold 100 percent capital against loans, and a functional division between traditional and investment banking would be strictly maintained.<sup>50</sup> Banks would be protected with insurance for deposits and regulatory constraints on activities. In contrast, investment banking would be free to take more risks, but shareholders would bear all losses.

What is the problem with this world? First, while we have not really tried narrow banking, we certainly did have a costly regulated capital standard banking system 40 years ago. Because of its costs, investors and corporations gradually avoided banks and interacted directly through commercial paper and securitization markets.<sup>51</sup> Before the collapse of securitization in the fall of 2008, banks accounted for only about one-third of total lending, while securitization accounted for about two-thirds.<sup>52</sup> Thus, the banking crisis really is more appropriately called a “securitization crisis” or, as Gorton describes it, a collapse of the shadow banking system.<sup>53</sup>

**The diminished market value of the home itself, rather than the characteristics of the loan contract, appears to be more relevant as a foreclosure trigger.**

**Any commitment to separate risky investment from regulated banking is unlikely to be credible and time-consistent.**

Second, for narrow banking to be successful, all investment outside of the checking account payments system would have to be at risk without the possibility of governmental assistance. But recent events show that government's commitment not to intervene in the event of financial distress occurring outside the explicit FDIC-insured regulated banking world is not credible. The assistance provided to Fannie Mae, Freddie Mac, and AIG; the conversion of all investment banks to regulated banks; and the provision of deposit insurance to money market funds would suggest that any commitment to separate risky investment from regulated banking is unlikely to be credible and time-consistent.

A second and more intriguing capital-standard proposal is to allow for the use of financial catastrophe bonds: debt instruments issued by financial institutions as part of their capital that would pay investors interest during normal times and result in total loss of principal, and thus, a large infusion of capital into financial firms during financial crises.<sup>54</sup> Unlike higher fixed capital standards, which force financial institutions to hold additional cash in a cookie jar for decades for use in those rare moments of meltdown, and which induce greater risk taking by managers, catastrophe bonds pay off only during instances of systemic risk—when the financial institutions really need capital—and cost much less in premiums during normal times.

How would the catastrophe-bond resources be invested to ensure that they could be converted into cash during a financial crisis? To ensure safety of principal and liquidity, U.S. treasuries seem to be a logical choice. The good news is that such insurance schemes would work in the sense of creating stability among financial firms. The bad news is that mandatory investments in treasuries will result in increased consumption on the part of government rather than true investment—much as Social Security trust-fund surpluses have been dissipated through additional government consumption. Thus, future taxpayers, rather than private investors, would bear the financial

cost of servicing the bonds and amortizing them to generate funds for bank bailouts when a crisis strikes.<sup>55</sup> The support for catastrophe bonds expressed by some economists overlooks the possibility that ex-post bailouts and apparent “prefunding” through catastrophe bonds may be equivalent.<sup>56</sup>

## Conclusion

How should we design our financial and regulatory institutions? The lesson from the 1970s was that rampant inflation and unchecked inflation expectations would eventually create obstacles to proper resource allocation and growth. So we established the Fed's mandate to promote maximum growth while delivering price stability. The current episode suggests that the Fed's current policy goals and instruments are not sufficient to prevent “inflationary” asset prices and price expectations.

The knee-jerk response by some observers has been to blame the Fed's conduct of monetary policy. Some observers suggest that the Fed should regulate financial companies more tightly, others that it should broaden the definition of price stability to include asset prices, and yet others that the Fed's objectives should be broadened to include prevention of asset-price bubbles. Some observers, especially European policymakers, have called for tighter regulation of financial institutions under a new global financial architecture. And the immediate response of governments all over the world has been to attempt to salvage the existing financial institutions, instruments, and arrangements by injecting massive taxpayer funds into the financial companies that are skirting economic collapse.

When will this process end and where will it lead? Recent government interventions have now almost certainly created expectations of similar future bailouts during the next financial crisis. That means banking institutions will feel more at ease in expending considerable efforts at skirting whatever new regulations are created to prevent a similar financial

crisis from recurring. Thus, the cat-and-mouse game of regulatory arbitrage in search of profits may intensify, rather than disappear, as a result of adopting stricter financial regulations. But, for a time, stronger capital and risk regulations may stifle financial intermediation and slow the pace of recovery from the current recession.

Some analysts are proposing the adoption of smart regulations that are sequenced and modulated according to movements in macroeconomic variables such as the capital standards that vary with the business cycle. One could call such regulatory measures “financial automatic stabilizers.” However, as recent experience with fiscal stimulus packages shows, political pressures prevent politicians from leaving such systems well enough alone. Any whiff of financial-sector problems will incite Congress and Treasury bureaucrats to tinker with the rules. Which institutions and officials are likely to be sufficiently prescient to correctly calibrate such regulations each time the financial sector hiccups? And would politicians be able to resist calls for regulatory relief when financial sector lobbyists flood their offices as profit opportunities surge? Even more likely, any new regulatory attempt to globally control profit-driven risk-taking will spur new attempts to circumvent regulations.

The key lesson from the current financial crisis and recession is that a government-imposed financial architecture is unlikely to persist for any significant length of time. Global market developments, and the need to channel resources toward opportunities perceived to be the least risky and most profitable, will continue to modify institutional financial arrangements. Imposing onerous financial regulations will only impede the reconstitution of financial institutions, delay the recovery, and dampen the pace of long-term economic growth.

## Notes

We wish to thank James Dorn, Angela Erickson, Thomas Firey, Chris Preble, John Samples, and Jerry Taylor for their comments.

1. We do not discuss the role of Fannie Mae and Freddie Mac and the regulatory changes imposed by the Department of Housing and Urban Development during the Clinton administration. There is considerable controversy about whether Fannie and Freddie followed or led the market in creating new financial securities for lending to subprime mortgage borrowers. See Charles Duhigg, “Pressured to Take More Risk, Fannie Reached Tipping Point,” *New York Times*, October 5, 2008, p. A1. Also see James Hamilton at [http://www.econbrowser.com/archives/2008/10/cra\\_fannie\\_and.html](http://www.econbrowser.com/archives/2008/10/cra_fannie_and.html).

2. Hybrid loans have fixed rates for an initial period and are then indexed (adjustable) to market interest rates for the remainder of the mortgage contract. Adjustable loans are indexed to market rates from the beginning of the mortgage contract.

3. Tamar Frankel, “Regulating the Financial Markets by Examination,” Boston University School of Law, Working Paper, February 2009, [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1339913](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1339913); Ben Steil, “Lessons of the Financial Crisis,” Council on Foreign Relations, March 2009, [http://www.cfr.org/content/publications/attachments/Financial\\_Regulation\\_CSR45.pdf](http://www.cfr.org/content/publications/attachments/Financial_Regulation_CSR45.pdf).

4. Suzanne Stewart and Ike Brannon, “A Collapsing Housing Bubble?” *Regulation* 29, no. 1 (Spring 2006): 15–16.

5. Robert Van Order and Rose Neng Lai, “A Regime Shift Model of the Recent Housing Bubble in the United States,” University of Michigan, Ross School of Business, Working Paper (November 2006): 4–5, [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1004803](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1004803).

6. Jonathan McCarthy and Richard W. Peach, “Are Home Prices the Next ‘Bubble?’” *Economic Policy Review* 10, no. 3 (December 2004): 1.

7. John V. Duca, “How Vulnerable Are Housing Prices?” *Southwest Economy* (March/April 2004): 1, 11.

8. John V. Duca, “Making Sense of Elevated Housing Prices,” *Southwest Economy* (September/October 2005): 9.

9. Alan Greenspan, “Economic Outlook” (testimony before the Joint Economic Committee, U.S. Congress, June 9, 2005), <http://www.federalreserve.gov/boarddocs/testimony/2005/200506092/default.htm>.

10. Austan Goolsbee, “‘Irresponsible’ Mortgages Have Opened Doors to Many of the Excluded,” *New York Times*, March 29, 2007, p. C3.

11. David Leonhardt, "Be Warned, Mr. Bubble is Worried Again," *New York Times*, August 21, 2005, Sec. 3, p. 1.
12. Karl E. Case and Robert J. Shiller, "Is There a Bubble in the Housing Market?" *Brookings Papers on Economic Activity* 2 (2003): 342.
13. Some economists still dispute the use of the term "bubble" to describe housing prices in the early 21st century. James Kahn argues that housing prices do reflect fundamentals. Housing prices went up after 1995 and down after 2007 because of changes in multifactor productivity growth, which he argues is a "fundamental." James A. Kahn, "Productivity Swings and Housing Prices," *Federal Reserve Bank of New York Current Issues* (July 2009).
14. While prominent economists did not see the bubble or its demise, did the market see it coming? Allen Ferrell argues that the market did not see the housing downturn as a possibility until the fourth quarter of 2007. Allen Ferrell and Atanu Saha, "Securities Litigation and the Housing Market Downturn," *Journal of Corporation Law* (forthcoming), [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1400998](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1400998).
15. The Personal Consumption Expenditures Price Index (PCE\_PI) uses variable rather than fixed weights to account for adjustments made by consumers in response to changes in relative prices—which make it less variable than the Consumer Price Index (CPI).
16. The Federal Open Market Committee favors the broader PCE\_PI measure, which grew by less than 1 percent per year between early 2001 and early 2007. These data are taken from the Bureau of Economic Analysis' website: <http://www.bea.gov/national/nipaweb/TableView.asp?SelectedTable=64&Freq=Qtr&FirstYear=2006&LastYear=2008>.
17. Peter Wallison, "Bear Facts: The Flawed Case for Tighter Regulation of Securities Firms," AEI Financial Services Outlook, April 2008, [http://www.aei.org/docLib/20080411\\_22974FSOApril\\_g.pdf](http://www.aei.org/docLib/20080411_22974FSOApril_g.pdf).
18. Alan Greenspan, "The Fed Didn't Cause the Housing Bubble," *Wall Street Journal*, March 11, 2009, p. A15.
19. John B. Taylor, "How Government Created the Financial Crisis," *Wall Street Journal*, February 9, 2009, p. A19. John B. Taylor, *Getting Off Track: How Government Actions and Interventions Caused, Prolonged, and Worsened the Financial Crisis* (Stanford, CA: Hoover Institution Press, 2009). Taylor does not blame the Fed alone. He also discusses the government's prodding of Fannie Mae and Freddie Mac—government-sponsored home-mortgage finance companies—to expand their balance sheets to make loans available to low-income households living in poorer neighborhoods.
20. Gerald P. O'Driscoll Jr., "What Savings Glut?" *Wall Street Journal*, March 27, 2009, p. A13. According to Gary Gorton, once the broad expectation of continuing home-price appreciation was firmly in place, financial innovations in the mortgage market were designed to exploit and extract those appreciations via loan contracts that compelled financial firm borrowers, who would then lend to homebuyers, to refinance their contracts after intervals as short as 18 months. Gary B. Gorton, "The Panic of 2007," *Federal Reserve Bank of Kansas City Economic Policy Symposium* 2008, p. 155.
21. The correlations are very similar when the time period is restricted to 2003–2005.
22. We acknowledge that some may view the correlations shown in Table 1 as superficial evidence about the potential effects of federal funds rate changes (monetary policy) on other market rates. A more complicated, and possibly more correct, approach would be to first isolate the exogenous component of federal funds rate changes and correlate them with monetary-policy-induced components of changes in market interest rates—residual changes after removing the effect of other economic variables and shocks. But the simple correlations shown in Table 1 appear to be better than the almost nonexistent empirical evidence on which the issue of whether monetary policy was too lax during the early 21st century is being publicly debated.
23. Charles Himmelberg, Christopher Mayer, and Todd Sinai, "Assessing High House Prices: Bubbles, Fundamentals, and Misperceptions," *Journal of Economic Perspectives* 19, no. 4 (Fall 2005): 67–92.
24. George A. Akerlof and Robert J. Shiller, *Animal Spirits* (Princeton: Princeton University Press, 2009).
25. Jagadeesh Gokhale, "Financial Crisis and Public Policy," Cato Institute Policy Analysis no. 634, March 23, 2009. James Hamilton, "Causes and Consequences of the Oil Shock of 2007–2008," *Brookings Papers on Economic Activity* (2009): 215–261.
26. Eric Lipton and Stephen Labaton, "Deregulator Looks Back, Unswayed," *New York Times*, November 17, 2008, p. A1. Binyamin Appelbaum and Ellen Nakashima, "Banking Regulator Played Advocate over Enforcer," *Washington Post*, November 23, 2008, p. A1.



27. Charles W. Calomiris, "The Subprime Turmoil: What's Old, What's New, and What's Next," *American Enterprise Institute Paper*, October 2008, p. 33, <http://www.aei.org/paper/28720>.
28. Randall Kroszner and Raghuram G. Rajan, "Is the Glass-Steagall Act Justified? A Study of the U.S. Experience with Universal Banking Before 1933," *American Economic Review* 84, no. 4, (September 1994): 810–32.
29. Eugene White, "Before the Glass-Steagall Act: An Analysis of the Investment Banking Activities of National Banks," *Explorations in Economic History* 23, no. 1 (January 1986): 33–55.
30. James R. Barth, Dan Brumbaugh Jr., and James Wilcox, "The Repeal of Glass-Steagall and the Advent of Broad Banking," *Journal of Economic Perspectives* 14, no. 2 (Spring 2000): 191–204.
31. Ellen Harshman, Fred C. Yeager, and Timothy J. Yeager, "The Door Is Open, but Banks Are Slow to Enter Insurance and Investment Arenas," *Regional Economist*, October 2005, pp. 5–9.
32. Office of Inspector General, Securities and Exchange Commission, "SEC's Oversight of Bear Stearns and Related Entities: The Consolidated Supervised Entity Program," September 25, 2008, p. ix, <http://www.sec-oig.gov/Reports/Audits/Inspections/2008/446-a.pdf>.
33. Stephen Labaton, "S.E.C. Concedes Oversight Flaws Fueled Collapse," *New York Times*, September 27, 2008, p. A1.
34. Charles Calomiris, "Another 'Deregulation' Myth," American Enterprise Institute, October 2008, [http://www.aei.org/publications/filter.all,pubID.28851/pub\\_detail.asp](http://www.aei.org/publications/filter.all,pubID.28851/pub_detail.asp). Office of Inspector General, Securities and Exchange Commission, "SEC's Oversight of Bear Stearns and Regulated Entities."
35. Peter Wallison, "Cause and Effect: Government Policies and the Financial Crisis," *Financial Services Outlook*, American Enterprise Institute, November 2008, p. 8. Under Basel I, adequate capital was considered to be 8% of assets.
36. Charles Calomiris, "Another 'Deregulation' Myth," p. 1
37. Peter Goodman, "Taking Hard New Look at a Greenspan Legacy," *New York Times*, October 9, 2008, p. A1. Anthony Faiola, Ellen Nakashima, and Jill Drew, "What Went Wrong," *Washington Post*, October 15, 2008, p. A1.
38. Joe Nocera, "Propping Up a House of Cards," *New York Times*, February 28, 2009, p. B1.
39. Eric Dash and Andrew Ross Sorkin, "Throwing a Lifeline to a Troubled Giant," *New York Times*, September 18, 2008, p. C1.
40. Peter Wallison, "Everything You Wanted to Know About Credit Default Swaps—but Were Never Told," *Financial Services Outlook*, American Enterprise Institute, December 2008, p. 4.
41. Craig Pirrong, "The Clearinghouse Cure," *Regulation* 31, no. 4 (Winter 2008–2009): 44–51.
42. Remember that Austan Goolsbee reminded us that well-working capital markets should provide capital to those who have a low income now, but higher future income prospects, who invest in assets with good appreciation possibilities.
43. James R. Barth, et al., "Mortgage Market Turmoil: The Role of Interest-Rate Resets," Milken Institute, December 2007, p. 2, <http://www.milkeninstitute.org/pdf/Mortgage-Market-Turmoil.pdf>.
44. *Ibid.*, p. 4, Figure 4.
45. Christopher Mayer, Karen Pence, and Shane M. Sherlund, "The Rise in Mortgage Defaults," *Journal of Economic Perspectives* 23, no. 1 (Winter 2009): 28.
46. Alan Greenspan, "Remarks on 'Systemic Risk,'" American Enterprise Institute, June 3, 2009, <http://www.aei.org/speech/100052>.
47. Susan Wachter, Andrey Pavlov, and Zoltan Pozsar, "Subprime Lending and Real Estate Markets," August 2008, p. 8, [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1319757](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1319757).
48. Nicholas Kulish, "Switzerland Rejects Intervention, Expecting Its Banks to Grow Stronger," *New York Times*, October 16, 2008, p. B11.
49. Nelson D. Schwartz, "UBS Given an Infusion of Capital," *New York Times*, October 17, 2008, p. B1.
50. See Christophe Chamley and Laurence J. Kotlikoff, "Limited Purpose Banking—Putting an End to Financial Crises," *Financial Times*, The Economists' Forum, January 27, 2009. See also Oz Shy and Rune Stenbacka, "Rethinking the Roles of Banks: A Call for Narrow Banking," *The Economists' Voice* 5, no. 2 (February 2008); and Amar Bhidé, "In Praise of More Primitive Finance," *The Economists' Voice* 6, no. 3 (February, 2009).
51. Gary Gorton, "Slapped in the Face by the Invisible Hand: Banking and the Panic of 2007" (paper presented at the Federal Reserve Bank of Atlanta's 2009 Financial Markets Conference, May 2009), [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1401882](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1401882).

52. John V. Duca, Danielle DiMartino, and Jessica J. Renier, "Fed Confronts Financial Crisis by Expanding Its Role as Lender of Last Resort," *Federal Reserve Bank of Dallas Economic Letter* 4, no. 2 (February/March 2009): 5.

53. In fact, bank lending actually increased in December 2008 relative to December 2007, but securitized lending has fallen drastically. See Robert Samuelson, "Beyond Wall-Street Bashing," *Washington Post*, February 9, 2009, p. A17.

54. Amil K. Kashyap, Raghuram G. Rajan, and Jeremy C. Stein, "Rethinking Capital Regulation," *Federal Reserve Bank of Kansas City Economic Policy Symposium 2008*, p. 435, <http://www.kc.frb.org/home/subwebnav.cfm?level=3&theID=10976&subWeb=10660>.

55. The evidence comes from the proceeds from

the 1983 Social Security tax increase. The revenues from the tax increase were invested by the Social Security Trust Fund in treasuries and the result was increased consumption rather than investment. Kent Smetters, "Is the Social Security Trust Fund Worth Anything?" National Bureau of Economic Research, Working Paper 9845, July 2003.

56. Bailouts and catastrophe bonds are equivalent only in the sense that taxpayers pay the bill. They are not equivalent in terms of moral hazard. Government bailouts dull the incentives for private insurance arrangements such as catastrophe bonds. If the government can precommit not to bail out those institutions that fail to utilize catastrophe bonds in their capital structure, and a robust catastrophe bond market develops, then such bonds could provide superior protection against systemic risk.

### STUDIES IN THE POLICY ANALYSIS SERIES

- 647. **Why Sustainability Standards for Biofuel Production Make Little Economic Sense** by Harry de Gorter and David R. Just (October 7, 2009)
- 646. **How Urban Planners Caused the Housing Bubble** by Randal O'Toole (October 1, 2009)
- 645. **Vallejo Con Dios: Why Public Sector Unionism Is a Bad Deal for Taxpayers and Representative Government** by Don Bellante, David Denholm, and Ivan Osorio (September 28, 2009)
- 644. **Getting What You Paid For—Paying For What You Get Proposals for the Next Transportation Reauthorization** by Randal O'Toole (September 15, 2009)
- 643. **Halfway to Where? Answering the Key Questions of Health Care Reform** by Michael Tanner (September 9, 2009)
- 642. **Fannie Med? Why a "Public Option" Is Hazardous to Your Health** by Michael F. Cannon (July 27, 2009)
- 641. **The Poverty of Preschool Promises: Saving Children and Money with the Early Education Tax Credit** by Adam B. Schaeffer (August 3, 2009)
- 640. **Thinking Clearly about Economic Inequality** by Will Wilkinson (July 14, 2009)
- 639. **Broadcast Localism and the Lessons of the Fairness Doctrine** by John Samples (May 27, 2009)

638. **Obamacare to Come: Seven Bad Ideas for Health Care Reform**  
by Michael Tanner (May 21, 2009)
637. **Bright Lines and Bailouts: To Bail or Not To Bail, That Is the Question**  
by Vern McKinley and Gary Gegenheimer (April 21, 2009)
636. **Pakistan and the Future of U.S. Policy** by Malou Innocent (April 13, 2009)
635. **NATO at 60: A Hollow Alliance** by Ted Galen Carpenter (March 30, 2009)
634. **Financial Crisis and Public Policy** by Jagadeesh Gokhale (March 23, 2009)
633. **Health-Status Insurance: How Markets Can Provide Health Security**  
by John H. Cochrane (February 18, 2009)
632. **A Better Way to Generate and Use Comparative-Effectiveness Research**  
by Michael F. Cannon (February 6, 2009)
631. **Troubled Neighbor: Mexico's Drug Violence Poses a Threat to the United States** by Ted Galen Carpenter (February 2, 2009)
630. **A Matter of Trust: Why Congress Should Turn Federal Lands into Fiduciary Trusts** by Randal O'Toole (January 15, 2009)
629. **Unbearable Burden? Living and Paying Student Loans as a First-Year Teacher** by Neal McCluskey (December 15, 2008)
628. **The Case against Government Intervention in Energy Markets: Revisited Once Again** by Richard L. Gordon (December 1, 2008)
627. **A Federal Renewable Electricity Requirement: What's Not to Like?**  
by Robert J. Michaels (November 13, 2008)
626. **The Durable Internet: Preserving Network Neutrality without Regulation** by Timothy B. Lee (November 12, 2008)
625. **High-Speed Rail: The Wrong Road for America** by Randal O'Toole (October 31, 2008)
624. **Fiscal Policy Report Card on America's Governors: 2008** by Chris Edwards (October 20, 2008)
623. **Two Kinds of Change: Comparing the Candidates on Foreign Policy**  
by Justin Logan (October 14, 2008)

622. **A Critique of the National Popular Vote Plan for Electing the President** by John Samples (October 13, 2008)
621. **Medical Licensing: An Obstacle to Affordable, Quality Care** by Shirley Svorny (September 17, 2008)
620. **Markets vs. Monopolies in Education: A Global Review of the Evidence** by Andrew J. Coulson (September 10, 2008)
619. **Executive Pay: Regulation vs. Market Competition** by Ira T. Kay and Steven Van Putten (September 10, 2008)
618. **The Fiscal Impact of a Large-Scale Education Tax Credit Program** by Andrew J. Coulson with a Technical Appendix by Anca M. Cotet (July 1, 2008)
617. **Roadmap to Gridlock: The Failure of Long-Range Metropolitan Transportation Planning** by Randal O'Toole (May 27, 2008)
616. **Dismal Science: The Shortcomings of U.S. School Choice Research and How to Address Them** by John Merrifield (April 16, 2008)
615. **Does Rail Transit Save Energy or Reduce Greenhouse Gas Emissions?** by Randal O'Toole (April 14, 2008)
614. **Organ Sales and Moral Travails: Lessons from the Living Kidney Vendor Program in Iran** by Benjamin E. Hippen (March 20, 2008)
613. **The Grass Is Not Always Greener: A Look at National Health Care Systems Around the World** by Michael Tanner (March 18, 2008)
612. **Electronic Employment Eligibility Verification: Franz Kafka's Solution to Illegal Immigration** by Jim Harper (March 5, 2008)
611. **Parting with Illusions: Developing a Realistic Approach to Relations with Russia** by Nikolas Gvosdev (February 29, 2008)
610. **Learning the Right Lessons from Iraq** by Benjamin H. Friedman, Harvey M. Sapolsky, and Christopher Preble (February 13, 2008)
609. **What to Do about Climate Change** by Indur M. Goklany (February 5, 2008)