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Introduction

Chairman Angelides, Vice Chairman Thomas, and members of the Commission, thank you for the opportunity to appear before you today. Now is an excellent time to discuss the history of the recent financial and economic crisis, as time has given us some perspective, and Congress has yet to enact legislation. Today, I will offer some thoughts on the causes of the global financial crisis. The issues are quite complex, and necessarily our views continue to develop as we all learn more.

Over the course of this crisis, we as an industry caused a lot of damage. Never has it been clearer how mistakes made by financial companies can affect Main Street, and we need to learn the lessons of the past few years. This Commission's work is particularly important because those lessons are not simple ones; this crisis had a multitude of causes that are not easily summarized. Policy prescriptions based on overly simple answers to the question "What went wrong?" may avoid repeating recent history, but end up hamstringing the U.S. financial system and economy in equally damaging ways.

Today, I will set forth our view of the causes and progress of the global financial crisis, and the experience of Bank of America, and the companies it acquired, in that crisis. Really, we have seen four crises: (1) a mortgage crisis in the U.S. and abroad; (2) a capital markets crisis; (3) a global credit crisis; and (4) a severe global recession.

In my testimony, I will discuss each in turn, and also share what I saw as Bank of America's experience in these crises. I will then outline some important lessons that banks and policymakers can learn from this history.

Mortgage Crisis

Background

The U.S. mortgage crisis originated with a dramatic expansion in the availability of mortgage credit, and substantially higher individual leverage, through subprime lending and aggressive mortgage terms. Lenders, prompted by lower interest rates, rapidly rising home prices, and large amounts of foreign investment capital seeking higher yields, made credit available to borrowers who could not previously have qualified for a mortgage or extended far more credit than proved to be prudent by departing from historical practice in several ways:

- Loans were made to people with poorer credit histories in greater amounts on the expectation that home values and economic fortunes would be stable or continue to rise – an expectation drawn from recent history.
- Lenders allowed borrowers to make very small down payments instead of the traditional 10 percent or 20 percent. Zero down-payment loans offered full leverage but provided no buffer in the event of home price depreciation. Lenders underestimated the power of a borrower's personal equity in a loan in giving a borrower an incentive to repay. Furthermore, when home prices stopped rising and began declining in 2007, these smaller equity stakes

made it easier for a borrower's loan to go upside down (that is, for the mortgage principal to exceed the value of the home). Based on past experience and sophisticated modeling, lenders assumed borrowers would continue to make payments even when their loans were upside down. That assumption proved incorrect.

- Lenders made adjustable rate loans with low rates over the first years of the mortgage, thereby making it easier for the borrower to qualify for a larger loan. Lenders offering these “hybrid ARM” loans, and the borrowers who obtained them, believed that before the loan reset to a higher interest rate, the borrower's circumstances would improve, the borrower would be able to refinance to a lower rate or the home could be sold to fully repay the loan. Again, traditional ARMs were not a new product, and prior history had shown this practice to be sound. These products, especially some versions of them, became vulnerable when a recession depressed borrower income growth, and significant home price depreciation foreclosed the refinancing and sales options.
- For prime consumers, with better credit histories, lenders marketed “stated income” or “low documentation” loans. These loans were attractive not only for borrowers who wanted prompt approval but also borrowers who were self-employed or had non-traditional financial profiles, and so did not have the tax records required for approval by traditional banks. These so-called “Alt-A” loans were eligible for guarantee by Fannie Mae and Freddie Mac, whose participation in the lending process also provided legitimacy to these products, so their volume grew quickly.
- Many non-traditional lenders became reliant on mortgage brokers, some of whom proved willing to originate loans without regard to the risks of the loans. Brokers had an incentive to “get the borrower through,” as the broker did not bear the risk of the loan. It simply was a volume issue for them at that point.

These features, and the resulting expansion in lending to a new class of borrowers, proved popular with consumers and also policymakers, who believed that the expansion in American homeownership was a very good development. No one involved in the housing system – lenders, rating agencies, investors, insurers, regulators or policy makers – foresaw a dramatic and rapid depreciation in home prices. When the nation did experience an unprecedented, national decline in home prices – the first since the Great Depression – which was coupled with a follow-on recession, many of these loans became unfavorable, the option of refinancing disappeared, and, as we will see, protections intended to protect investors in mortgage-related assets unraveled.

For lenders to make these loans, they required funding, and the capital markets provided such funding. Under an “originate to distribute” model, loans were packaged together and underwritten by investment banks, which worked with the rating agencies to structure the transactions and related enhancements, and obtain the all-important securities rating. To market the securities, underwriters required a favorable rating from the rating agencies. To protect investors' returns and secure a more favorable rating, underwriters obtained insurance from monoline insurers, which promised to make up for any shortfall in the payment streams on the securities. The ratings agencies analyzed information they received about the credit attributes of the loans pooled into the securities, and ran models to determine the likelihood of default. The monoline insurers' backstop, and their own evaluation of the securities, supported the structures. With the rating in place, mortgage-backed securities were eligible for sale to investors around the world. And at a time of low interest rates, these securities were an attractive option for investors chasing yield and willing to take greater risk. This model thus worked well at the time, as the success of the

structures spurred demand for more mortgages to package and sell, encouraging lenders to expand credit still further.

Securitization is also a critical element of our modern capital markets system and is not inherently unsound. The securitization market permits diversification and spreading of risk more effectively. Furthermore, it allowed lenders to reduce the risk of holding mortgages. Risk-based capital requirements gave federally regulated banks an incentive to shed mortgage assets. But the originate-to-distribute model also reduced the incentives for some lenders to apply as strict credit underwriting standards for securitized loans than they may have applied if they were required to hold and service those loans in portfolio, in essence tailoring the yield and related risks to meet investor demand.

Similarly, there are many consumers for whom adjustable-rate mortgages can make sense. And for banks, they reduce interest-rate risk, and therefore can permit more favorable pricing for consumers. But particularly for subprime borrowers, these ARMs fared poorly in the midst of a housing crisis.

The brokers and lenders who sold these loans to consumers in many cases were state licensed and we now know under-supervised. And while some broker and lender practices drew (deserved) criticism, the general push towards expanding homeownership was applauded. The largest lender was Ameriquest, a California non-bank company. Ameriquest sponsored the Super Bowl in 2004; the Texas Rangers played at Ameriquest field; the company's motto was "proud sponsor of the American dream." While that boast seems ironic in hindsight, it made sense at a time when increased homeownership rates had been official national policy for years. Both government leaders and consumer advocacy organization had long pressed lenders to find ways to expand their lending criteria and thereby increase homeownership rates among traditionally disadvantaged communities.

In addition, many monoline lenders decided to fund with deposits and obtained a bank charter to do so. This has produced substantial losses to the FDIC's deposit insurance fund, which has to be replenished by surviving banks.

It did not have to be this way. Bank of America stopped subprime origination in 2001. Our decision to exit subprime lending was made after a careful analysis that indicated that financial returns in this line of business did not cover the operating costs and the risk of defaults in periods of economic stress. (We continued, though, to serve low- and moderate-income borrowers through traditional products, as part of our longstanding commitment to affordable lending.) Other federally supervised banks generally never entered or eventually moved away from subprime, or were moved away by the Comptroller of the Currency and other federal regulators. For example, they insisted that insured banks consider the fully indexed rate in underwriting ARMs. So, at the height of the subprime mortgage boom in 2003, none of the top 10 subprime mortgage lenders was a national bank, and only two were insured, and thus federally supervised, thrift institutions.

That is not to say we at Bank of America made no mistakes. As borrowers sought to monetize the equity in their homes, we expanded our position to become a leading provider of prime second mortgages. We assumed that payment patterns for second mortgages would mirror past payment patterns for first mortgages. Instead, as home values fell unexpectedly, second mortgages in many cases behaved more like unsecured credit, and we suffered severe losses on these portfolios.

Part of the losses that many prime lenders suffered came from speculation by prime borrowers. It is worth noting that home purchases for investment, not for shelter, increased from a historical average of 3-4% of the total residential market to a high of 28% in 2006. More than a quarter of all home purchases (single family and condo) were homes for investment purposes. In other words, housing became, like tech stocks in the late 1990s, the subject of a speculative bubble. But because housing investments were more heavily leveraged for consumers (through lower down-payments and adjustable payments) and for investors (through structured finance), the bursting of the housing bubble had far more serious systemic consequences.

Onset of crisis

The mortgage crisis began with the slowing of home price appreciation, which eventually turned into the first national depreciation in housing values in roughly 80 years. Customer defaults caused the failure of subprime lenders. On February 7, 2007 (more than a year before the failure of Bear, Stearns), New Century, one of the largest subprime lenders, announced a massive restatement that reduced its market cap by a third. Other subprime lenders like NovaStar began announcing losses or increases to their provisions for loan losses. New Century filed for bankruptcy on April 2, 2007, and American Home followed suit on August 6. On June 7, Bear Stearns was forced to suspend redemptions from one of its two large hedge funds invested in subprime and Alt A mortgages, liquidating those funds a month later.

In August 2007, evidence of a global mortgage crisis came through Northern Rock, a British savings bank that had acquired significant subprime mortgage assets was effectively nationalized by the Bank of England as a result of a run on its deposits. The subprime dominoes continued to fall over the next year, with thrifts such as Indy Mac and Washington Mutual failing, and Wachovia apparently being damaged largely as a result of the activities of Golden West Financial Corp., which it acquired in 2006.

At Bank of America, our primary window into the mortgage crisis came through acquisition of Countrywide, announced January 11, 2008. We purchased Countrywide in an all-stock transaction originally valued at \$4 billion but eventually settled for less. It is easy to forget that Countrywide began as a fixed-rate lender. It then found that California finance companies and thrifts were offering novel products on easier terms and made the business judgment to expand its product line to appeal to an expanded population of borrowers that the secondary mortgage market was eager to finance. Countrywide was both state-licensed and federally insured and regulated. It did suffer serious losses, and ultimately was acquired, when home prices severely depreciated. But Countrywide did not fail or impose any losses on the FDIC; we made the acquisition without any government backstop.

The Countrywide acquisition has positioned the bank in the mortgage business on a scale it had not previously achieved. There have been losses, and lawsuits, from the legacy Countrywide operation, but we are looking forward. We acquired the best mortgage servicing platform in the country, and a terrific sales force. I should also note that Bank of America Home Loans completed during 2009 over 440,000 mortgage modifications, 290,000 under its own programs and 150,000 under the Treasury Department's HAMP program.

Capital Markets Crisis

The second crisis came at investment banks, which had not only underwritten mortgages (in some cases, owning subprime companies) but also retained significant amounts of their risk, by holding and providing backup liquidity for CDOs. This is a point worth emphasizing, because many have

suggested that investment banks duped investors into investing in bad mortgage-backed securities; to the contrary, those that failed did so precisely because they thought these were *good* securities, and retained for themselves substantial amounts of the exposure they presented, and suffered large losses on those retained interests.

Securitization structures developed by investment banks took all the risks of a subprime loan and multiplied them, by leveraging that asset. Thus, in a typical CDO, or collateralized debt obligation, lower tranches of mortgage-backed securities would be pooled, and the payment stream from those mortgage-backed securities assigned different priorities, with different tranches of the CDO receiving different rights to payments. The least risky tranches, those with first claim on interest payments and eventual principal repayment, were highly rated by the rating agencies, and held by pension funds and other risk-averse investors. Higher risk yet higher yielding tranches tended to go to hedge funds, or were retained by the underwriting bank. Over time, “CDO squared” structures were created, whereby lower-rated tranches of existing CDOs were repackaged and were able to obtain a higher rating than any of the individual tranches would alone. This leveraged structure also caused the consolidation of risk in a large pool of assets into a single class of securities. While the theory was that diversification meant that, say, ten BBB tranches combined would behave like a AA-rated security, events showed that ten BBB-rated CDO tranches combined would behave under economic stress like a BBB-rated security, which is to say worse.

In many cases, banks provided liquidity facilities to the investors whereby the banks retained substantial risk. The underlying asset classes were not just subprime residential mortgage loans. In many cases, the asset classes were mixed for diversification purposes. At the time, great effort was put into structuring transactions that met the criteria to achieve the quality for the various securities ratings and would qualify for the applicable insurance wraps. This structuring, in large part, was grounded in how such asset classes had performed in historical periods of economic stress.

The risks of mortgage securities were further spread by the use of structured investment vehicles, or SIVs. These were considered independent entities for regulatory and bankruptcy purposes; they were self-funding and intended to be perpetual. A part of their funding generally came from commercial paper, an instrument with a maturity of less than a year, and generally priced close to LIBOR. The remainder generally came from other forms of term debt. The SIVs used this funding to purchase long-term assets such as mortgaged-backed securities, auto-backed securities and credit-card-backed securities. This structure allowed SIVs to “borrow short and lend long,” as the rating agencies considered the underlying assets to be of high quality and therefore gave high ratings to the paper and other debt issued by the SIV. To protect the structure, market rating-based triggers were inserted that required the SIV to sell assets if the underlying collateral were downgraded. In effect, SIVs represented maturity arbitrage, funding higher interest rate long-term assets with lower interest rate short-term liabilities.

A liquidity crisis in the SIVs began in mid-2007 and caused a very serious disruption to the commercial paper market (and the money market) that continued through 2008. The impact was not limited to financial services firms but also included commercial firms. Along with JP Morgan Chase and Citigroup, Bank of America (which had not sponsored any SIVs) worked with the Treasury Department to develop a Master Liquidity Enhancement Conduit (M-LEC), basically a super-SIV, to purchase assets from existing SIVs, supply a new liquidity facility, and refinance those assets. Most sponsors of SIVs ultimately decided that the most prudent course was to avoid fire sales (caused by market triggers in illiquid markets) and rescue investors by bringing those

assets onto their balance sheets and funding them, however, thereby mooted the need for M-LEC. Several independent SIVs ultimately were liquidated.

By investing in CDOs, SIV paper, and other instruments they created, investment banks, hedge funds, and asset management firms made the same basic assumption as many consumers: They believed that home prices would continue to appreciate, and therefore they believed that these CDO and SIV structures were sound and that the risks of subprime lending were manageable in what was perceived to be a strong economic environment. These investment vehicles were structured to be able to absorb an historical stress level – not an abnormally rosy forecast. This belief was supported, and the sale of these securities to a wide range of investors made possible, by the rating agencies, which reviewed and rated each structure, and insurers, who in many cases offered protection against losses. Investors, mostly sophisticated institutions, discounted the risks inherent in subprime lending, and over-relied on the structures (including credit enhancements and the protection of market triggers) and ratings of the securities they negotiated and purchased. (As we will see, investors included money market funds, which added an additional level of complexity and potential contagion to the system.)

The rapid decrease in the value of mortgage-related assets had particularly significant consequences for investment banks because of their funding structure. First, they operated with extraordinary leverage, 30 to 1 or sometimes considerably more. In other words, a million dollars in CDOs on their balance sheet was funded by only \$33,000 in capital, with the remainder borrowed against that asset. Second, they funded themselves largely on a daily basis, which meant that they relied on the confidence of the markets to survive on a daily basis. Third, they funded themselves to a significant extent with repos backed by other trading assets – meaning that if the market lost confidence in those assets on any given day, funding would no longer be available, and assets would have to be sold. While efficient in good times, this structure was susceptible to a liquidity crisis in bad times.

For perspective, contrast this model to the one required of bank holding companies. Our leverage was capped by Federal Reserve regulations at around 16 to 1. Because of the longer-term nature of our assets (primarily loans), we funded ourselves with debt of longer-dated maturity; substantial amounts of our debt did not come due every day. And we hold a large base of stable insured deposits. Finally, in the event of a crisis in confidence, we and other commercial banks have access to the Federal Reserve's discount window, where we can pledge high quality assets and be assured of funding. (After the failure of Bear Stearns, the Federal Reserve granted discount window access to all investment banks for the first time since its founding in 1913; after the failure of Lehman Brothers, the Federal Reserve on an emergency basis granted applications from Morgan Stanley and Goldman Sachs to become bank holding companies.)

While leverage was a crucial factor, numerous other causes combined to produce cascading and catastrophic losses for investment banks. As with gunpowder, a variety of elements that were benign in isolation became combustible when combined under stress:

- Credit default swaps (CDS) were basically insurance policies underwritten against a default in the financial markets. That default often was the failure of an institution. While originally used as counterparty insurance, they became a highly efficient way to short an institution – that is, by entering into a swap where one paid a relatively small premium but would receive a large payout on failure – and do so in a way that was overt and potential self-fulfilling. The reporting of spreads in CDS acted as a daily confidence score, and as spreads widened, the underlying stocks fell in price, liquidity dried up, and further damage was done.

CDS markets were illiquid and therefore susceptible to large swings when trading moved in only one direction.

- Mark-to-market accounting has considerable virtues, but works best in a liquid, stable market when the asset to be valued is actively traded. Alternatively, when there is no market at all, accounting rules permit the holder to use cash-flow valuations in lieu of market prices. Mark-to-market accounting presents problems when there is panic selling, and firms feel they must mark their portfolios to those deflated market prices. CDOs and many other fixed-income instruments became illiquid, and became even more illiquid as the crisis progressed. Margin calls and liquidity pressures at investment banks forced them to sell at any price – generally, a very low, fire sale price. Once a fire sale price had been established, other institutions felt the need to mark their corresponding assets down to that price, triggering further margin calls, further sales, and further drops in prices. The market began to anticipate this downward cycle, and question companies or structures that would become subject to it, in a self-fulfilling prophesy.
- As asset prices fell, CDS spreads for affected institutions ballooned, as did traditional short-selling, using borrowed shares of the institution’s stock. Short sellers had an additional, potent vehicle to speculate in rumors of further trouble and foment broader talk of crisis.
- Finally, just as high ratings from the rating agencies had enabled and accelerated the marketing and sale of securitized assets, so did ratings downgrades accelerate their implosion. Many investors, such as pension funds, asset management funds and mutual fund companies were required to hold only investment-grade assets – with an investment-grade rating from a rating agency being the sole definition of “investment grade” – so downgrades became a legally mandated run on the affected instrument or institution.
- Furthermore, monoline insurers had expanded their business to insure CDOs, mortgage securities and other securities, but did so with little consideration of the risks inherent in the business and failed to establish adequate capital reserves to weather a housing collapse. As the securities they had insured began to lose value in an illiquid market following the collapse of home prices, these insurers suffered ratings downgrades, beginning in January 2008. This caused downgrades of the structures they insured, and the system was further destabilized.

Before closing this chapter of the crisis, I should say a word about Bank of America’s experience. At Bank of America Securities, our sales and trading division, trading account losses were \$5.9 billion in 2008, driven by losses related to CDO exposure and the continuing impact of the market disruptions. These losses were significant, but not debilitating, and we never experienced a liquidity crisis.

Of course, for us the greatest risk came from our acquisition of Merrill Lynch. We announced the acquisition of Merrill Lynch in an all-stock deal on September 15, 2008. The details of that transaction and its negotiation are widely known, but suffice it to say that as losses at Merrill Lynch accelerated in mid-December 2008 due to an unexpected downturn in market conditions, Bank of America grew concerned and considered abandoning the transaction and not proceeding to close; after discussions regarding government support for the transaction, the acquisition closed on January 1, 2009.

Bank of America’s acquisition of Merrill Lynch is proving a success. First, the acquisition has provided benefits to Bank of America customers. A stable Merrill Lynch could get back to the

business of providing its services to customers. Second, a stable Bank of America-Merrill Lynch has provided valuable earnings to the company at a time of high losses in consumer lending. Finally, the taxpayers have also benefited – from a stronger financial system, and more directly from the financial return they received from the investment.

Global Credit Crisis

The financial crisis spread far beyond the investment banks that underwrote and held mortgage-backed securities, destabilizing financial institutions and non-financial corporations across the globe that had nothing to do with the U.S. mortgage market. Note that the global credit crisis did not neatly follow the mortgage crisis and then the investment banking in crisis in turn; they overlapped in time and reinforced each other.

Widespread credit disruptions began after BNP Paribas suspended redemptions on three investment funds on August 9, 2007, and credit markets were highly unsettled for the rest of 2007 and 2008.

Also, over time, those like AIG who collected the premiums on CDS began to face the prospect of having to pay on the insurance, undermining investor confidence in those firms.

Another large risk to the system came from money market funds, which held trillions of dollars in commercial and personal cash, and were viewed as riskless as to principal. Some funds, in an attempt to pay a higher yield, had invested in entities holding mortgage-related assets, including SIVS, and also had exposure to financial obligations on commercial paper. Those funds began experiencing losses that created the risk of eating into principal, and pushing the net asset value of the funds below the traditional \$1 per share. Nervous investors began to flee such funds, forcing the funds to sell assets to fund redemptions; these sales further depressed prices in those assets.

These problems on the liability side of money market funds created more significant problems on the asset side. Money market funds were the dominant purchasers of commercial paper – basically short-term debt – issued by American corporations of all type. As money market funds were forced to shrink their assets, the demand for corporate paper shrunk.

Between 2007 and 2009, numerous fund managers, including Bank of America, supported their cash funds, purchasing illiquid assets and providing support for these funds. We provided more than \$2.1 billion in support to our funds. But problems continued, as investors began to fear that money market funds would not be able to sustain a net asset value of \$1 per share. As a result investors redeemed their shares in those funds and shifted their assets to money market funds that held treasuries or to bank deposits.

For financial markets, September 2008 was a very scary time, and the closest the system came to collapse. On September 15, Lehman Brothers failed, and Merrill Lynch was acquired by Bank of America. On September 16, the Federal Reserve announced a facility to lend AIG up to \$85 billion, in recognition that it was on the brink of failure and that such a failure would have seismic consequences, given its role in the CDS market, among others.

And also on September 16, the net asset value of the Reserve Primary Money Fund fell below \$1, also known as “breaking the buck.” This development had immediate and serious consequences, as investors accelerated their flight from money market funds, provoking a funding crisis for corporate America.

While much attention has been focused on the TARP investment made by the Treasury Department, I believe other actions, which are far less known, were at least as significant in terms of stabilizing the system. For by September 2008, the issue was a full liquidity crisis.

- On September 14, the Federal Reserve Bank of New York expanded the collateral eligible for pledging to its Primary Dealer Credit Facility.
- On September 19, the Treasury Department announced that it would guarantee investments in money market mutual funds, in return for a fee paid by the fund sponsor.
- On September 19, the Federal Reserve announced the creation of its Asset-backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF) to fund bank purchases of asset-backed commercial paper from money market funds.
- On September 21, the Federal Reserve approved applications by Goldman Sachs and Morgan Stanley to become bank holding companies.

As noted, in November, Treasury injected preferred stock into the nation's largest 19 largest banks through the Troubled Asset Relief Program, or TARP – a decision that will be debated for a generation. We believe the creation of the TARP was an important step to restore confidence in our financial and prevent systemic consequences that would have affected every company and individual in the country. We in the financial services industry are humbled that such support was needed, and grateful that it was provided.

These actions were critical to restoring liquidity and restoring confidence in the financial system.

Recession

Finally, we have endured a severe recession. While some would say that the financial crisis caused the recession, I think the causal relationship is more complicated. U.S. economic growth in the 2000s was funded to a large extent by home price appreciation, and the ability of homeowners to leverage equity in their homes for consumer spending. Home price appreciation meant more room for spending.

Home price appreciation fed on itself, and was assisted by low interest rates and the expectation of continued low interest rates. As a result, homeownership levels rose to historically unprecedented levels, as did the percentage of Americans' wealth held in their homes. And so did the number of people whose job depended on home construction. When prices unexpectedly stalled and then began to collapse, there was not only an investment banking crisis and ultimately a credit crisis, but as an economic matter, an important source of consumer spending and an important source of American jobs were cut off.

The financial crisis had a significant impact on the economy. Disruptions in the commercial paper market for businesses abruptly curtailed liquidity for many institutions and for others made them leery of borrowing for investment, and more likely to hold retained earnings as liquidity rather than reinvesting them in the business. Financial firms, weakened and facing higher capital requirements, have been less able to lend at low rates. As the recession deepened, the impact on individual consumers became increasingly severe.

For Bank of America, the greatest losses over the past year have come in our non-mortgage businesses. We have lost more than \$4.3 billion on credit card and other unsecured loans through the first nine months of 2009 – far more than we have lost on trading in mortgages or leveraged

loans, but a direct reflection of the crisis experienced by consumers. Our losses are directly linked to the rising unemployment and decreased economic activity that has reduced personal incomes for American consumers.

Lessons Learned

About Banking

We as bankers have learned some hard lessons from the recent financial crisis. First and foremost is humility: at its core, our job is to manage risk, but many banks made business judgments that managed risk poorly. But there were more discrete lessons as well.

- Credit must start with sound underwriting, and rating agencies are no substitute for quality loan officers and diligent and independent risk analysts. Credit underwriting must reflect the risks created by too much consumer leverage, which was apparent in this crisis. Underwriting should include not just a focus on the borrower, but also consideration of macro factors and, yes, we must strive to identify “bubbles” and understand their impact on borrower performance under stress.
- Leverage matters. For institutions, leverage is a potential source of instability. In retrospect, it is difficult to understand how markets and regulators could tolerate leverage of 40-1 or even 60-1 in our largest investment banks. For consumers, leverage matters too, as it is the basis for sound underwriting. An economy built on spending or speculation cannot be as stable as one built on production.
- Liquidity matters just as much. Liquidity allows an institution to meet margin calls, fund redemptions, or pay depositors without having to sell illiquid assets. We carefully monitor a measure of how long we could operate without access to market funding.

That said, the banking industry is one for confidence, and there is no substitute for the discount window in the event of a crisis, when creditors become highly risk averse and even irrational. The costs of foregoing that option – basically, the elimination of any leverage – would have devastating and ongoing consequences for future economic growth and consumer welfare. Finding the right balance here, or the right capital levels to avoid overly constraining economic growth is critical.

Liquidity matters in another way as well. Products like CDOs carry liquidity risk as well, and we have learned that such risk needs to be considered right along with credit risk. We cannot assume that products or structures will continue to behave in a crisis the way they have behaved in good times.

- Simplicity in financial products is a virtue. Investors, borrowers and bankers need to ensure that we all understand the risks inherent in loan products so all parties can make sound decisions based on those risks.
- Monoline businesses come with significant risks. For the second time in a generation we have watched the demise of the thrift industry (this time accompanied by the death of the mortgage GSE industry), with enormous costs to the taxpayer. Monoline investment banks fared no better. Not all universal banks did well, but as a group they did much better.

- Compensation incentives are important and must better match the duration of the risk taken to produce a profit. At Bank of America, we have made changes along these lines.
- The system is interconnected in ways that are difficult to foresee. In stress testing or in basic risk analysis, we must consider the possibility that risks that appear independent may well be correlated.

About Regulation

We have also learned some vital lessons about regulation of financial activities.

First, we cannot allow regulatory arbitrage, as capital will flow where it can be leveraged the most, and the worst practices will occur where there is least risk of detection.

- Subprime mortgage origination gravitated to unsupervised, state-licensed brokers and lenders.
- Independent investment banks maintained three to four times the leverage of bank holding companies.
- Mortgage risk became concentrated in GSEs whose capital requirements were a fraction of that of commercial banks, which (along with federally subsidized debt issuance) made them the low-cost holder of mortgages and concentrated risk in them.

Second, static measures of bank capital are limited in their utility. We have known for some time that capital is a lagging indicator of problems, as it is depleted only after the losses occur. For sophisticated banks, ongoing stress testing is an equally important method of assessing capital adequacy.

Third, as noted, there will always be need for a government liquidity backstop in case of a crisis.

Fourth, capital is important, and the leverage of investment banks was untenable. While requirements of 16 to 1 for bank holding companies may have been closer to the ballpark, bank holding companies should and undoubtedly will hold more capital going forward, even as we work to deploy capital wisely to drive economic growth.

Fifth, current accounting rules are pro-cyclical and extremely unwise. One example is loan loss reserves. Reserves function like capital in the sense that they protect debt holders and ultimately taxpayers from loss. Any rational policy would encourage banks to build reserves during good times and draw them down in bad times.

Accounting rules, however, allow banks to build reserves only to cover losses expected over the short term, and prohibit banks from building more than immediately necessary. The concern is that reserves will be used as a general reserve to smooth earnings. Thus, banks are *prohibited* from building reserves in *good* times and *required* to build them in *bad* times, when the markets make it most difficult to do so.

The easy compromise is for banks to hold extra reserves, but clearly and fully disclose what is extra and what is forecast to be necessary.

Sixth, rules for resolving complex financial institutions must be clear, and globally consistent. We ultimately will need cross-border agreement on what jurisdiction has first claim on what assets.

Seventh, while clear rules are important, there must be flexibility in any resolution regime, as we can never write rules on liquidity or resolution that will cover every crisis, and cannot have a Lehman-like situation where the regulators conclude they do not have the power to do what they believe is in the best interest of the system, and ultimately the economy.

Eighth, it would be helpful to have a systemic risk regulator, but we should not overestimate the ability of government officials to anticipate and correct systemic problems. CDS, the combination of mark-to-market and short selling – very few in the markets foresaw these and other problems. Rather than trying to spot black swans, regulatory efforts may be more constructively directed at developing systems to prevent any crisis from metastasizing.

Ninth, too-big-to-fail is a legitimate problem, but not well understood and somewhat overstated. Obviously, I am somewhat biased on this front, as Bank of America will be on anyone's list of TBTF institutions. But some of the proposals seem to be contrary to what we have just learned.

The institutions that effectively opted out of the Gramm-Leach Bliley Act's repeal of Glass-Steagall and remained monoline investment banks (or mortgage lenders) are the ones that failed: Bear, Lehman, WaMu, Wachovia (which had a capital markets business but ultimately was brought down by Golden West, a thrift). J.P. Morgan Chase was relatively healthy and acquired Washington Mutual and Bear Stearns; we were relatively healthy and acquired Countrywide and Merrill Lynch. Those arguing for a return of Glass-Steagall are effectively arguing that Bear Stearns was a more stable entity than JP Morgan Chase. I don't see how that is tenable. Bank holding companies clearly proved the most durable structure in the current crisis. Indeed, one could argue persuasively that the mistake in Gramm-Leach-Bliley was in not *requiring* investment banks to affiliate with banks and become regulated bank holding companies.

And this is just one side of the equation. The other is: what structure serves American businesses, and ultimately the American consumer and economy, better: financial firms able to offer an integrated suite of financing options, or balkanized firms that do not? We believe that a company looking to choose among loans, debt financing, and equity underwriting options is best served by having each firm able to offer all of those options.

To develop sound policies, I believe we need to go carefully examine the policy questions behind the acronym "TBTF." I can think of three:

The initial concern is that TBTF creates moral hazard, as large banks can leverage themselves unduly given that markets are willing to lend on non-market terms, on the assumption they will be bailed out. This is a legitimate concern, and justifies capital and liquidity requirements to restrain the ability to operate with greater leverage and less liquidity than the market would ordinarily require.

It is also worth noting, though, that the moral hazard here, while certainly existent, is not terribly distorting. Obviously, the inability banks during the recent crisis to issue bank debt of any tenor longer than overnight shows investors they did not take a lot of comfort from TBTF – and this was *after* bondholders at Bear had been bailed out. CDS prices continue to indicate real risk to investors in large banks. Large bank debt pricing is extremely sensitive – one might even say unduly sensitive -- to ratings – something one wouldn't expect if the markets were assuming TBTF.

The second concern is that taxpayers will lose money when a TBTF institution is bailed out. Here, at least for the banking industry, recent history is comforting. Bank of America alone has paid \$2.73 billion in dividends, and none of the original nine TARP banks has imposed any losses on taxpayers. Those same nine large banks have paid tens of billions of dollars in special assessments to pay for the resolution costs of small banks. We certainly appreciate the assistance we received and are pleased that we've been able to pay it back in full with interest.

Finally, we need to consider the downside of debilitating larger financial firms, by requiring them to shed economies of scale or permitting them to service only part of a corporate customer's needs. It is worth reminding ourselves that the U.S. has the most banks of any country in the world, and the smallest concentration of assets in its largest banks. All other major countries allow the affiliation of bank lending with underwriting and dealing in securities. This is no accident, as there is considerable evidence, in no way inconsistent with the recent crisis, that there are economies of scale in banking, and that corporations seeking financing prefer an integrated model. In an increasingly global environment, our major competitors for any corporate assignment include foreign banks, and we need to ensure that the U.S. financial services system – and in our case, the approximately 300,000 associates employed by Bank of America – are able to compete for that business.

There is of course a ready, though not simple alternative to shrinking or under-leveraging our strongest financial institutions. And that starts with recognizing that “interconnectedness” and not “bigness” is what led to the need for taxpayer bailouts. Washington Mutual was an extraordinarily large institution, and resolved in due course. AIG did not receive what may prove to be, along with Fannie Mae and Freddie Mac, the most expensive bailout to American taxpayers because of the large asset size of its insurance divisions; it received the bailout because of the counterparty credit risks imposed by its far smaller financial products division.

We can do much to diminish the risks and distortions of too big to fail by carefully considering issues like resolution and liquidity and the potential for products like CDS to increase contagion risk. I hope this Commission will be an important part of that work.

Thank you again for the opportunity to express my opinions on this important subject. I look forward to answering any questions the Commission might have.