



June 9, 2010

**Via Email and U.S. Mail**

Chairman Alan Greenspan  
Greenspan Associates  
1133 Connecticut Avenue NW  
Suite 810  
Washington, DC 20036

**Re: Follow-Up to the Financial Crisis Inquiry Commission Hearing  
on April 7, 2010**

Dear Chairman Greenspan:

On April 15, 2010, Chairman Angelides and Vice Chairman Thomas sent you a letter thanking you for testifying at the April 7, 2010 hearing and informing you that the staff of the Financial Crisis Inquiry Commission ("FCIC") would be contacting you to follow-up on certain areas of your testimony and to submit written questions and requests for information, which are listed below. Please provide your answers and any additional information by June 23, 2010.<sup>1</sup>

1. In your opinion what number reflects "adequate capital" for institutions regulated by the Federal Reserve Board and/or the Office of the Comptroller of the Currency and do you think the banking system should implement more significant capital requirements?
2. Please comment on Professors Reinhart and Rogoff's conclusions about the Federal Reserve and its policy of keeping interest rates low and a steep yield curve.
3. The unprecedented theme about our current situation is the total number of subprime and Alt-A mortgages in our economy, 26 million, which, is about half of all mortgages in our economy.

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<sup>1</sup> The answers you provide to the questions in this letter are a continuation of your testimony and under the same oath you took before testifying on April 7, 2010. Further, please be advised that according to section 1001 of Title 18 of the United States Code, "Whoever, in any matter within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals or covers up by any trick, scheme, or device a material fact, or makes any false, fictitious or fraudulent statements or representations, or makes or uses any false writing or document knowing the same to contain any false, fictitious or fraudulent statement or entry, shall be fined under this title or imprisoned not more than five years, or both."

Phil Angelides  
*Chairman*

Hon. Bill Thomas  
*Vice Chairman*

Brooksley Born  
*Commissioner*

Byron S. Georgiou  
*Commissioner*

Senator Bob Graham  
*Commissioner*

Keith Hennessey  
*Commissioner*

Douglas Holtz-Eakin  
*Commissioner*

Heather H. Murren, CFA  
*Commissioner*

John W. Thompson  
*Commissioner*

Peter J. Wallison  
*Commissioner*

Wendy Edelberg  
*Executive Director*

What has been the effect of this substantial number of bad mortgages on the economy and how did these contribute to the financial crisis?

4. You have written that losses on subprime mortgages triggered the crisis, but that if they had not, some other financial product or market would have caused it. "The Age of Turbulence: Adventures in a New World," A. Greenspan, p. 507 ("Large losses suffered on securitized American subprime mortgages triggered the crisis, of course. But if they had not been the culprit, problems with some other financial product or market inevitably would have done so. The fundamental problem had been the underpricing of risk worldwide, an anomaly that built slowly to near-historic levels over the preceding few years.")

One thesis is that the market underpriced the risk of subprime mortgages because of historically low default rates in the U.S. residential real estate market. Do you agree with this idea? What basis do you have for believing that the inherent risks in other products or markets were similarly mispriced?

What can financial institutions and regulators do differently to address the problem of underpricing risk?

5. You wrote in your Brookings paper, "The Crisis," that the severity of economic losses that result from the bursting of asset bubbles "appears to be a function of the degree of debt leverage in the financial sector." (p. 10)

Given the Federal Reserve's role in setting capital and liquidity requirements for financial institutions, what could the Federal Reserve prudently have done differently to rein in leverage and risk taking that financial institutions engaged in and that increased the severity of the crisis?

6. You wrote in "The Crisis" that "[u]nless there is a societal choice to abandon dynamic markets and leverage for some form of central planning, I fear that preventing bubbles will in the end turn out to be infeasible. Assuaging their aftermath seems the best we can hope for." (p. 46)

You paint the policy choice in stark terms – free markets or central planning. Are there not in fact other degrees of regulatory oversight and alternatives to select from along a dynamic continuum of policy choices?

Your view appears to be that the benefits of deregulation outweigh the cost to society when crises occur. Why?

7. You wrote in "The Crisis" that "[c]apital and liquidity . . . address almost all of the financial regulatory structure shortcomings exposed by the onset of crisis" and that "[a]dequate capital eliminates the need for an unachievable specificity in regulatory fine-tuning." (p. 22)

If capital requirements are adjusted, what is the appropriate role of regulators in conducting oversight examinations or engaging in prudential oversight of financial institutions?

8. You wrote in "The Crisis" that you saw no economies of scale in financial institutions beyond a modest size, and that they had the potential to create unusually large systemic risks, but that "[r]egrettably, we did little to address the problem." (p. 32-33)

What, if anything, could the Federal Reserve have done to prevent firms from becoming "too big to fail?"

9. The Federal Reserve's traditional view of the securitization process was that it diversified risks and spread them to those institutions that were best equipped to handle them. The implication was that hedge funds for example would take over risks from more-risk-adverse commercial banks or pension funds. It didn't turn out that way. Risks ended up being concentrated at several large financial firms, including several commercial banks and under-regulated monoline insurers.

Was the Federal Reserve wrong? Should the Federal Reserve have paid more attention to discover who ultimately bore that risk?

10. You said in "The Crisis" that regulators can "prohibit a complex affiliate and subsidiary structure whose sole purpose is tax avoidance or regulatory arbitrage." It's clear from our examination of Citigroup that a leading reason for the decision to transfer assets into such conduits was the favorable capital treatment.

How could supervisors have prevented regulatory arbitrage prior to this financial crisis? Should we interpret your comment to mean that special-purpose-vehicles, such as asset-backed commercial paper conduits, should be prohibited?

11. Your testimony notes that the "virtually indecipherable complexity" of financial products left many investment managers "in despair" to understand the risks they were taking. You also note that this led to the over-reliance of investors on rating agencies.

What is the answer? Can we continue to assume that every pension fund manager is "sophisticated" and making appropriate choices for his or her investors, even when we admit that every such fund cannot possibly have the resources to understand what is

inside a CDO? Should products this complicated be simply banned? Should there be broader suitability requirements for institutional investors?

12. You said in your testimony that “market players have come to believe that every significant financial institution, should the occasion arise, would be subject to being bailed out with taxpayer funds.” Your solution is contingent capital, debt that would convert to equity in a crisis.

Your solution only applies to banks, and, if they return to life, investment banks. What about the other forms of financial intermediation that were subject to runs and subsequent bailouts in this crisis—for example, commercial paper markets and money market mutual funds? Should the now-implicit government guarantee be made explicit; should they be subject to new regulation?

The FCIC appreciates your cooperation in providing the information requested. Please do not hesitate to contact Dixie Noonan at (202) 292-1350 or [dnoonan@fcic.gov](mailto:dnoonan@fcic.gov); or Jeff Smith at (202) 292-1398 or [jsmith@fcic.gov](mailto:jsmith@fcic.gov) if you have any questions or concerns.

Sincerely,



Wendy Edelberg  
Executive Director  
Financial Crisis Inquiry Commission

Cc: Phil Angelides, Chairman, Financial Crisis Inquiry Commission  
Bill Thomas, Vice Chairman, Financial Crisis Inquiry Commission  
Dixie Noonan, Senior Counsel  
Jeff Smith, Investigative Counsel  
A.B. Culvahouse, O'Melveny & Myers LLP (via email)  
Brian Brooks, O'Melveny & Myers LLP (via email)



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June 23, 2010

OUR FILE NUMBER

**VIA E-MAIL AND U.S. MAIL**

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Executive Director  
Financial Crisis Inquiry Commission  
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Re: **Supplemental Testimony of Alan Greenspan**

Dear Ms. Edelberg:

Enclosed please find Dr. Greenspan's responses to the supplemental questions propounded by the Commission on June 9, 2010. Please note that Question 2 has been revised to reflect the clarification provided by the Commission after the questions were originally propounded. Please call if you have any questions.

Very truly yours,

Brian P. Brooks

Encl.

cc: The Hon. Phil Angelides, Chairman  
The Hon. Bill Thomas, Vice Chairman  
Dixie Noonan, Esq.  
Jeff Smith, Esq.  
Arthur B. Culvahouse, Jr., Esq.

## **Supplemental Testimony of Alan Greenspan**

### **Financial Crisis Inquiry Commission**

Wednesday, June 23, 2010

- 1. In your opinion what number reflects “adequate capital” for institutions regulated by the Federal Reserve Board and/or Office of the Comptroller of the Currency and do you think the banking system should implement more significant capital requirements?**

As explained in “The Crisis” (p. 24), data relating to the average spread of five-year credit-default swaps immediately before and immediately after the announcement of the federal TARP program implies an overall very approximate additional four-percentage-point rise (from the prevailing pre-crisis 10 percent of assets to 14 percent) in the equity capital cushion required by market participants to fund the liabilities of banks.

That said, the task of determining what constitutes “adequate capital” is somewhat more involved than simply identifying an average equity to total assets number. Any meaningful determination of capital adequacy must reflect both the quality of the assets and nature of the liabilities. The methodology matters a great deal. For example, Basel II currently assigns a zero percent risk weight to the sovereign debt of all OECD countries, even though the sovereign debt of, for example, Greece, Spain or Portugal present very different default risks as compared to the sovereign debt of the United States. Likewise, Basel II assigns a 50 percent risk weight to mortgage securities backed by first-lien mortgages on 1-4 family properties, without further regard to the risk of default in the underlying mortgage pool. As these examples suggest, the adequate capital calculation is very difficult to make unless the underlying methodologies for calculating capital reflect actual risk.

It is also important to acknowledge the trade-offs inherent in establishing any capital requirement. Increasing capital requirements necessarily will cause banks to reduce lending, since banks required to hold more capital on their books will have less to lend. In the end, some reduction in lending may be beneficial, since, in retrospect, the low capital requirements that prevailed in years preceding the crisis provided an implicit subsidy to the credit markets whose size became apparent only in the aftermath of the Lehman Brothers bankruptcy. As a result, some loans were made that should not have been made, and in a world with greater capital requirements, such loans would not be made. But it is important to recognize that, as capital requirements increase, overall lending will decrease, thus requiring regulators to carefully balance the risks of benefits of lending in particular circumstances.

As noted in my written testimony (pp. 11-12), I support the idea of contingent capital bonds. In periods of stringency, the bonds would serve as additional equity capital. Moreover,



requiring the banks to issue contingent capital bonds would provide banking regulators with improved market-based signals about the riskiness of regulated institutions in advance of a potential failure, although that requirement may not be feasible for smaller institutions for whom issuing such debt may not be economically viable.

2. **Vincent Reinhart has indicated that he thinks, based on his knowledge and experience, that the Federal Reserve made a mistake signaling to the market that it was going to slowly raise short-term rates. And the argument is that this created a steep yield curve because the market, as we saw over and over again, quickly adjusted to where they knew the rates would eventually go. And, the steep yield curve led to novel ways for firms to take advantage of borrowing very short-term and lending long-term.**

**Do you agree with that analysis, in retrospect, and was the Federal Reserve's strategy the right one to take? Or, is it the usual argument that it was the right decision at the time given the information they had and under the circumstances?**

I disagree. First, the yield curve did not steepen, it narrowed. Between June 2004 and June 2006, the period when the Federal funds rate rose from 1% to 5.25%, the spread between the funds rate and the 10-year Treasury note (a key rate governing economic activity) narrowed from 3.7 percentage points to zero. (The federal funds rate rose 425 basis points, the 10-year note by only 50 basis points.)

Monetary policy operates in the context of market expectations as measured, in recent years, by federal fund futures. The Federal Open Market Committee (FOMC) has the choice of confirming markets' expectations or altering them by surprise moves in rates or announcements. If the FOMC believes the market is misreading its intentions, it will move to counteract inappropriate market expectations. In an unscheduled special meeting in January 2001, the FOMC did just that.

But there is a cost to uncertainty to disrupting markets which, if it becomes chronic, is inimical to economic growth. Most of the time, therefore, the FOMC seeks to guide expectations in such a manner that Federal Reserve policy moves and announcements of intentions do not disrupt the market. Any presumption of market participants that they "knew where rates would eventually go" after our initial moves in 2004 is not credible. When the Federal Reserve started raising the federal funds rate in June 2004, FOMC members (including myself as chairman) had no way of predicting how far we would eventually need to go. Predictions by market participants of how much we would raise rates were nothing more than speculation.

But more importantly, long-term interest rates which govern most economic activity had become de-linked from the federal funds rate. From 1963 to 2002, the correlation coefficient between the fed funds rate and the long-term fixed-rate mortgage rate had been a tight 0.86 (a coefficient that differs slightly from the 0.83 figure reported in an earlier version of "The Crisis" that had been based on an analysis involving 30-year mortgages). But by the early part of the 2000s, the long-term mortgage rate had become de-linked from the fed funds rate, with the

correlation between the two falling close to zero during the years 2002 to 2005, the period when the housing bubble was most intense. As a consequence, the Federal Reserve's steady tightening of monetary policy beginning in 2004, as I note in "The Crisis," had little, if any, influence on home prices. The global house price bubble was a consequence of lower interest rates, but it was *long term* interest rates that galvanized home asset prices, not the overnight rates of central banks. Thus, it is difficult to tie the Federal Reserve's monetary policy in 2004-2006 to the housing bubble.

**3. The unprecedented theme about our current situation is the total number of subprime and Alt-A mortgages in our economy, 26 million, which, is about half of all mortgages in our economy. What has been the effect of this substantial number of bad mortgages on the economy and how did these contribute to the financial crisis?**

As I discussed in my written testimony, there is nothing inherently "bad" about subprime or Alt-A mortgages as such. (Testimony, pp. 1-2.) For years prior to the crisis, these markets functioned effectively, delivering credit to individuals who were unable to meet the 20 percent down payment requirement of traditional prime mortgages, but who otherwise had the capability of meeting the payment obligations under the terms of a subprime loan with less- stringent origination requirements. In the 2000 time frame, almost 70% of such loans were fixed-rate mortgages, fewer than half of subprime originations had been securitized, and few, if any, were held in portfolios outside the United States. In short, from its origins through roughly 2003, the subprime mortgage market was a small but well-functioning market.

That said, the global proliferation of securitized, toxic U.S. subprime mortgages was the immediate trigger of the crisis. Belatedly drawn to this market by rising home prices, financial firms, starting in late 2003, began to accelerate the pooling and packaging of subprime mortgages into securities. The firms clearly had found receptive buyers. Heavy demand from Europe, mainly in the form of subprime mortgage backed collateralized debt obligations, was fostered by attractive yields and a foreclosure rate on the underlying mortgages that had been in decline for two years.

An even heavier demand was driven by the need of Fannie Mae and Freddie Mac, the major U.S. government-sponsored enterprises (GSEs), pressed by the Department of Housing and Urban Development and the Congress, to meet expanded "affordable housing goals." Given the size of the GSEs expanded commitments to fund low and moderate income housing, they had few alternatives but to invest, wholesale, in subprime securities. The GSEs accounted for an estimated 42 percent and 49 percent of all newly purchased subprime mortgage securities (almost all at adjustable interest rates) retained on investors' balance sheets during 2003 and 2004, respectively. That was more than five times their estimated share in 2002. The GSEs Alt-A shares of the total Alt-A securitized market were about half of the subprime securities' share.

Increasingly, the extraordinary demand, especially from Fannie Mae and Freddie Mac, pressed against the limited supply of qualified potential subprime mortgage financed homeowners. To reach beyond this limited population, securitizers unwisely prodded subprime



mortgage originators to produce more volume. This led originators to offer adjustable rate mortgages (ARMs) with initially lower monthly payments. As loan underwriting standards deteriorated rapidly as a consequence, ARMs soared to nearly 62% of first mortgage subprime originations by the second quarter of 2007. By 2005 and 2006, subprime mortgage originations had swelled to 20 percent of all U.S. home mortgage originations, almost triple their share in 2002.

By the first quarter of 2007, virtually all subprime mortgage originations were being securitized, compared with less than half in 2000, and subprime mortgage securities outstanding totaled more than \$800 billion, almost seven times their level at the end of 2001. The securitizers, profitably packaging this new source of paper into mortgage pools and armed with what turned out, in retrospect, to be grossly inflated credit ratings, were able to sell seemingly unlimited amounts of these securities into what appeared to be a vast and receptive global market. The seeds of crisis had been sown.

4. **You have written that losses on subprime mortgages triggered the crisis, but that if they had not, some other financial product or market would have caused it. “The Age of Turbulence: Adventures in a New World,” A. Greenspan, p. 507 (“Large losses suffered on securitized American subprime mortgages triggered the crisis, of course. But if they had not been the culprit, problems with some other financial product or market inevitably would have done so. The fundamental problem had been the underpricing of risk worldwide, an anomaly that built slowly to near-historic levels over the preceding few years.”).**

**One thesis is that the market underpriced risk of subprime mortgages because of historically low default rates in the U.S. residential real estate market. Do you agree with this idea? What basis do you have for believing that the inherent risks in other products or markets were similarly mispriced?**

**What can financial institutions and regulators do differently to address the problem of underpricing risk?**

Mispricing – *i.e.*, instances in which investors price securities to reflect unsustainable levels of euphoria or fear – is best measured by credit spreads against “riskless” securities. At the height of the euphoric boom, virtually all assets were “mispriced.” Yields on CCC junk bonds in the spring of 2007, for example, were trading at less than 500 basis points over 10-year U.S. Treasury notes, a historical low. (They had been as high as 2500 basis points in 2000.) In early 2007, there were similar imbalances in virtually all asset classes. If securities backed by subprime mortgages had not existed, commercial paper and/or money market mutual funds could have triggered the financial crisis, though perhaps not as virulently. Regulators need to impose higher capital requirements to restrict losses on such holdings to shareholders and hence prevent debt default contagion. Better risk management models, especially at credit rating agencies, would help.

5. **You wrote in your Brookings paper, “The Crisis,” that the severity of economic losses that result from the bursting of asset bubbles “appears to be a function of the degree of debt leverage in the financial sector.” (p. 10)**

**Given the Federal Reserve’s role in setting capital and liquidity requirements for financial institutions, what could the Federal Reserve prudently have done differently to rein in the leverage and risk taking that financial institutions engaged in and that increased the severity of the crisis?**

The largest companies that failed during the crisis – including AIG (and specifically its Financial Products unit), Lehman Brothers, and Bear Stearns – were broker-dealers, insurance company affiliates, and other entities that were not banks or bank holding companies and thus were not subject to Federal Reserve regulation or oversight. Two large deposit institution failures – Washington Mutual and Indymac Bank – were thrifts and thrift holding companies that were subject to regulation and supervision by the Office of Thrift Supervision and not the Federal Reserve. The Federal Reserve’s authority is limited to supervising compliance with capital requirements for (and otherwise supervising) bank holding companies and state-chartered banks that are members of the Federal Reserve System. The largest institutions that failed (or were sold to avoid failure) during the crisis were not Federal Reserve-regulated entities, and the largest Fed-regulated entities did not fail during the crisis. The most recently available FDIC data listing the 251 bank failures between 2007 and the present includes only nine banks listed on the FDIC’s list of inactive state member banks (the banks for which the Federal Reserve served as primary federal regulator).

Moreover, over the past several decades, the market for debt financing has shifted away from traditional bank lending, in which borrowers obtain loans from depository institutions over many of which the Federal Reserve has some degree of regulatory oversight, and toward capital-markets financing, in which would-be borrowers issue commercial paper or other instruments on the open market through investment banks or other intermediaries that are most often not subject to Federal Reserve oversight.

6. **You wrote in “The Crisis” that “[u]nless there is a societal choice to abandon dynamic markets and leverage for some form of central planning, I fear that preventing bubbles will in the end turn out to be infeasible. Assuaging their aftermath seems the best we can hope for.” (p. 46)**

**You paint the policy picture in stark terms -- free markets or central planning. Are there not in fact other degrees of regulatory oversight and alternatives to select from along a dynamic continuum of policy choices?**

**Your view appears to be that the benefits of deregulation outweigh the cost to society when crisis occur. Why?**

I do not view the policy picture in stark terms. Central planning to a greater or lesser extent exists in every modern economy. Monetary and fiscal policy and financial regulation are forms of central planning. The issue is always a matter of degree. The appropriate choice, in my judgment, is in choosing regulatory approaches that leverage market forces (such as price signals, incentives, and others) to achieve their objectives rather than regulatory approaches that operate by discretionary command and control. As a general proposition, I believe the most effective regulations are those that take advantage of, or incorporate, market signals.

The current crisis has demonstrated that neither bank regulators nor anyone else can consistently and accurately forecast whether, for example, subprime mortgages will turn toxic, or to what degree, or whether a particular tranche of a collateralized debt obligation will default, or even if the financial system as a whole will seize up. A large fraction of such difficult forecasts will invariably be proved wrong. Although regulators may often be able to identify underpriced risk and the existence of bubbles, they cannot, except by chance, effectively time the onset of crises.

With that in mind, I see no ready regulatory alternative, in the current environment of complexity, to increasing bank capital requirements, heightened enforcement against fraud, enhancing individual banks' counterparty risk surveillance, and specifically to implementing a contingent capital requirement. ("The Crisis," p. 37.) This combination of regulatory initiatives is preventative and market-based, and avoids the inevitable limitations of regulators attempting to predict shocks in the financial system. Sufficient capital levels will protect the system from the consequences of inevitable forecast failures. A firm that has adequate capital, by definition, will not default on its debt obligations even when it experiences a reversal of fortune that its managers failed to predict. In a system in which all financial institutions are adequately capitalized, contagion will not spread when any such institutions experience unpredicted reversals of fortune. All losses will simply accrue to common shareholders. (Testimony, p. 10.) To the extent that we would all prefer to enhance our ability to predict risk, the solution is not discretionary initiatives conceived by individual regulators, but to impose capital structure requirements that eliminate the necessity to forecast.

I strongly support market-based competition because, since this nation's inception, it has delivered a standard of material wellbeing far higher than has ever been achieved. When overregulation stifles economic growth, the benefits of deregulation do outweigh the costs, as was recognized in the 1970s by the bipartisan deregulation initiated by the Ford and Carter administrations. Deregulation was not the cause of the 2008 crisis.

My economic policy views had no bearing on my job as a regulator. Outside of monetary policy, Federal Reserve governors (including the chairman) have little discretion in regulatory matters. They are required by law to adhere to statutes legislated by the Congress. As indicated in my written testimony (Testimony pp. 12-16), the Federal Reserve during my tenure as chairman, promulgating a substantial record of regulations and guidelines. A summary of these initiatives relating to subprime and nontraditional mortgage lending is included with my written testimony. (Testimony, Exhibit A.)

7. **You wrote in “The Crisis” that “[c]apital and liquidity . . . address almost all of the financial regulatory structure shortcomings exposed by the onset of the crisis” and that “[a]dequate capital eliminates the need for an unachievable specificity in regulatory fine-tuning.” (p. 22)**

**If capital requirements are adjusted, what is the appropriate role of regulators in conducting oversight examinations or engaging in prudential oversight of financial institutions?**

The role of regulators with respect to oversight examinations should be precisely the same in a world with increased regulatory capital requirements. One is not a substitute for the other. To be clear, the primary purpose of increasing the regulatory capital requirement is to prevent contagion in the event of unforeseeable future crises. If capital is adequate, by definition, no counterparty default will lead to serial contagion that threatens the viability of the broader system. Oversight examinations serve a separate function by focusing on bank-specific risk issues, such as fraud prevention, undue asset concentration, or internal control adequacy, which are essential to gauging the soundness of the institution but cannot be mitigated simply by increasing the regulatory capital requirement.

8. **You wrote in “The Crisis” that you saw no economies of scale in financial institutions beyond a modest size, and that they had the potential to create unusually large systemic risks, but that “[r]egrettably, we did little to address the problem.” (p. 32-33)**

**What, if anything, could the Federal Reserve have done to prevent firms from becoming “too big to fail”?**

Our scope was limited. My understanding is that the Federal Reserve has essentially only two sources of authority to limit the size of the banking institutions it regulates. First, it has statutory authority to regulate bank holding company mergers and can require bank divestitures provided it can demonstrate that the market concentration of the merged entity would reduce competition to the point where the merged institution would have substantial power to raise prices in a given market. Second, the Federal Reserve may prohibit bank mergers where the resulting bank entity will have 10 percent or more of national deposits or 30 percent or more of a state’s deposits.

9. **The Federal Reserve’s traditional view of the securitization process was that it diversified risks and spread them to those institutions that were best equipped to handle them. The implication was that hedge funds for example would take over the risks for more-risk-adverse commercial banks or pension funds. It didn’t turn**

**out that way. Risks ended up being concentrated at several large financial firms, including several commercial banks and under-regulated monoline insurers.**

**Was the Federal Reserve wrong? Should the Federal Reserve have paid more attention to discover who ultimately bore that risk?**

To my recollection, there were instances in which much of the risk diversification from securitization was reversed by banking entities belatedly fearful of “reputation risk” – for example, when Citigroup made the decision in December 2007 to take approximately \$49 billion of assets back onto its balance sheet that had been held in off-balance-sheet structured investment vehicles (or “SIVs”). But, by and large, the institutions that held subprime-backed securities were not bank holding companies or state member banks regulated by the Federal Reserve. The largest holders of subprime securities exposures tended to be SEC-regulated broker-dealers, such as Lehman Brothers and Bear Stearns; state-regulated monoline insurers, such as Financial Guaranty Insurance Company (FGIC); and CDS issuers, such as AIG Financial Products, an unregulated affiliate of a state-regulated insurance company. Among the largest bank-holding-company affiliates subject to Federal Reserve oversight, Citigroup stands out as having significant exposure to subprime mortgage risk. To the best of my understanding, however, that exposure was not due to securitization in particular, but in large part to Citi’s decision to hold large numbers of whole loans on its balance sheet.

While the securitization process itself does not appear to have significantly altered the risk profile for the largest institutions subject to Federal Reserve oversight, the fact that the securitization process allowed mortgage-related risk to migrate to relatively lightly regulated (or even unregulated) entities with little or no experience of the mortgage markets is cause for concern. I favor regulatory improvements that would enhance the ability of regulators to identify the ultimate holders of risk exposure.

**10. You said in “The Crisis” that regulators can “prohibit a complex affiliate and subsidiary structure whose sole purpose is tax avoidance or regulator arbitrage.” It’s clear from our examination of Citigroup that a leading reason for the decision to transfer assets into such conduits was the favorable capital treatment.**

**How could supervisors have prevented regulatory arbitrage prior to this financial crisis? Should we interpret your comment to mean that special purpose-vehicles, such as asset-backed commercial paper conduits, should be prohibited?**

As I have stated, I believe the most effective way of mitigating contagion in future financial crises is to require an adequate national capital structure. Regulatory arbitrage will always exist to the extent that financial institutions are governed by different regulators, and banning specific products or investment vehicles ultimately does not address the underlying concern that the failure of any single financial institution will have systemic consequence. By requiring a national adequate capital structure, financial institutions can continue to select the regulator and regulatory framework that most closely aligns with their unique interests and organizational issues without increasing the risk that such “arbitrage” will lead to contagion in the event of crisis.

11. **Your testimony notes that the “virtually indecipherable complexity” of financial products left many investment managers “in despair” to understand the risks they were taking. You also note that this led to the over-reliance of investors on rating agencies.**

**What is the answer? Can we continue to assume that every pension fund manager is “sophisticated” and making appropriate choices for his or her investors, even when we admit that every such fund cannot possibly have the resources to understand what is inside a CDO? Should products this complicated be simply banned? Should there be broader suitability requirements for institutional investors?**

This has always been a difficult tradeoff. At one extreme, if all market participants are protected from the consequences of their actions, the market will not efficiently distribute the scarce savings of a society to fund its most productive capital investments. But any economy that allows widespread fraud cannot effectively function any better. Where the line is drawn on investor protection is a value-judgment tradeoff best decided by the Congress.

Neither my background nor the Federal Reserve’s authority extends to investor protection regulatory issues, which are the province of the Securities and Exchange Commission, FINRA and other organizations. That said, my general belief is that simply banning products for which there is legitimate market demand is not the preferable approach to regulation.

12. **You said in your testimony that “market players have come to believe that every significant financial institution, should the occasion arise, would be subject to being bailed out with taxpayer funds.” Your solution is contingent capital, debt that would convert to equity in a crisis.**

**Your solution only applies to banks, and, if they return to life, investment banks. What about the other forms of financial intermediation that were subject to runs and subsequent bailouts in this crisis -- for example, commercial paper markets and money market mutual funds? Should the now-implicit government guarantee be made explicit; should they be subject to new regulation?**

As discussed above, my proposal to implement contingent capital requirements for banks is not intended as a panacea for all financial market participants. Contingent capital is too new to have been adequately tested. We should await the experience of the few banks who have issued contingent capital debt before we seek broader regulatory coverage.



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ALAN GREENSPAN