Excerpts from
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The Gathering Storm Arrived with a Vengeance …

In 2008, Bear Stearns collapsed; Lehman Brothers declared bankruptcy; Fannie Mae and Freddie Mac were placed into government conservatorship; the government assumed majority ownership of AIG; Merrill Lynch sold itself to Bank of America; Wells Fargo took over a struggling Wachovia; IndyMac and WaMu went into receivership by the Federal Deposit Insurance Corporation; Countrywide and the U.S. mortgage business virtually collapsed; the two remaining major investment banks, Goldman Sachs and Morgan Stanley, became bank holding companies; around the globe, French, British, Swiss and German banks were rescued by their governments; and the world entered the sharpest, most globalized downturn since the Great Depression.

We felt then that accepting the TARP funds was the right thing to do for the U.S. financial system…

The government acted quickly and boldly – taking unorthodox steps to try to right the ship. It had to act with urgency while dealing with complex and rapidly changing problems that did not lend themselves to simplistic solutions. While we will never actually know, we believe, as many economists and analysts do, that without these and other actions the government has taken to date, things could have been much worse. So while it is easy to criticize the timing, marketing or consistency of the effort – we also recognize how hard it is to act boldly in difficult and dangerous times. We should remind ourselves of what President Theodore Roosevelt expressed nearly a century ago: "It is not the critic who counts; not the man who points out how the strong man stumbles, or where the doer of deeds could have done them better. The credit belongs to the man who is actually in the arena, whose face is marred by dust and sweat and blood; who strives valiantly; who errs, who comes short again and again, because there is no effort without error and shortcoming; but who does actually strive to do the deeds; who knows great enthusiasms, the great devotions; who spends himself in a worthy cause; who at the best knows in the end the triumph of high achievement, and who at the worst, if he fails, at least fails while daring greatly, so that his place shall never be with those cold and timid souls who neither know victory nor defeat." We hope that our leaders will continue to be bold and brave in seeking solutions to these once-in-a-generation problems.

We think the government acted boldly in a very tough situation, the outcome of which could have possibly been far worse had it not taken such steps.

Banks are lending, and the TARP is probably helping.

Fundamental Causes and Contributions to the Financial Crisis

After Lehman's collapse, the global financial system went into cardiac arrest. There is much debate over whether Lehman's crash caused it – but looking back, I believe the cumulative trauma of all the aforementioned events and some large flaws in the financial system are what caused the meltdown. If it hadn't been Lehman, something else would have been the straw that broke the camel's back. The causes of the financial crisis will be written about, analyzed and subject to historical revisions for decades. Any view that I express at this moment will likely be proved incomplete or possibly incorrect over time. However, I still feel compelled to attempt to do so because regulation will be written soon, in the next year or so, that will have an enormous impact on our country and our company. If we are to deal properly with this crisis moving forward, we must be brutally honest and have a full understanding of what caused it in the first place. The strength of the United States lies not in its ability to avoid problems but in our ability to face problems, to reform and to change. So it is in that spirit that I share my views. Albert Einstein once said, "Make everything as simple as possible, but not simpler." Simplistic answers or blanket accusations will lead us astray. Any plan for the future must be based on a clear and comprehensive understanding of the key underlying causes of – and multiple contributors to – the crisis, which include the following:

- The burst of a major housing bubble
- Excessive leverage pervaded the system
- The dramatic growth of structural risks and the unanticipated damage they caused
- Regulatory lapses and mistakes
- The pro-cyclical nature of virtually all policies, actions and events
- The impact of huge trade and financing imbalances on interest rates, consumption and speculation

Each main cause had multiple contributing factors. As I wrote about these causes, it became clear to me that each main cause and the related contributors could easily be rearranged and still be fairly accurate. It was also surprising to realize that many of the main causes, in fact, were known and discussed abundantly before the crisis. However, no one predicted that all of these issues would come together in the way that they did and create the largest financial and economic crisis of our lifetime. Even the more conservative of us, and I consider myself to be among them, looked at the past major crises (the 1974, 1982 and 1990 recessions; the 1987 and 2001 market crashes) or some mix of them as the worst case events for which we needed to be prepared. We even knew that the next one would be different – but we missed the ferocity and magnitude that was lurking beneath. It also is possible that had this crisis played out differently, the massive and multiple vicious cycles of asset price reductions, a declining economy and a housing price collapse all might have played out differently – either more benignly or more violently. It is critical to understand that the capital markets today are fundamentally different than they were after World War II. This is not your grandfather's economy. The role of banks in the capital markets has changed considerably. And this change is not well-understood – in fact, it is fraught with misconceptions. Traditional banks now provide only 20% of total lending in the economy (approximately $14 trillion of the total credit provided by all financial intermediaries). Right after World War II, that number was almost 60%. The other lending has been provided by what many call the "shadow banking" system. "Shadow" implies nefarious and in the dark, but only part of this shadow banking system was in the dark (i.e., SIVs and conduits) – the rest was right in front of us. Money market funds, which had grown to $4 trillion of assets, directly lend to corporations by buying commercial paper (they owned $700 billion of commercial paper). Bond funds, which had grown to approximately $2 trillion, also were direct buyers of corporate credit and securitizations. Securitizations, which came in many forms (including CDOs, collateralized loan obligations and commercial mortgage-backed securities), either directly or indirectly bought consumer and commercial loans. Asset securitizations simply were a conduit by which investment and commercial banks passed the loans onto the ultimate buyers. In the two weeks after the Lehman bankruptcy, money market and bond funds withdrew approximately $700 billion from the credit markets. They did this because investors (i.e., individuals and institutions) withdrew money from these funds. At the same time, bank lending actually went up as corporations needed to increasingly rely on their banks for lending. With this as a backdrop, let's revisit the main causes of this crisis in more detail.

A. <u>The burst of a major housing bubble</u>.

U.S. home prices have been appreciating for almost10 years – essentially doubling over that time. While some appreciation is normal, the large appreciation, in this case, and the ultimate damage it caused were compounded by the factors discussed below.

New and poorly underwritten mortgage products (i.e., option ARMs, subprime mortgages) helped fuel asset appreciation, excessive speculation and far higher credit losses.
As the housing bubble grew, increasingly aggressive underwriting standards helped drive housing price appreciation and market speculation to unprecedented levels. Poor underwriting standards (including little or no

verification of income and loan-to-value ratios as high as 100%) and poorly designed new products (like option ARMs) contributed directly to the bubble and its disastrous aftermath.

Mortgage securitization had two major flaws.
In many securitizations, no one along the chain, from originator to distributor, had ultimate responsibility for the results of the underwriting. In addition, the poorly constructed tranches of securitizations that comprised these transactions effectively converted a large portion of poorly underwritten loans into Triple A-rated securities. Clearly, the rating agencies also played a key role in this flawed process. These securitizations ended up in many forms; the one most discussed is CDOs. Essentially, these just added a lot more fuel to the fire.

While most people are honorable, excess speculation and dishonesty were far greater than ever seen before, on the part of both brokers and consumers.
The combination of no-money-down mortgages, speculation on home prices, and some dishonest brokers and consumers who out-and-out lied will cause damage for years to come. This, in no way, absolves the poor underwriting judgments made by us and other institutions, and it certainly doesn't absolve anyone who mis-sold loans to consumers.

B. <u>Excessive leverage pervaded the system</u>.

Over many years, consumers were adding to their leverage (mostly as a function of the housing bubble), some commercial banks increased theirs, most of the U.S. investment banks dramatically increased theirs and many foreign banks had the most leverage of all. In addition, increasing leverage appeared in:

- Hedge funds, many using high leverage, grew dramatically over time. Some of that leverage was the result of global banks and investment banks lending them too much money.
- Private equity firms were increasingly leveraging up their buyouts. Again, some banks and the capital markets lent them too much money.
- Some banks (and other entities) added to their leverage by using off-balance sheet arbitrage vehicles, like SIVs and leveraged puts.
- Nonbank entities, including mortgage banks, CDO managers, consumer and commercial finance companies, and even some bond funds, all increased their leverage over time.
- Even pension plans and universities added to their leverage, often in effect, by making large "forward commitments." Basically, the whole world was at the party, high on leverage – and enjoying it while it lasted.

C. <u>The dramatic growth of structural risks and the unanticipated damage they caused</u>.

I believe there are four structural risks or imbalances that grew and coalesced to cause a "run on the bank." But this was not a traditional bank run – it was a run on our capital markets, the likes of which we had never experienced. After Lehman's bankruptcy, many parts of our capital markets system stopped providing any capital to the market at all. If the crisis had unfolded differently, then perhaps the events that followed would not have occurred. Surely no one deliberately built a system with these fundamental flaws and imbalances. Clearer heads will understand that much of this was not malfeasance – our world had changed a lot and in ways that we didn't understand the full potential risk. But when the panic started, it was too much for the system to bear.

Many structures increasingly allowed short-term financing to support illiquid assets.
In essence, too much longer-term, non-investment grade product was converted into shorter-term Triple A-rated product. Some banks, hedge funds, SIVs and CDOs were using short-term financing to support illiquid, long-term assets. When the markets froze, these entities were unable to get short-term financing. As a result, they

were forced to sell these illiquid assets. One of the functions of banking and the capital markets is to intermediate between the needs of investors and issuers. This triggers a normal conversion, either directly or indirectly (through securitizations) of longer-term, illiquid assets held by the issuers, who need to finance the business into the shorter-term, higher-grade product that most investors want. Clearly, over time, this imbalance had grown too large and unsupportable.

Money market funds had a small structural risk, which became a critical point of failure.
Money market funds promise to pay back 100% to the investor on demand. Many money market funds invested in 30- to-180-day commercial paper or asset-backed securities that under typical circumstances could be sold back at par. In normal times, investors demanded their money in fairly predictable ways, and funds were able to meet their demands. Over time, money market funds grew dramatically to exceed $4 trillion. After Lehman collapsed, one money fund in particular, which held a lot of Lehman paper, was unable to meet the withdrawal demands. As word of that situation spread, investors in many funds responded by demanding their money. In a two-week period, investors pulled $500 billion from many money funds, which were forced to sell assets aggressively. To raise liquidity, these money funds essentially were forced to sell assets. As investors moved away from credit funds and into government funds, the banks simply were unable to make up the difference. This became one more huge rupture in the dike.

Repo financing terms got too loose, and too many illiquid assets were repo'ed.
Over time, in those markets where financial companies financed their liquid assets, financial terms had become too lax. For example, to buy non-agency mortgage securities, financial institutions only had to put up 2%-5% versus a more traditional 15%-25%. The repo markets also had begun to finance fairly esoteric securities, and when things got scary, they simply stopped doing so. In the two weeks after Lehman's bankruptcy, more than $200 billion was removed from this type of financing, by both investors and banks. Once again, financial institutions had to liquidate securities to pay back short-term borrowing – thus, another rupture in the dike.

Investors acted wisely to protect themselves, but the system couldn't handle them all doing it at the same time.
Individual investors, corporations, pension plans, bond and loan funds, money market funds and others – all acted in their own self-interest, and all individually acted wisely. But collectively, they caused enormous flows out of the banking and credit system. Regardless of whether the funds came out of a bank, a money fund, or a bond or loan fund, the fact remains that the cumulative result was a severe shortage of necessary credit that was removed from the system.

Clearly, things had changed. In the past, regulators had focused on preventing a systemic collapse of the main intermediaries in the financial system; i.e., the banks. In this new world, however, we need to discuss how to protect ourselves not only from runs on banks but also from runs on other critical vehicles in the capital and financial markets.

D. <u>Regulatory lapses and mistakes</u>.

With great hesitation, I would like to point out that mistakes also were made by the regulatory system. That said, I do not blame the regulators for what happened. In each and every circumstance, the responsibility for a company's actions rests with us, the CEO and the company's management. Just because regulators let you do something, it does not mean you should do it. But regulators have a responsibility, too. And if we are ever to get this right, it is important to examine what the regulators could have done better. In many instances, good regulation could have prevented some of the problems. And had some of these problems not happened, perhaps things would not have gotten this bad.

Unregulated or lightly regulated parts of the market contributed to the crisis.
I've already discussed some of the flaws with money market funds and hedge funds – the latter were not regulated, and the former were lightly regulated. In addition, there are two large segments, among others, that – had they been regulated – could have helped the system avoid some problems.

- Much of the mortgage business was largely unregulated. While the banks in this business were regulated, most mortgage brokers essentially were not. In fact, no major commercial bank that was regulated by the OCC wrote option ARMs (possibly the worst mortgage product). A very good argument could be made that the lower standards of the unregulated parts of the business put a lot of pressure on those players in the regulated part of the business to reduce their standards so they could compete. In this case, bad regulation trumped good regulation.

- Insurance regulators essentially missed the large and growing one-sided credit insurance and credit derivative bets being made by AIG and the monocline insurers. This allowed these companies to take huge one-sided bets, in some cases, by insuring various complex mortgage securities.

Basel II, which was adopted by global banks and U.S. investment banks, allowed too much leverage.
It is quite clear now that the second of the Accords by the Basel Committee on Banking Supervision (known as Basel II), published in 2004, was highly flawed. It was applied differently in different jurisdictions, allowed too much leverage, had an over-reliance on published credit ratings and failed to account for how a company was being funded (i.e., it allowed too much short-term wholesale funding). In 2004, the five independent U.S. investment banks adopted Basel II under the jurisdiction of the Securities and Exchange Commission (this was not allowed by the banks regulated by the Federal Reserve or the OCC, which remained under Basel I). The investment banks jettisoned prior conservative net capital requirements and greatly increased their leverage under Basel II. And the rest is history.

Perhaps the largest regulatory failure of all time was the inadequate regulation of Fannie Mae and Freddie Mac.
The extraordinary growth and high leverage of Fannie Mae and Freddie Mac were well-known. Many talked about these issues, including their use of derivatives. Surprisingly, they had their own regulator, which clearly was not up to the task. These government-sponsored entities had grown to become larger than the Federal Reserve. Both had dramatically increased their leverage over the last 20 years. And, amazingly, a situation was allowed to exist where the very fundamental premise of their credit was implicit, not explicit. This should never happen again. Their collapse caused damage to the mortgage markets and the financial system. And, had the Treasury not stepped in, it would have caused damage to the credit of the United States itself.

Too many regulators – with overlapping responsibilities and inadequate authorities – were ill-equipped to handle the crisis.
Our current regulatory system is poorly organized and archaic. Overlapping responsibilities have led to a diffusion of responsibility and an unproductive competition among regulators, which probably accelerated a race to the bottom. Many regulators also did not have the appropriate statutory authority (through no fault of their own) to deal with some of the problems they were about to face. One large, glaring example revealed by the collapse of Bear Stearns and Lehman was the lack of a resolution process in place to deal with failure of investment banks. If commercial banks fail, the FDIC can take them over. This was not the case with investment banks. In addition, a resolution process needs to be in place for large, global financial companies that operate in many jurisdictions and use many different regulatory licenses.

E. <u>The pro-cyclical nature of virtually all policies, actions and events</u>.

In a crisis, pro-cyclical policies make things worse. I cannot think of one single policy that acted as a counterbalance to all of the pro-cyclical forces. Although regulation can go only so far in minimizing the impact of pro-cyclical forces in times of crisis, we still must be aware of the impact they have. For example: • Loan loss reserving causes reserves to be at their lowest level right when things take a turn for the worse. Therefore, as a crisis unfolds, a bank not only faces higher charge-offs but also has to add to its level of reserves, depleting precious capital.

- Although we are proponents of fair value accounting in trading books (a lot of the mark-to-market losses that people complained about will end up being real losses), we also recognize that market levels resulting from large levels of forced liquidations may not reflect underlying values. Certain applications of fair value accounting can contribute to a downward spiral where losses deplete capital, and lower capital causes people to respond by selling more, at increasingly lower values.
- The rating agencies made mistakes (like the rest of us) that clearly helped fuel a CDO and mortgage debacle. They also, in the midst of a crisis, continually downgraded credits. Lower ratings, in turn, required many financial institutions to raise more capital, thus adding to the vicious cycle.
- In bad times, the market itself demands both an increase in capital and more conservative lending. We may not be able to change this phenomenon, but there are steps we can take to ensure that the system is better prepared for it.
- Financing arrangements allow the most leverage in good times, but they force a dramatic reduction in leverage in bad times.
- As capital markets volatility increases, Basel II capital calculations and many risk management tools, like Value-at-Risk, demand that more capital be held to own securities or loans.

F. <u>The impact of huge trade and financing imbalances on interest rates, consumption and speculation</u>.

I suspect when analysts and economists study the fundamental causes of this crisis, they will point to the enormous U.S. trade deficit as one of the main underlying culprits. Over an eight-year period, the United States ran a trade deficit of $3 trillion. This means that Americans bought $3 trillion more than they sold overseas. Dollars were used to pay for the goods. Foreign countries took these dollars and purchased, for the most part, U.S. Treasuries and mortgage-backed securities. It also is likely that this process kept U.S. interest rates very low, even beyond Federal Reserve policy, for an extended period of time. It is likely that this excess demand also kept risk premiums (i.e., credit spreads) at an all-time low for an extended period of time. Low interest rates and risk premiums probably fueled excessive leverage and speculation. Excess consumption could be financed cheaply. And adding fuel to the fire, in the summer of 2008, the United States had its third energy crisis – further imbalancing capital flows. There have been times when large imbalances – such as those in trade – sort themselves out without causing massive global disruption. However, it is bad planning and wishful thinking to assume that this will always be the case. These imbalances shouldn't be allowed to get that large – they create too much potential risk. Many other factors may have added to this storm – an expensive war in Iraq, short-selling, high energy prices, and irrational pressure on corporations, money managers and hedge funds to show increasingly better returns. It also is clear that excessive, poorly designed and short-term oriented compensation practices added to the problem by rewarding a lot of bad behavior. The modern financial world has had its first major financial crisis. So far, many major actors are gone: many of the mortgage brokers, numerous hedge funds, Wachovia, WaMu, Bear Stearns, Lehman and many others. Some of the survivors are struggling, particularly as we face a truly global, massive recession – and it still is not over.

<u>The Future of Our System</u>

A. The need for a systemic regulator with much broader authority.

B. The need to simplify our regulatory system.

C. The need to regulate the mortgage business — including commercial mortgages — in its entirety.

D. The need to fix securitization.

E. The need to fix Basel II — leading to higher capital ratios but a more stable system.

F. The need to get accounting under control.

G. The need for appropriate counter-cyclical policies.

H. The need for policies in health care, pensions, energy and the environment, infrastructure and education that will serve us well over time.