

# International Monetary Fund

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## The Financial Crisis: Act II, The Way Forward

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# The Financial Crisis: Act II

## The Way Forward

Warren Coats<sup>i</sup>  
March 21, 2009

A combination of factors are producing huge losses to mortgage lenders that threaten the collapse of a large share of the financial sector.<sup>1</sup> The consequences for the real economy could rival the Great Depression.<sup>2</sup> The potential losses of private sector and government income come on top of staggering unfunded liabilities of the government for Medicare and Social Security payments over the next twenty to thirty years that will be very difficult if not impossible to pay for. In response to the immediate crisis, governments around the world are intervening dramatically to save their banking systems with deposit and lending guarantees and the injection of tax payer funds to bolster banks' capital in an effort to reverse the abrupt and damaging curtailment of normal bank lending that has pushed much of the world into recession. While these unusual steps may have been necessary to avoid still more catastrophic losses to the economy and government revenue, they carry significant risks of their own when not carefully designed to minimize moral hazard and to provide explicitly limited duration.

While a collapse of the financial sector would dramatically worsen the recession that the U.S. and Europe are now in, the recession itself makes it more difficult to stabilize financial sectors. As noted by Alex J. Pollock, a resident fellow at the [American Enterprise Institute](#), government policy is "trying to stop an adverse feedback loop in which the financial problems make the recession worse and the recession makes financial problems worse."<sup>3</sup> Nonetheless, monetary and fiscal measures to moderate the severity and duration of the recession should not prevent the macroeconomic adjustments and the healthy shakeout of inefficient firms that the economy needs to remain efficient. The rules governing the government's massive interventions need to be clarified along with an explicit exit plan. The uncertainty being created by the government over who might get a tax payer bailout is impeding the economy's recovery. This brief focuses on the policy options for stabilizing the financial section.

### Summary Conclusions

- Monetary and fiscal policy should not prevent housing and other price and macroeconomic adjustments (more household and government saving and more investment and net exports). Overly rapid deleveraging and increases in savings rates, however, will worsen the recession. The Federal Reserve's top priority is,

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<sup>1</sup> For an excellent discussion of factors behind subprime defaults see Lawrence H. White, "How Did We Get into This Financial Mess?" CATO Institute Briefing Papers No 110, November 18, 2008.

<sup>2</sup> *The Economist* reports on research that relates more serious depressions to financial crises in, ["Diagnosing Depression"](#) January 3, 2009, page 57

<sup>3</sup> [Neil Irwin and Dina ElBoghdady, "Bernanke Stirs Pot on Home Loan Help"](#), *The Washington Post*, December 5, 2008, Page D01.

quite correctly, to restore normal, prudent credit flows, without which the recession will be far worse than necessary.

- The Federal Reserve has the tools needed to fulfill its lender of last resort function and provide whatever liquidity is needed to avoid a supply constrained credit crisis. It has used and should continue to use these tools imaginatively and aggressively. However, banks should never be forced or pressured to lend when they judge the risks to depositors' and shareholders' money to be too high.
- The Treasury should address bank solvency issues. The Treasury's \$700 billion "bailout" funds under TARP either unnecessarily duplicate Federal Reserve tools and actions, or provide Treasury with powers to stabilize the financial sector with ill defined and/or ever changing policies, which have increased rather than reduced market uncertainty. TARP has opened the flood gates to demands for bailouts from anyone big enough to have political clout who is suffering from bad judgment, mismanagement, or bad luck. Government intervention and financial assistance should take place only under clear rules and criteria for assistance, both to prevent political abuse and to establish the rules of the game for investors and enterprises. These do not yet exist.
  - TARP should be used: a) to share any losses of mortgage lenders from restructuring mortgages, b) to buy "toxic" Mortgage Banked Securities (via financing Fannie Mae and Freddie Mac), and c) to guarantee all depositors and other creditors (as of January 1, 2009) of banks. Bailouts should be limited to the depositors and other creditors of banks taken over by the FDIC, i.e. after the shareholders have been wiped out.
  - Creating new mechanisms for government control of tax payer bailout money to the American Automobile industry (a car czar) is a mistake and overly politicizes the process. If assistance is justified<sup>4</sup> it should be given via a Court administered Chapter 11 bankruptcy process as was done with Fannie Mae and Freddie Mac.
  - U.S bank insolvency laws work efficiently to resolved insolvent banks. These tools should be extended to other non bank financial institutions.
- Generally the market (investors in and issuers of financial products) will know better than regulators how to fix the weaknesses that are now costing them money. The financial industry and its associations should be allowed the time needed to develop and adopt measures to overcome existing weaknesses, though regulators can play a useful coordinating, catalytic role. Some regulatory adjustments will no doubt be needed as well to correct weaknesses revealed by

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<sup>4</sup> In its December report to congress, the U.S. Treasury stated: "The objective of the Automotive Industry Financing Program (AIFP) is to prevent a significant disruption of the American automotive industry, which [sic] would pose a systemic risk to financial market stability and have a negative effect on the economy of the United States.' [http://www.treas.gov/press/releases/reports/0010508105\\_a\\_report.pdf](http://www.treas.gov/press/releases/reports/0010508105_a_report.pdf)

the current crisis, but they should be adopted by relevant regulatory bodies only after the lessons of the current crisis have been learned. New regulations risk unintended negative consequences and should be adopted cautiously. However, preliminary lessons suggest some areas of potential reform:

- Government housing policy and the role of Fannie Mae and Freddie Mac helped create the housing bubble and the collapse of mortgage underwriting standards. Housing and home ownership should not be subsidized. Fannie Mae and Freddie Mac should be gradually liquidated.
- Most subprime mortgages are performing (80%) and have benefited those home owners and the economy. Which mortgage product was used matters a great deal. Five times as many Prime Adjustable Rate Mortgages (ARMS) entered foreclosure in the third quarter of 2008 than did Fixed Rate Mortgages (FRMS). For Subprime borrowers the rate was 3 times higher for ARMS than for FRMS. The Federal Reserve has already adopted regulations intended to “prevent unfairness, deception, and abuse” in mortgage lending, which should be given time to work.<sup>5</sup>
- Agents and brokers vetting mortgage underwriting standards have no financial stake in the soundness of the mortgages they originate. The commissions for agents originating mortgages might be tied to future mortgage payments rather than to making the loan without regard for repayment.
- Short-term rather than long-term profit maximization contributed to excessive risk taking by investors betting that housing prices would continue to rise forever or at least for another year or two (house flippers, investment bankers with annual performance bonuses, etc.). Incentives should be adjusted to encourage long-run outcomes. Performance bonuses should reflect longer term results. Corporate governance should be strengthened to give investors and shareholders more control over lending policies and standards.
- Securitization and resale of loans have been beneficial developments but have weakened market enforcement and oversight of credit quality. Credit originators should be required to keep some “skin in the game.”
- Tax and regulatory policies that favor and encourage debt (leveraging) should be revised to become economically neutral (e.g., mortgage interest deductions on owner occupied homes should be eliminated).
- Credit rating agencies paid for by those they rate have a conflict of interest, use flawed models, and have been overly relied on by investors. They should be made accountable by law for their ratings and should reveal their models and the information available to them.
- Risks in many financial derivatives would be made more transparent and might be better monitored if they were listed by clearing houses or traded on exchanges. Rating agencies should be paid by the listing exchanges or clearing houses rather than by the issuer of the securities being rated.

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<sup>5</sup> ["12 CFR Part 226, Regulation Z, Truth in Lending"](#), July 30, 2008.

## Act I – How We Got Here

### ***Scene 1 – The Housing Bubble Inflates, Then Deflates***

Government and social policies to promote home ownership such as the Community Reinvestment Act of 1977 (CRA) pressured lenders to lower underwriting standards and increase lending to previously unqualified borrowers.<sup>6</sup> An abundance of world saving and easy monetary policy and the mortgage guarantees from Fanny Mae and Freddie Mac (Government Sponsored Enterprises mandated with attracting funds to mortgage lending) channeled large amounts of low cost funds to home buyers. These factors along with poorly designed land use planning restrictions in some areas increased demand for housing more than supply and prices rose rapidly. The securitization of pools of mortgages into Mortgage Backed Securities (MBSs) lowered the cost and spread the risk of mortgage lending world wide but also lowered the income (narrowed the spreads) to originators and weakened the financial incentives of agents to monitor compliance with already low underwriting standards. MBSs and other complex derivatives also made it more difficult for investors to evaluate the risks.

The quarter of a century of financial liberalization that followed the S&L crisis and taming of inflation in the early 1980 produced lower financial intermediation costs and more rapidly raising incomes for the general public. Bank lending margins and fees were squeezed. With the repeal of the Glass Steagall Act in 1999, which separated investment from commercial banking, the short-term “performance” bonus practices and very high leverage (investing borrowed money) of many investment banks began to infiltrate the more conservative culture of commercial banks.<sup>7</sup> In order to maintain earnings, Leo Tilman argues that the preceding factors lead banks to increase leverage and lower mortgage underwriting standards to levels no one believed could survive without indefinitely increasing housing prices. The increased leverage to maintain income in the face of smaller margins was not clearly seen and thus not properly priced by the market (or even by bank directors).<sup>8</sup> Bonuses based on short-term stock price performance with no clear link to future consequences of increased leverage (before which bonuses would already have been collected) further encouraged increased risk taking. Increased securitization also exacerbated principle/agent weaknesses in monitoring underwriting standards. Irrational expectations of ever increasing housing

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<sup>6</sup> “Freddie was being pushed by advocacy groups to come up with new loan products to offer to low-income and minority borrowers.” [Zachary A. Goldfarb, "Internal Warnings Sounded on Loans at Fannie, Freddie", The Washington Post, December 9, 2008 Page D01](#)

<sup>7</sup> Wall Street insiders I have discussed this with speak of a dramatic sea change in attitudes toward risk taking following adoption of the Gramm-Leach-Bliley Act in 1999, which repealed the Glass Steagall Act. The immediate performance bonus system typically found in investment banks and totally alien to most commercial banks encouraged a hit and run attitude toward taking commissions and annual bonuses with little regard for the longer term viability of the exotic instruments being created. These allegations deserve careful scrutiny.

<sup>8</sup> Leo M. Tilman, *Financial Darwinism: Create Value or Self-Destruct in a World of Risk*, John Wiley and Sons 2009

prices attracted speculators on the home ownership side as well. In addition, overly complex mortgage backed securities relied heavily on credit rating agencies with no experience with such instruments and conflicts of interest in rating them.

Gaps in supervisory coverage between the Office of the Comptroller of the Currency (OCC), which supervises all National Banks, and the Federal Reserve, which supervises bank holding companies (among other financial entities), sometimes left excessive risk taking unsupervised. The widely held assumption that the government would back up the commitments of Fanny and Freddie seemed to lower their need for capital and allowed them to borrow at lower interest rates than their competition. This allowed them to control half the market. It also meant that private speculators could take their winnings if their bets paid off while the tax payers would suffer the losses if they didn't. Players in the mortgage markets may have acted recklessly but generally they were acting rationally within the policy/regulatory framework the government provided. Widespread fraud (misrepresenting borrower qualifications), encouraged by the short-termism of investment banking, also played a role.

Housing prices couldn't and didn't continue increasing at such rates. Demand slowed at such prices. Supply caught up and exceeded demand; the stock of unsold houses rose and the bubble burst. Borrower defaults began to rise above usual rates. The market value of MBSs fell and uncertainty over how many underlying mortgages would default made it difficult to trade them even at steep discounts. By 2007 Wall Street began to realize that banks and other investors were going to absorb huge losses but the complexity and opacity of the structured financial instruments by which mortgages had been distributed to investors made it difficult to evaluate who ultimately would pay them. These developments, along with tightening monetary policy (rising interest rates), led the entire financial system to demand more liquidity to compensate for the reduced liquidity of MBSs and a loss of confidence in financial market counterparties. In mid 2007 hedge funds and other Wall Street firms gradually began to deleverage (reduce their reliance on borrowed funds to supplement investors' funds and to fund investment banks, insurance companies and others).<sup>9</sup> The cost of unsecured interbank lending skyrocketed. The TED spread (difference between the three-month London Interbank Offer Rate—LIBOR—and the risk free three-month U.S. Treasury bill rate) jumped from its usual 0.1% or so to over 4%<sup>10</sup>. Hedge funds and others began to reduce their reliance of borrowed funds (deleveraging) more rapidly.<sup>11</sup>

The collapse of housing price bubbles even larger than in the U.S. are being experienced in many countries. The UK and Spain are particularly hard hit. These bubbles also reflect the world wide glut of saving that had to be invested somewhere and very low real interest rates over much of the last quarter century and especially 2002-3.

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<sup>9</sup> Following the bankruptcy of a growing number of mortgage lenders in early 2007 with large subprime exposures (Ownit Mortgage Solutions, Mortgage Lenders Network USA, [New Century Financial](#) and twenty five other smaller lenders), the closing of two Bear Stearns hedge funds with large subprime MBSs holdings in June 2007 set off alarm bells through out the industry.

<sup>10</sup> By January 23, 2009 the TED spread had fallen to 1.0%.

<sup>11</sup> See Coats. "The U.S. Mortgage Market: the Good, the Bad and the Ugly," Association of Banks in Jordan, June 22, 2008; ["Fannie and Freddie: More Good, Bad and Ugly."](#) July 31, 2008.

Some of America's mortgage losses are also being absorbed abroad because of foreign investments in U.S. MBSs.

## ***Scene 2 – Federal Reserve Responds to Liquidity Demand***

Whether to correct for the overly lax lending standards of previous years or because of the hoarding of liquidity by banks concerned by the loss of their normal sources of liquidity (or both), lending standards have tightened. Loan rates to presumably sound, regular customers jumped dramatically and in some cases credit was virtually unavailable. The Federal Reserve and the central banks of other affected economies responded in traditional fashion to provide the increased liquidity banks demanded in order to keep interest rates from rising and the money supply and credit growth from collapsing. The Federal Reserve responded quickly to supply the increased liquidity demanded by the market and even introduced new facilities that extended the terms, increased the list of eligible collateral (Federal Reserve Bank loans are collateralized), and broadened the range of institutions that could access these new facilities. Lenders were also encouraged to renegotiate the terms of nonperforming mortgages if foreclosure could be avoided and the lender's losses reduced.<sup>12</sup>

Central banks traditionally intervene to provide solvent banks with liquidity when depositors suddenly withdraw funds or when secondary markets for bank assets become disorderly. Federal Reserve provision of liquidity to the market broadly takes two forms: collateralized lending to banks and purchases of assets from the market. Collateralized lending does not spare banks losses on their loans or the assets they invested in. The Federal Reserve would absorb losses from "toxic" collateral only if the banks it lends to fail AND undervalued the collateral. So called "open market operations" in which the Fed buys securities outright are a different matter. Hence such operations are generally limited to the highest quality assets—generally government securities and are purchased at prevailing market prices in reverse auctions. Earlier in 2008 the Fed began to accept MBS as collateral in some of its lending facilities but did not buy them in open market operations.<sup>13</sup> On October 7, 2008 it announce the extraordinary step of buying corporate "commercial paper" in the open market because of the sudden difficulty that companies have been having financing their operations in this customary way.<sup>14</sup> In part, this reflects the fact that banks are no longer the dominant source of funds to the economy.

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<sup>12</sup> Any cost to the lender from reducing the interest rate or changing other terms of a mortgage to avoid foreclosure that was less than its expected loss from foreclosure (estimated currently at between 25 to 40% of the mortgage) potentially "saves" it money.

<sup>13</sup> On November 25, 2008 the Federal Reserve added a "Term Asset-Backed Securities Loan Facility" (TALF). The facility will lend to any U.S. person for one year against the collateral of Asset Backed Securities (ABS) that consist of "auto loans, student loans, credit card loans, or small business loans guaranteed by the U.S. Small Business Administration." This facility does not bail investors out of losses that might occur on their original loans put up as collateral. It also announced that it would buy outright up to \$600 billion MBSs issued or guaranteed by the Fannie Mae and Freddie Mac.

<sup>14</sup> Money market funds have been major investors in high grade commercial paper. Recent large depositor withdrawals from money market funds have forced them to sell assets and prevented them from buying new paper.

At the same time the Federal Reserve is lending huge amounts to banks and others on Wall Street, it has also been selling (previously purchased) government securities from its portfolio and attracting (now) interest bearing deposits from banks in order to keep the federal funds rate at or near its policy target rate. At first glance this two way activity seems hard to understand but a closer look at the deleveraging process makes clear that the Federal Reserve is facilitating the market's rapid shift toward safety. If investors in hedge funds or money market funds (already relatively safe) withdraw funds in order to reduce the riskiness of their investments two questions arise: a) where will the funds get the money to pay for these withdrawals and b) where will the investors put the money they have withdrawn.<sup>15</sup>

With regard to the first question, if hedge funds try to borrow the money needed to repay investors, the leverage of the funds would increase. A larger share of fund assets would be financed with borrowed money rather than with the deposits of investors. But leverage is now more expensive and harder to get. Thus funds will be forced to, or will choose to, sell assets in order to raise the money needed for the investor withdrawals. These sales add to downward pressure on the market price for these assets (every thing from GM stock to subprime MBSs) which might add to the demand by investors to withdraw their funds. Some of the stock market's incredible volatility probably comes from such forced sales. Furthermore, the market's reduced preference for risk implies higher risk premiums for assets with unchanged expected returns. The fall in the market value of MBSs, for example, even without further deterioration of their expected performance, reduces banks' capital. Thus increased demand for liquidity (and safety) and bank capital are interrelated. Banks can use these assets as collateral to borrow the funds needed for redemptions from the Federal Reserve, but this slows the pace of deleveraging.

With regard to what investors do with the money they have withdrawn: they will desire to invest it in something safer. The safest investment is in government securities and the yields on these have been driven to very low levels as the market has moved to safety.<sup>16</sup> The Federal Reserve's sales of government securities to keep their interest rates from falling too low is in effect helping the market shift from riskier investments to safer ones. The market's reduced preference for risk and increased assessment of risk has seriously undermined the traditional transmission of monetary policy from the federal funds rate to other market rates.<sup>17</sup> The drop in the federal funds rate (even with the massive exchange of riskier for safer assets described above) from 5.25% in July 2007 to 1% in October 2008 saw the index of AAA corporate bond rates rise from 5.73% to 6.28% over the same period.

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<sup>15</sup> Essentially the same questions would be raised by the withdrawal of credit by prime brokers (the banks that lend to hedge funds) and with similar answers.

<sup>16</sup> On December 9, the Treasury auctioned 4 week bills for at zero interest and 3 month bills traded briefly with negative interest (sale price above the redemption face value). [Renae Merle and Steven Mufson, "In New Sign of Investor Fear, T-bill Yields Go Negative" The Washington Post](#), December 10, 2008, Page D01.

<sup>17</sup> See *Global Financial Stability Report* of October 2008 ["Financial Stress and Deleveraging, Macroeconomic Implications and Policy"](#), IMF, Washington DC

Banks, and “Wall Street” more broadly, received such special treatment because of their special character. Wall Street refers to so called “financial intermediaries” (banks, insurance companies, mutual funds, etc.), which facilitate and intermediate the flow of saving from households and firms to Main Street (manufacturing, agro, and service firms and households), which use these funds for investment and to smoothen the uncoordinated flow of income and expenditures. Such market allocation of lendable funds has proven to be dramatically more efficient in directing them to more productive uses than the centrally controlled allocation of “planned” economies. Our higher standard of living reflects our more productive allocation and use of resources (for investment in physical and human capital). Secondary markets in which financial assets (stocks, bonds and now bank loans and other securities derived from them) can be traded have increased the “liquidity” of these assets and thus lowered the cost of financial intermediation by reducing the amount of cash banks and other Wall Street firms must keep on hand to bridge the mismatch of their receipts and payments. In addition, banks provide the payment services our modern economy critically depends on.

Successful market allocation of resources depends critically on the incentives and discipline of profits and losses. Those taking risks in search of profits act in the knowledge that they will pay the price of their mistakes or misfortune from sheer bad luck. The American banking system is generally strong and sound because the profit and loss discipline of the market eliminates poorly run ones. Banks limit the risks they take with depositor and shareholder money because they do not expect the government to bail them out of their mistakes. This expectation reflects the demonstrated willingness of banking supervisors to close insolvent banks. However, closing a failing bank, rather than bailing it out, can be risky because of its potential spill-over to other sound banks and the risk of wide spread deposit withdrawals by depositors fearing the loss of their money—so called “bank runs”. The U.S., however, has effective bank bankruptcy laws and tools that largely overcome these risks. Thousands of banks have been taken over by the Federal Deposit Insurance Corporation (FDIC) and resolved without significant disruptions to the banking system. These laws give regulators powerful tools (basically the power to nationalize undercapitalized banks and to sell them in whole or in part and liquidate whatever is left), but limit their discretion in how these tools are used by the requirement that critically under capitalized banks must be taken away from their owners and resolved with the least cost to the insurance fund (FDIC) and other depositors.

These tools were applied to the growing but modest number of banks that failed over the past year (Countrywide, IndyMac, Washington Mutual, and Wachovia to name the bigger ones). These resolutions were handled smoothly with no disruption to the market.<sup>18</sup> However, mortgage and related losses also fell heavily on investment banks and

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<sup>18</sup> It is not worthy, however, that the FDIC suffered larger losses in these recent resolutions than was normally case in the 1990. The Prompt Corrective Action and Structured Early Intervention and Resolution requirements of the FDIC Improvement Act of 1991 (FDICIA) have apparently not been as rigorously adhered to as they were earlier.

even insurance companies.<sup>19</sup> When a few of them began to fail, the legal provisions for bank failures were not available. Thus the arranged buyout of Bear Stearns, an investment bank, earlier this year required the approval of its shareholder who demanded a somewhat higher prices than originally offered and the buyer (JPMorgan Chase) demanded and received from the Federal Reserve a guaranteed limit on its potential losses on Bears Stearns mortgage related assets. While the resolution of Bear Stearns was probably the best that could be achieved with the legal tools available and looked much like an FDIC resolution other than the modest price paid to shareholders, it was not guided by explicit legal rules. The later quasi (re)nationalization of Fannie Mae and Freddie Mac moved closer to the approach of an FDIC resolution but again without the same legal tools. These two Government Sponsored Enterprises (GSEs) where put into Chapter 11 bankruptcy, under the supervision of the newly created Federal Housing Finance Agency (FHFA) and with new managements and boards. However, all creditors were reassured by the Treasury's commitment of an unlimited line of credit and up to \$100 billion in capital if and as needed by each of the two. Shareholders on the other hand were deprived of any dividends and the prospect of surrendering their shares if Treasury capital was needed. On November 14, Freddie Mac reported \$25 billion in losses for the third quarter, which activated the first of the promised tax payer capital injections of \$13.8 billion to avoid insolvency. The future resolution (downsizing and reprivatization or orderly liquidation) of these two GSEs will be decided by the next congress. They should be gradually liquidated.

As estimates of potential mortgage losses continued to rise,<sup>20</sup> the viability of additional banks came into question. Lehman Brothers and Merrill Lynch (both investment banks) entered into discussions with potential buyers. When Dick Fuld, CEO of Lehman Brothers, refused the buyout offer from Barclays, the Federal Reserve refused to sweeten the deal with guarantees and allowed Lehman Brothers to enter Chapter XI bankruptcy, while Merrill Lynch accepted the buy out offer from Bank of America. America's remaining two large investment banks, Goldman Sachs and Morgan Stanley, promptly requested and were granted permission to convert to commercial banks, thereby gaining access to Federal Reserve credit facilities in exchange for the significantly tighter regulation of commercial banks.

## **Act II – Financial Panic and Beyond**

### ***Scene 1—Addressing the Panic***

The September 15<sup>th</sup> bankruptcy of Lehman Brothers, the sort of market discipline of excessive risk taking and failed gambles that I favor, triggered a genuine financial market panic. The TED spread rocketed from around 1.0% the first half of September to

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<sup>19</sup> American International Group (AIG), for example, sustained large losses on Credit Default Swaps it had issued (insurance on the default of MBSs). It was taken over by the government to avoid bankruptcy.

<sup>20</sup> In early October the IMF estimated world wide losses from American mortgages and mortgage related securities would reach \$1.4 billion of which about half have already been written off. Reported in *The Economist*, October 11, 2008 "A Special Report on the World Economy" p 4.

around 4.5% by early October.<sup>21</sup> Treasury Secretary Paulson rushed to Congress with a two page proposal to authorize the Treasury to buy up to \$700 billion of MBS “from any financial institution having its headquarters in the United States”<sup>22</sup> under terms and conditions to be determined by the Treasury. Initially his proposal was to buy MBSs from banks under rules to be determined. After a false start in which the House rejected the proposal, the *Emergency Economic Stabilization Act of 2008* was passed and signed into law on Oct 3<sup>rd</sup>, 2008. In what is now a 451 page law, which included a number of other unrelated or tangentially related measures, the Act essentially authorized the Treasury to borrow up to \$700 billion in order to aid the financial sector in almost any way it decided that might help restore normal bank lending. As evidence mounted that lack of capital rather than liquidity was the primary cause of the claimed freeze up of bank lending<sup>23</sup> and that it would be almost impossible for the Treasury to determine appropriate prices at which to buy “toxic” MBSs, the Treasury shifted the primary use of this authority to recapitalizing undercapitalized but sound banks. The Act also more than doubled the level of deposit insurance coverage from \$100,000 to \$250,000.

On October 8, UK Prime Minister Gordon Brown announced that the British Treasury would inject capital (buy shares) in eight major British banks and guarantee interbank loans, the Bank of England would double the size of its “special liquidity scheme,” and the government would increase the size of guaranteed deposits.<sup>24</sup> On October 13, most European government promised to follow suit. These measures taken together were meant to stop bank runs, increase bank capital, and remove the counterparty risk of interbank lending in order to restore normal lending and credit flows.

In addition, the Federal Reserve has taken unprecedented measures to unblock normal credit flows to Main Street firms and households outside of the traditional commercial bank channels, which have become less important in recent years. Following panic public withdrawals (“runs”) on money market mutual funds, the government guaranteed their principle. Not only did most such funds stop purchasing most commercial paper, a very important source of trade and industry finance, but they were forced to sell some of the paper they already held to finance depositor withdrawals. The

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<sup>21</sup> See Coats, “[The D E Fs of the Financial Markets Crisis](#),” CATO Institute, September 26, 2008.

<sup>22</sup> Legislative Proposal for Treasury Authority to Purchase Mortgage-Related Assets, Sec. 2.

<sup>23</sup> Virtually every category of American bank lending, including interbank loans, have increased over the past year through October after which they modestly declined in most categories (See FRB H-8). Lending also declined modestly and temporarily for several months last Spring. However, the much larger and more important non bank credit market for corporate credit (e.g. commercial paper market) fell into great difficulty. Huge withdrawals from Money Market funds, a major buyer of commercial paper, were only slowed by a quick government guarantee of the principle deposited in such funds. The market dramatically accelerated the rearranging of the complex linkages through which regular credit flowed. While borrowers and lenders can ultimately adjust to new channels and linkages, the pace with which the (deleveraging) changes were happening could not be easily accommodated without serious disruptions to Main Street enterprises suddenly cut off from normal credit. A very useful discussion is presented in the IMF’s *Global Financial Stability Report* of October 2008 “[Financial Stress and Deleveraging, Macrofinancial Implications and Policy](#)”

<sup>24</sup> “[Rescuing the Banks: We have a plan](#)” *The Economist*, October 11, 2008, p 75.

Federal Reserve then introduced an off balance sheet facility for buying commercial paper directly.<sup>25</sup>

These were aggressive interventions into financial markets, which were bound to interfere with normal market discipline of the behavior of its participants. Were they justified? Can they be designed to minimize the moral hazard of encouraging risky behavior by bailing out mistakes? And why bail out Wall Street rather than Main Street?

Why Wall Street rather than Main Street is easy. Wall Street is “merely” the intermediary between savers and investors, between household/firm providers of funds and the Main Street users of these funds. The collapse of Wall Street would seriously impair or even bankrupt quite innocent Main Street firms or households by cutting off the credit they depend on for investment and day to day operations through no fault of their own. Saving Wall Street from collapse potentially saves the entire economy from unnecessary collapse. But were such sweeping interventions necessary to prevent the collapse of Wall Street and restore normal bank lending? That is hard to say for sure, but the risk of misjudgment was too great to take. Given the information in hand, governments were probably justified in taking extreme measures. The case for the Federal Reserve’s aggressive injections of liquidity is much stronger than for the ill defined and ever changing efforts by the Treasury to spend \$700 billion somehow.

## ***Scene 2 – Bailout Risks***

Stopping the financial panic that started in September required steps to reassure depositors and investors that it was safe to leave or put their funds in banks and to increase bank capital to levels that would allow them to continue lending to credit worthy customers. Uncertainty about the soundness of banks needed to be eliminated. It was too late for carefully considered and finely tuned measures, thus broad brushed guarantees and capital injections were used. Sweeping measures were taken to reassure depositors and investors in the UK, EU as well as the U.S. Nonetheless, the cost to tax payers should be considered and damage to market discipline should be minimized where possible. The rules governing which financial institutions get tax payer funds to bolster their capital and the terms and conditions attached to such funds (e.g. matching private sector capital injections, cost to existing shareholders, tax payers’ share in upside profits, and duration of state funding) should be explicit and transparent to minimize market uncertainty and the risk of abuse.<sup>26</sup> To date they have not been. Rules that socialize some of the losses with minimal damage to market discipline of bank and borrower behavior are proposed below.

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<sup>25</sup> The Money Market Investor Funding Facility, effective November 10, 2008.

<sup>26</sup> The ill conceived initial plan to buy toxic MBSs from certain banks has now given way to the use of Treasury’s new authority to inject capital into certain American banks. Peter Whoriskey, David Cho and Binyamin Appelbaum, [“Treasury Redefines Its Rescue Program”](#) *The Washington Post*, Nov 13, 2008 P A01. The Obama administration’s economic team is expected to propose a shift back to the original purpose of buying toxic mortgages and mortgage related assets, probably via a “bad” (debt recovery) bank.

## Help to Wall Street

Partial ownership of AIG and major banks and control of Fannie Mae and Freddie Mac are most certainly not a renewed interest in old socialist ideas about the superiority of state run enterprises; actual experience with which has been almost universally bad. Nonetheless, government ownership of bank shares increases the risks of political interference significantly. The longer it holds these shares the larger the risks will be. Examples can be found already. Broad lending guarantees carry considerable risks of reintroducing the excessive risk taking by Wall Street that started this crisis. Emergency financial market stabilization measures should be ended as quickly as possible. The dangers of deposit guarantees were pointed out by Sandy Flockhart, the chief executive of HSBC's Asian operations. "He argued that the guarantees amounted to inappropriate assistance to weak banks at the risk of imposing costly burdens on taxpayers."<sup>27</sup>

Charles Dallara, Managing Director of the Institute of International Finance, reported that banks receiving government capital injections have been told not to use the funds to satisfy the liquidity needs of their foreign subsidiaries.<sup>28</sup> The severity of the Great Depression is generally attributed to the failure of the Federal Reserve to provide liquidity to banks sufficient to prevent the collapse of the money supply, the ill conceived attempt to save American jobs with high tariffs embodied in the Smoot-Hawley Tariff Act of 1930, and the competitive devaluations around the world in self defeating efforts by each country to boost its exports. Fed Chairman Bernanke, a well versed student of the Great Depression, is determined not to repeat the Fed's earlier mistake this time around and is thus providing huge amounts of liquidity to the financial system. All participants in the November 15, Washington Group of 20 (G-20) meeting on the financial crisis and international financial architecture have also confirmed the dangers of and their opposition to a new wave of protectionism. However, as Dallara warns, the Treasury's pressure on banks not to support their foreign subsidiaries with the Treasury's capital injections could be the twenty first century's version of misguided protectionism. It undermines the logic and premise of globalized banking organizations with a counterproductive effort to "keep capital at home." Given that the U.S. government's debt is largely financed by foreign capital inflows, this feature of the Treasury capital injection program (Troubled Asset Relief Program—TARP) is nothing short of shocking.

The purpose of the Wall Street "bailout" is to restore normal bank lending. However, too much pressure to lend runs the risk of recreating the conditions that produced the crisis in the first place (subprime loans to inappropriate borrowers). Banks should be left to exercise their best business judgment about how to use the new capital, and to whom to lend. Political interference in bank lending has almost always had a bad end around the world and the temptation and pressures on banks to favor districts or projects favored by their new government owners will increase with time. The positive contribution of recessions to our longer run economic health and productivity rests with

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<sup>27</sup> [Keith Bradsher and Bettina Wassener, "HSBC Chief Slams Asian Governments for Hurting Healthy Banks", \*The International Herald Tribune\*, December 5, 2008](#)

<sup>28</sup> The Bretton Woods Committee meeting on the "New Global Financial Architecture", November 12, 2008, Washington DC.

the acceleration of sweeping away inefficient enterprises so that their capital and labor resources can be freed up to be used by more efficient firms. Some firms deserve to fail for the good of the economy, and measures to “stabilize” the financial system should not interfere with that process more than necessary.

In addition to the nine large banks receiving \$130 billion in capital under TARP, an additional [110 banks have received \\$170 billion](#) under the government’s bail out plan. At that point—mid October 2008—only sound and viable banks were to receive government capital injections. Within two months additional TARP funds were being given to two of these banks (Citibank and Bank of America) because they were no longer sound without it. It is no longer clear whether these funds are to facilitate lending by sound banks or to bailout weak ones, or just what the criteria are for their use. The lack of clear and sensible rules undermines investment planning by firms and opens the flood gates of political abuse, whether well intended or otherwise. Camden Fine, chief executive of the Independent Community Bankers of America, stated that, "I think there is a suspicion among a large number of our members that it's who you know rather than the merits of the application," that determines which firms get “easy” tax payer money.<sup>29</sup> Political interference, favoritism, and outright corruption are high risks of any government expenditures, especially of this type.

If the conditions for government money are made stringent enough (see Sweden’s experience with their bank bailouts in the early 1990s) those who can will find private money instead.<sup>30</sup> The government’s uses of TARP funds so far are more likely to discourage the investment of private capital in viable banks. In retrospect actions taken by the Treasury in panic where probably unnecessary and damaging to the soundness of the banking system in the long run. It would have been better to resolve any critically under capitalized banks with the legal tools already in place, adding tax payer support if necessary after wiping out the shareholders as part of an FDIC take over and resolution (e.g., purchase and assumption transactions, assisted sales, orderly winding down and liquidations). Specific recommendations are made in a later section (Scene 3).

The Treasury is now expanding the program to insurance companies and other Wall Street firms. But such largesse is a slippery slope. Introducing the prospect of obtaining capital at more favorable terms than available in the market has brought a flood of lobbyists to Washington seeking funds for a wide variety of state and local governments and enterprises. The bankruptcy of a Main Street firm can be quite beneficial to the industry by reorganizing a firm or reallocating its assets to more productive hands.<sup>31</sup> The government’s bailout frenzy risks undermining these beneficial results of market entry and exit.

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<sup>29</sup> David Cho and Lori Montgomery, ["Delays in Bank Aid Spur Frustration"](#), *The Washington Post*, January 23, 2009, Page D01.

<sup>30</sup> Warren Coats, ["The Big Bailout - What Next?"](#) Cato Institute, October 3, 2008

<sup>31</sup> The same is true for Wall Street firms, but as discussed earlier the resolution of a failed bank requires special tools.

The most controversial appeal for government bailout money has come from Main Street firms like General Motors, Chrysler, and Ford. Detroit auto bosses would like to keep their jobs, of course, but the market is registering its displeasure at their inadequate performance. Beyond them and the Big Three shareholders, the overpaid United Auto Workers are the main lobbyists for this bailout.<sup>32</sup> As we all know from the bankruptcies of Delta, United and other airlines, Chapter 11 reorganization does not necessarily mean the end of a firm. What it does is temporarily stay creditor claims, void existing contracts (including labor contracts) and replace management in order to put together the good parts into a viable operation (if possible). The receiver/conservator's mandate is to maximize the company's value for the creditors. American bankruptcy laws are well designed to guide the restructuring of our Detroit auto firms ("old auto" rather than the more efficient and successful "new auto" manufacturing facilities for Toyota, VW and other foreign owned companies producing cars in the U.S.)<sup>33</sup> America also needs to honor commitments to the WTO regarding state subsidies to companies that sell internationally as part of our general commitment to the benefits of free trade.

Some have argued that bankruptcy would not work as well for, say, GM as it has for United or Delta because few people would risk buying a car that might go out of production in the near future. However, GM has managed to terminate lines (Oldsmobile) in the past without disaster and will need to terminate others in any event. A new industry has responded to ensure spare parts are available for the defunct Oldsmobile line. The Detroit auto bailout bill passed by the House December 10 and rejected by the Senate the next day has many features of Chapter 11 bankruptcy (including uncertainty about the long run survival of specific lines) and the creation of an oversight board with an Auto Tsar provides it with some protection against political interference with the restructuring, which should be guided by commercial criteria. But Chapter 11 provides better protection and is an established and time tested procedure. It can be combined with financial assistance from the government if that would minimize the cost to tax payers (the criteria governing assisted bank resolutions). Placing Fannie Mae and Freddie Mac in Chapter 11 with financial assistance and guarantees from the government is an example.

The temporary partial nationalization of selected banks also runs many political risks, especially in Europe where the French President continues to talk of state support of "national champions". Government support (capital and guarantees), even when explicitly meant to be temporary, can be hard to remove and failing to do so would be very damaging to market discipline of bank risk taking. They have invariably tempted politicians to interfere to favor pet projects, firms, or relatives, the bane of state owned banks wherever they have existed.

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<sup>32</sup> Jeffrey Mcracken and John D. Stoll, ["GM Blitzes Washington in Attempt to Win Aid"](#), *Wall Street Journal*, November 15, 2008.

<sup>33</sup> The Washington Post Editorial, ["No Free Lunch"](#) November 14, 2008, P A14; Daniel J. Mitchell, ["Say No to the Auto Bailout"](#) CNN.com November 13, 2008; Thomas L. Friedman, ["How to Fix a Flat"](#), The New York Times, November 11, 2008; Martin Feldstein, ["A Chapter for Detroit to Open"](#), The Washington Post, November 18, 2008, Page A27; Kevin A. Hassett, ["Recession will be less Damaging without Bailouts"](#), AEI, November 17, 2008.

Bank failures (as opposed to temporary illiquidity) are different than the failures of Main Street firms and require a special insolvency regime. For two decades the FDIC has effectively used its authority to resolve failing banks efficiently at minimum cost to the insurance fund and to tax payers and with minimal disruption to the market. While many judgments are required to exercise this authority, the criteria on which they are based are explicit in the law (minimum cost to the fund) and can be monitored. Secretary Paulson's Treasury's interventions have not had that benefit and have increasingly raised questions about the seeming arbitrariness of some decisions. For example, why was Lehman Brothers allowed to fail while Bear Stearns and Merrill Lynch were "saved"?<sup>34</sup>

Many explanations have been offered. Lehman Brothers was smaller than the others and the markets had been given more time to adjust to and prepare for its bankruptcy and thus the market should be able to absorb it without systemic disruption. And it was time to restore market discipline. Another, not inconsistent, view is that Dick Fuld, CEO of Lehman Brothers, was an insider who overvalued his firm and arrogantly rejected the offers made by Barclays to buy it, while Merrill Lynch CEO, John Thain, came from the outside and had a more objective assessment of his firm's real value and thus accepted the offer negotiated with Bank of America. But it is also impossible to escape the fact that Secretary Paulson was formerly the CEO of Goldman Sachs, a competitor of Bear Stearns, Lehman Brothers, and Merrill Lynch. A number of key Treasury officials also came from Goldman Sachs. His friend Warren Buffet bought \$5 billion worth of Goldman's perpetual preferred shares with a 10% dividend and an option to purchase \$5B of common stock at \$115 during the next five years. A cheaply priced capital injection by the Treasury should do nice things for Goldman's share price.<sup>35</sup> Poor Lehman Brothers, on the other hand, has large investments from George Soros, not a friend of Mr. Paulson or the Bush administration.<sup>36</sup> *The Washington Post* claims that Paulson's deal to sell Lehman to Barclays was actually killed by British regulators.<sup>37</sup>

Similar questions can and have been raised about the government's several bailouts of AIG, the largest insurance company in the world (the complex and murky steps toward the effective government take over of AIG remain almost impossible to understand). In a fascinating account in *Rolling Stone* [] describes the AIG bailout as an indirect Goldman Sachs bailout. "On the weekend of September 13th, AIG's senior leaders were summoned to the offices of the New York Federal Reserve. Regulators from Dinallo's insurance

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<sup>34</sup> As noted earlier this characterizations of what happened is an over simplification.

<sup>35</sup> U.S. Treasury, *TARP Capital Purchase Program, Senior Preferred Stock and Warrants* "The Senior Preferred will pay cumulative dividends at a rate of 5% per annum until the fifth anniversary of the date of this investment and thereafter at a rate of 9% per annum."

<sup>36</sup> Similar questions have been raised about the role played by Robert Rubin in supporting the repeal of the Glass Steagall Act that made possible the merger of Citibank, Travelers Insurance and Salomon Smith Barney (a bank, an insurance company and an investment bank) to form Citigroup. When he left the Clinton administration Rubin accepted a highly paid position as a Director and Senior Counselor of Citigroup. Steven Pearlstein, "[A Bailout Steeped in Irony](#)", *The Washington Post*, November 25, 2008, Page D01.

<sup>37</sup> David Cho, "[A Conversion in 'This Storm'](#)" (the Evolution of Hank Paulson), *The Washington Post*, November 18, 2008. Page A01.

office were there, as was Geithner, then chief of the New York Fed. Treasury Secretary Hank Paulson, who spent most of the weekend preoccupied with the collapse of Lehman Brothers, came in and out. Also present, for reasons that would emerge later, was Lloyd Blankfein, CEO of Goldman Sachs.... Goldman Sachs, it turns out, was Cassano's [head of AIG's Financial Product's division that produced the staggering losses that brought AIG down] biggest customer, with \$20 billion of exposure in Cassano's CDS book. Which might explain why Goldman chief Lloyd Blankfein was in the room with ex-Goldmanite Hank Paulson that weekend of September 13th, when the federal government was supposedly bailing out AIG....

"Market analyst Eric Salzman is more blunt. "If AIG went down," he says, "there was a good chance Goldman would not be able to collect." The AIG bailout, in effect, was Goldman bailing out Goldman.

"Eventually, Paulson went a step further, elevating another ex-Goldmanite named Edward Liddy to run AIG — a company whose bailout money would be coming, in part, from the newly created TARP program, administered by another Goldman banker named Neel Kashkari."<sup>38</sup>

The new program of assistance signed into law on October 3 and now focused on buying bank shares, is meant, in part, to replace this seemingly ad hoc approach to non bank financial institution resolution with a clearer set of rules and criteria. These rules seem still to be evolving. Both the U.S. approach and the UK/EU approaches dramatically reduce bank accountability for mistakes for the duration of partial government ownership. This period needs to be kept temporary. This is particularly important for guarantees of interbank loans. Normal dividend payments to other shareholders are suspended during the period of government share ownership.

Once the rules of the game are clear again, bottom feeders looking for bargains will establish a floor to MBSs values and other under valued securities and recovery can begin. The Treasury's frequent changes of the rules have been counterproductive. The latest example is the bailout of Citibank, bypassing the established procedures in FDICIA for resolution of undercapitalized banks. On top of the \$25 billion in tax payer capital provided by TARP in October, the government stepped in on November 24 with another \$20 billion of capital and guarantees for \$250 billion of toxic assets. Existing, tested and workable procedures have again been bypassed with another ad hoc deal.

## **Help to home owners**

The financial panic could have been ended overnight by a blanket government guarantee of all mortgage loans, however, the moral hazard would have been severe and public outrage over the gross unfairness of rewarding reckless speculators with the tax

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<sup>38</sup> Matt Taibbi, "[The Big Takeover](#)" *Rollingstone.com* March 19, 2009

dollars of more prudent borrowers would surely have been pronounced. Bailing out such behavior would almost certainly bring on much more of it in the future. However, more carefully designed and targeted programs to help home owners able to make modestly reduced payments are already helping significant numbers avoid costly foreclosures. Bank of America, for example, reports that it has employed around 7,000 people to work full time on restructuring mortgages to help keep people in their homes (generally by lowering interest rates and thus monthly payments). They are willing to do so as long as the loss to them is less then would result from foreclosure.<sup>39</sup> Lenders are accepting a modest loss in order to avoid still larger losses. More can be done in this area, which would reduce banks' mortgage related losses and thus improve their capital, but careful consideration must be given to the unfairness of bailing out poor judgments and providing an incentive to default in order to benefit.

Koppell and Goetzmann recommend that the government "pay off all the delinquent mortgages" by offering "to refinance all mortgages issued in the past five years with a fixed-rate, 30-year mortgage at 6 percent."<sup>40</sup> McCain introduced a similar plan during the Presidential debates October 7. These proposals are bold but fail on many of the fairness, moral hazard criteria mentioned above. McCain's plan spares the lenders any cost of their misjudgments and fully bails out borrowers who can't or won't pay. A better plan, proposed by Henry Sanborn, is for the Federal government to offer to pay a share, say 30%, of the existing contractual mortgage payment in exchange for which the lender must pay (write off) a share, say 10% while the mortgagee pays the rest. The government's payments would be a loan to struggling homeowners with attractive terms that encourage early repayment.<sup>41</sup> Replacing ARMs with Koppell and Goetzmann's fixed rate mortgage could be usefully added to this plan. Actual and expected foreclosures should drop significantly to levels that should not be prevented in any event and the market value of mortgages and mortgage backed securities would quickly increase, the associated losses to lenders decrease, and the capital of banks holding them would then increase.

To illustrate, a \$200,000 30 year mortgage on a house valued at 220,000 with an initial teaser interest rate of 4% adjustable after two years, would require monthly principal and interest payments of \$955 per month. After two years the remaining principle would be \$192,812. If the interest rate on the adjustable rate mortgage (the category with the largest defaults) increased to 6% (most ARMs cap year to year adjustments at 2%), monthly payments would jump to \$1,186 per month (or \$1,440 per month at 8%), which might be more than the borrower can afford. Sanborn's proposal is that if the lender cannot agree on a voluntary restructuring satisfactory to the borrowing, the government would pay (as a loan) 30% of the monthly payments (\$356) and the lender would eat (write off) 10% (\$119) reducing the monthly payments for the borrower

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<sup>39</sup> Gregory Baer, Deputy General Counsel at Bank of America, in a presentation at the New America Foundation November 13, 2008.

<sup>40</sup> Jonathan G.S. Koppell and William N. Goetzmann, "[The Trickle-Up Bailout](#)", *The Washington Post*, October 1, 2008; Page A17. As a result of subsequent monetary policy measures take by the Federal Reserve rates for 30 year fixed rate mortgages have fallen well below this level (4.0% in mid January).

<sup>41</sup> Henry N. Sanborn, "A Different Solution to the Financial Mess" unpublished

to \$712. More likely that borrower would choose to borrow from the government the smaller amount needed to keep her payments at the affordable \$955 per month. There is no firm data on the extent to which such measures would reduce mortgage defaults but it is likely to be considerable. Even if the market price of the house fell 20% to \$180,000 (i.e. below the amount of the mortgage (serious home owners are not likely to walk away from their home as long as they can continue to make the monthly payments))

The case by case renegotiations now underway by Bank of America and others are best targeted to individual situations and very labor and time intensive. Some what cruder standardized models for restructuring mortgages could be implemented much more cheaply and quickly though would probably cost lenders more. On November 13, Fannie Mae and Freddie Mac announced such a model they intend to use. FHFA Chairman James Lockhart expressed the hope that this model would provide a minimum standard for the industry.<sup>42</sup> FDIC Chairman, Sheila Bair would like to go further by sharing half of the losses of lenders from loan restructuring that meet standard criteria with the government. By increasing the interest rate or principle reductions that would still save the lender money compared with foreclosure as a result of sharing the cost with the tax payer, Ms. Bair estimates that around 1.5 million home owners could be helped.<sup>43</sup>

Democrats in congress have pressed to drop the exclusion of mortgage loans on residences from the general authority for bankruptcy courts to impose restructured turns on mortgages in the context of personal bankruptcy. Mortgage loans already include detailed provisions for default via foreclosure and liquidation of collateral (the mortgaged property). The possibility that these terms and provisions could be rewritten by a bankruptcy court would weaken the original loan terms and agreement and most likely increase the risk premium included in the loan rate. However, if the judge's authority were limited to new terms that were financially better for lenders than foreclosure and liquidation (and more affordable for the borrowers), such powers could be useful in avoiding unnecessary foreclosures of mortgage loans, for example, that had been packaged into a MBS (where bilateral negotiations between borrower and lender were not feasible).

As the financial panic subsides, the current temporarily high demand for liquidity by banks subsidies, and deleveraging in the rest of the financial sector runs its course, the Federal Reserve must be prepared to reabsorb the huge amount of base money it created as rapidly as it extended it. Doing so prematurely would risk deepening the recession much as the Fed did to cause the second wave of the Great Depression in the late 1930s. "Clear exit criteria for extraordinary interventions should be in place to help address moral hazard and limit the degree to which intervention substitutes for regular market functioning in the long term."<sup>44</sup>

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<sup>42</sup> Patrick Rucker, "[GSE Chief says Mortgage Aid Plan Should be Model](#)" *Reuters*, November 13, 2008.

<sup>43</sup> FDIC, "[FDIC Loss Sharing Proposal to Promote Affordable Loan Modifications](#)"; Alan Zibel, "[FDIC says plan could help 1.5 million keep homes](#)", *Associated Press* November 14, 2008.

<sup>44</sup> IMF, "Global Financial Stability Report: Financial Stress and Deleveraging Macrofinancial Implications and Policy", *International Monetary Fund*, October 2008

America's growing public sector debt and its huge unfunded liabilities related to Social Security and Medicare are concerns as well. Temporary increases in government debt, if necessary to stabilize the financial sector, are justified because they should prevent far larger additions to the deficit that would result from the failure to stabilize the financial sector. Furthermore, the actual costs of these government interventions is expected to be significantly less than the amounts being lent or used to buy bank shares because some, if not a large part, of these funds will be repaid. America's future debt problems are very serious and the design of the financial crisis rescue and fiscal measures to mitigate the recession must keep them in mind.

### ***Scene 3 – The Way Forward***

The Shadow Financial Regulatory Committee sponsored by the American Enterprise Institute in an open letter to President-Elect Obama stated that "In addressing the current financial crisis your new administration will face three critical tasks. The first is managing the ongoing mess. The second is to effect an orderly unwinding of the emergency measures the previous administration put in place to bolster financial institutions and markets. The third is to develop a comprehensive policy strategy that will help to shape the financial system of the future."<sup>45</sup>

#### **New bailout rules**

While the Federal Reserve has moved aggressively to provide massive amounts of liquidity to accommodate the financial sector's deleveraging now underway—the traditional lender of last resort function of central banks—the Treasury has pursued different, hard to follow, ad hoc policies every other week. Individual businessmen and investors (not to mention home owners) formulate their plans in light of their assessment of opportunities and the rules of the game. It is difficult for these actors (e.g., bottom feeders) to initiate the recovery with their spending when the government keeps changing the rules (offering better deals than the market, then withdrawing them, and then offering still better deals). The Treasury needs urgently to spell out the "operational processes and standards and loss sharing rules associated with systemic intervention. This would include criteria for selecting candidates for assistance in crisis circumstances."<sup>46</sup> The market needs to know the rules of the game. The Treasury has become part of the problem rather than the solution.

The financial sector—Wall Street—faces wide spread insolvency because of very much larger than expected mortgage loan losses. Why this happened and how to prevent it in the future is the subject of the subsection below on "Reforming the system." Managing the existing mess should address measures to minimize further mortgage defaults without unduly taxing responsible borrowers to bailout less responsible ones. Housing prices should not be prevented from falling to more realistic and sustainable

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<sup>45</sup> Shadow Financial Regulation Committee, "[An Open Letter to President-Elect Obama](#)" December 8, 2008

<sup>46</sup> Ibid Page 4

levels. But avoidable mortgage defaults—those that lower monthly mortgage payments to affordable levels without costing lenders more than from foreclosure—should be avoided. TARP funds should be used to share part of the loss to lenders of restructuring loans that satisfy this criteria as discussed in the preceding subsection on “Help to home owners”.

The second plank of a new strategy should be to set a floor on further losses on existing MBSs in order to remove the high risk premiums their steeply discounted prices now reflect. This should be done by opening a window at Fannie Mae and Freddie Mac (the already existing “bad” banks) at which classes of MBSs reflecting different mixes of underwriting standards would be purchased at fixed prices from any seller. The prices set should reflect the best estimate of the likely present value of these assets (and thus of their underlying mortgages) over their remaining life. The assessments of their values should be made by Fannie and Freddie, which have existing staff with considerable expertise in this area.<sup>47</sup> This will provide greater clarity and certainty with regard to their values on bank and other Wall Street firms’ balance sheets (which must be fully marked to market to be meaningful and credible). It should also facilitate their liquidity via secondary trading of these assets and thus increase their value. In the process, banks’ true capital will be clarified and increased and further losses from further increases in defaults will be eliminated. Banks will suffer the full consequences of mortgage loan losses up to that floor. TARP funds would be provided to Fannie and Freddie as needed to finance these purchases. Alternatively, bad bank subsidiaries of Fannie and Freddie could be established for this purpose and partially financed by the issuance of senior preferred shares to the banks selling MBS’s to the bad bank in payment. The shares would be valued on a bank’s balance sheet at the price for the MBSs sold set by Fannie and Freddie as would similarly classified MBSs retained by the bank. As these prices will be (modestly) above the previously prevailing market price or banks would not sell them to the bad bank, bank capital will be increased.

The third plank should be to end the bailout of bank shareholders but to guarantee (bailout) all depositors and other creditors of record prior to January 1, 2009 for the next two years. The first two planks will reduce mortgage related losses and thus increase bank capital. If the out come of the first two planks still reduces the capital of a bank (any bank) to a critically low level<sup>48</sup> and the bank is not able to raise sufficient additional capital within days of this determination, the bank would be taken over by the FDIC and the shareholders would be wiped out. The FDIC would apply its existing tools and resolution criteria (maximize the value to creditors, thus minimize the losses to tax payers) in determining the best course for the intervened bank (sale of the whole bank; arranged purchase of the good assets and assumption of comparable liabilities by another

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<sup>47</sup> Estimating the value of these sometimes complex mortgage derivatives is not easy and is one of the reasons the Treasury gave up its initial plan to use TARP funds for such purchases. If the values are set too low, banks and other holders will prefer to hold on to them in the expectation of a better return. If they are set too high the tax payers will pay the difference. The prices set should reflect the best estimates possible of the actual expected present values. It is better, in fact, that only modest amounts are sold to the bad bank with the rest trading more freely in the market at or above the guaranteed floor price.

<sup>48</sup> Furthermore, capital requirements should vary countercyclically, with higher requirements during business cycle upswings so that capital can actually be used to absorb losses during downswings.

bank, assisted by TARP funds if appropriate; orderly wind down and liquidation). The FDIC insurance funds and TARP funds would guarantee no losses to depositors and other creditors of record prior to the first of this year. By ending the bailouts of shareholders with limited bailouts to depositors and other creditors, a reasonable compromise would be struck between preserving the market discipline of bank behavior by shareholders while removing it for pre existing creditors. If banks with heavy losses are considered viable in the long run by their owners, they should be able to raise the additional capital needed to continue operation. Ending the current prospect of a shareholder bailout by taxpayers would clear the decks for a rational business decision by shareholders to raise more money or give up the ship. Similarly the potential for deposit and creditor runs would be limited only to new investments, thus preserving limited market discipline from the depositor/lender side.

These measures should unclog credit flows with minimal moral hazard of excessive risk taking in the future. If banks and other investors are not willing to lend in these circumstances, it would almost certainly be because of concerns about the credit worthiness of the borrower, in which case they should not lend. Government policy should never force or even pressure banks and other financial institutions to lend. This is partly how we got into the current mess in the first place. The first obligation of a bank is to protect its depositors' money.

## **On with the recession**

With the financial panic now potentially under control and lending rates gradually returning to normal,<sup>49</sup> monetary and fiscal policy must focus on moderating the recession without preventing it from correcting long standing macro imbalances. American consumers have long saved too little (i.e., consumed too much) to finance investments in American technology and productive capacity (and the government's excess spending). Large capital inflows from abroad (balance of payments deficits) filled the gap but are not sustainable. To sustain or increase investment with higher private sector saving the new macro mix requires smaller balance of payments deficits and lower fiscal deficits. The fall in the exchange rate of the dollar for the Euro and most other world currencies to more realistic and sustainable levels has already started the process of adjustment by making American exports more competitive and imports more expensive. Thus reduced consumer spending (increased household saving) is being offset by increased foreign spending on American goods (increased exports). These are very desirable adjustments.

However, the dramatic and very large fall in household wealth as a result of falling real estate and stock prices is beginning to reduce household consumption more rapidly than it can be replaced by increased net exports (which includes shifting some consumption from foreign to domestically produced goods and services as well) and investment. The spread of America's financial crisis abroad and the bursting of Europe's own real estate bubbles by slowing economic activity and demand abroad are undercutting the recent increases in American exports as is the appreciation of the

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<sup>49</sup> Thirty year fix rate mortgage rates are now at the lowest level ever recorded and the TED spread has narrowed from 4.3% in October to 1.0% in mid January.

dollar's exchange over the last six months.<sup>50</sup> In short, the adjustments needed within the American economy are not occurring as smoothly as they might have. Investment itself is retracting in the face of the credit crunch induced by the financial crisis. With falling consumption AND investment (rather than falling consumption with increased investment) and stalled growth in exports, only increased demand from fiscal policy (tax cuts or spending increases) can prevent a fall in aggregate demand from producing an increase in unemployment. The long run secular need for higher American savings rates has run into the short run, recession induced need to increase aggregate demand, whether from additional consumption (temporarily lower savings rates) or government spending.

It is appropriate for monetary policy (lower interest rates) and fiscal policy (larger fiscal deficits) to attempt to moderate the recession in an effort to prevent overshooting. Automatic stabilizers, such as rising state and federal deficits as expenditures are maintained in the face of falling tax revenue and increased safety net expenditures for increased unemployment compensation, etc., are a first line of defense. But they might be usefully augmented by measures such as extending the period of eligibility for unemployment benefits and accelerating infrastructure expenditures that are planned and needed in any event. Doing so, however, runs considerable risk of introducing extra fat (low priority pet projects of individual representatives) into a budget that will badly need to be trimmed in the future. Furthermore, efforts to increase government spending to stimulate aggregate demand almost always have their effects too late, i.e., when the economy is already expanding, and thus risk doing more damage than good. Tax cuts can be implemented more quickly and do not risk increasing government expenditures on wasteful projects. While much of the increase in disposable income from tax reductions might go into debt reduction, which does not immediately add to aggregate demand, it still strengthens household balance sheets and will eventually increase spending. A one or two year suspension or reduction of wage taxes would be well targeted and potentially effective. Such fiscal measures, however, should be designed not to interfere with the broader macro economic adjustments needed (higher domestic saving and lower trade deficit) for long run sustainability. Nor should they thwart the healthy purging of inefficient firms and pruning of fat to keep viable firms efficient. The dynamism of the entry of new firms and the exit of unsuccessful (unprofitable) ones is a critical factor in our high and growing standard of living.

The \$787 billion package finally approved by Congress over the Valentine's Day weekend illustrates an additional risk of hastily legislated increases in government spending. Many of the additional, so called "stimulus" expenditures seem to carry with them significant changes in important policies with regard to access to welfare and the operation of Medicare and Medicaid. Changes in the principles upon which entitlement programs operate should be openly and carefully debated as should the relationship between the states and municipalities and the Federal government. Congress has

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<sup>50</sup> The dollar peaked on July 6, 2001 when it exchanged for 1.19 Euros. Seven years later on July 16, 2008 it had fallen 47.5% to 0.63 Euros. Since then it has appreciated 22% (to 0.80 on October 29) but was still 33% below its 2001 peak. Following the Fed's reduction in its overnight interest rate target to 0.25% on December 16 the dollar dropped again and on January 23, 2009 was 0.77 Euros.

procedures for such debates. They should not be overridden in the name of emergency stimulus expenditures.

As noted above the Great Depression was caused by the failure of the Federal Reserve to provide sufficient liquidity to a distressed banking system and protectionist measures in the form of high import tariffs and competitive (and self defeating) currency devaluations around the world in what came to be called beggar thy neighbor policies. These last elements call for policy coordination on a global basis and are discussed more fully in the next section in the context of future reforms of the system.

## **Reforming the system**

It is still hard to believe that underwriters approved many of the loans now gone and going bad that have sparked the deleveraging frenzy driving the restructuring of the financial system and the current financial crisis. What were they thinking? There are lessons to be learned that will surely involve additional or improved regulation. However, it is naïve, to say the least, to think that government bureaucrats are generally better at spotting risks than those whose money is on the line. Purchasers of MBSs expected a positive return on their investment. Mortgage originators and MBS consolidators and marketers have a strong profit and loss incentive to overcome existing weaknesses in these products, which is generally more powerful than the desire of regulators to serve the public interest. However, some regulations can help the market function more efficiently and to better regulate risk taking by financial players. The main players in the Credit Default Swap market have concluded, for example, that registering their CDSs with a clearinghouse that accepted the counterparty credit risk would reduce the risks and improve the transparency, efficiency and profitability of that market. However, the Federal Reserve facilitated that consensus, acting as a catalyst. Such a plan is now being implemented by the market. The mandatory disclosure of meaningful information on the nature and extent of risks taken facilitates better regulation of such behavior by the market itself. In this regard, fair value accounting needs to be strengthened not weakened,<sup>51</sup> but meaningful measures of risk exposures are needed as well.

The former CEOs of Citibank and Fannie Mae stated that they were forced by competition to take larger risks. Citi's Charles Prince stated that "When the music stops, in terms of liquidity, things will be complicated. But as long as the music is playing, you've got to get up and dance. We're still dancing."<sup>52</sup> Prince, formerly known as the CEO of Citi, didn't dance much longer however. Fannie Mae consciously chose to lower the quality of the mortgages it bought or guaranteed in order to improve income and maintain market share (to retain relevance). Fannie Mae's earlier CEO, Franklin Raines remarkably blames Fannie's excesses on the failure of its regulator to object to its behavior.<sup>53</sup> Raines had been dismissed in 2004 for accounting irregularities that

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<sup>51</sup> Warren Coats, ["Mark to Market Accounting--What are the Issues?"](#) CATO Institute, October 29, 2008

<sup>52</sup> Financial Times, July 9, 2008, quoted in Gary North, ["When the Music Stops"](#) LewRockwell.com

<sup>53</sup> Dawn Kopecki, ["Raines Faults Regulators for Fannie, Freddie Missteps"](#), Bloomberg.com, December 9, 2008

embellished his bonuses. Such behavior is contrary to profit maximization over the long haul, so what went wrong?

Maximizing profits this year at the expense of the long run—short termism—reflects weaknesses in the control of shareholders through their boards of directors over management. It is also a product of remuneration systems that reward short term performance without regard for the longer run consequences of this year's actions. Weaknesses in accounting rules (gaps in mark to market valuations) can encourage short termism as well.<sup>54</sup> Leo Tilman argues that the public disclosure of meaningful measures of firms' exposures to risk would result in better market regulation of excessive leverage and thus the better pricing of risks that firms chose to take.<sup>55</sup> The prospect or expectation that tax payers will bail firms out if they incur losses seriously undercuts normal profit and loss incentives to properly manage risks, favoring short-term over long-term profit maximization. The damage of moral hazard from interfering with market outcomes with bailouts should not be underestimated. The incentives driving private sector behavior, also shaped by regulatory and public policy, need to be corrected to favor long run profit maximization. To a large extent government regulation will work best when it strengthens and facilitates the markets regulation and discipline of enterprises. Greater transparency and accountability are key tools and should be strengthened where they contribute to market regulation without stiffening innovation and competition. In some instances existing regulations need to be more rigorously enforced.<sup>56</sup>

Relevant industry groups are frantically at work seeking solutions that will reduce the prospects of such huge losses in the future. Regulatory bodies would do well to work with them, interfering only when industry self interest clearly conflicts with the broader public interest (easier said than done). Above all, adjustments and refinements to financial regulation should wait until we all have a better understanding of the existing weaknesses that can be fixed by regulation. It is too easy for new regulations to do more harm than good.

The rush by the Securities and Exchange Commission (SEC) to ban short selling of traded stocks, for example, had among its unintended consequences a negative effect on corporate bond prices.<sup>57</sup> This "reform" is widely believed to have been a mistake. Even Mr. Eliot Spitzer, former state attorney general (and Governor) of New York, speaks nicely of the importance of short selling for market discipline.<sup>58</sup>

The role of the Community Reinvestment Act needs to be correctly understood as well if it is to be amended in relation to overly risky mortgage lending. After all the vast majority of low income families that are now home owners because of intensified efforts to provide appropriate mortgage products to those not meeting "Prime" criteria are

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<sup>54</sup> Coats, Op cit.

<sup>55</sup> Tilman, Op cit.

<sup>56</sup> The larger costs to the FDIC of recent bank failures suggest that adherence to the "prompt corrective action" and "early intervention" provisions of U.S. banking laws has weakened in recent years.

<sup>57</sup> *The Economist*, "[Hedge funds: Collateral Damage](#)", October 9, 2008.

<sup>58</sup> Eliot L. Spitzer, "[How to Ground the Street](#)" *The Washington Post*, November 16, 2008 Page B01.

meeting their payment obligations. This has been a benefit to them and to the economy. Sheila Bair, Chairman of the FDIC, states flatly that the 30 year old law has not contributed to the collapse of mortgage underwriting standards or their enforcement. Most of the defaulting subprime mortgages were originated “by independent mortgage lending companies, which the act does not cover....”<sup>59</sup> James Lockhart, Chairman of the new Federal Housing Finance Agency, points out that default rates for mortgages owned or guaranteed by Fannie and Freddie are substantially lower than those not meeting their underwriting standards and not covered by the CRA. “Fannie Mae and Freddie Mac own or guarantee almost 31 million mortgages, about 58% of all single family mortgages.... These mortgages only represent 20% of serious delinquencies... Private label securities represent less than 20% of the mortgages but 60% of the serious delinquencies.”<sup>60</sup> The CRA does not call for mortgages to those who cannot afford them; however, the use of quotas to measure compliance (among those lenders covered) can only be satisfied by reducing underwriting standards, potentially to inappropriately low levels.<sup>61</sup>

Peter J. Wallison makes a convincing case that the excessive deterioration of mortgage underwriting standards resulted primarily from the combination of government policies to promote home ownership, the introduction in 1995 of objective criteria to determine whether banks were meeting their obligations under the Community Reinvestment Act to lend to minorities, the lack of proper regulation of Fannie Mae and Freddie Mac with very low capital requirements and an implicit government guarantee that keep their funding costs low, and Fannie and Freddie’s unrestrained expansion into subprime and Alt A mortgages in the early to mid 2000s crowing out private sector lenders who lowered underwriting standards further to maintain market share.<sup>62</sup>

The mortgage default problem is primarily one of Adjustable Rate Mortgages (ARMS) and Alt – A mortgages favored by flippers (real estate price speculators), not of sub prime borrowers. The disproportionate growth in AMRS was encouraged by long periods of excessively low interest rates (i.e. monetary policy).

It is a mistake to characterize the choice as between regulation or no regulation. Regulation comes in a wide variety of forms and degrees, some more aligned with requirement for market development and efficiency than others. Adjustments in regulation will be needed to reflect changes in financial markets over time and to correct weaknesses in existing regulations revealed by recent experience. However, care should be taken to find the best balance between market and supervisory discipline of risk taking and it is too early to understand fully where the weaknesses are. Areas where reforms should be considered include:

- extending the legal tools found in American bank insolvency laws to a broader range of financial institutions,

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<sup>59</sup> Editorial, “Misplaced Blame,” *The New York Times*, October 15, 2008

<sup>60</sup> James B. Lockhart, News Release: Statement of FHFA Director, November 11, 2008

<sup>61</sup> Lawrence H. White, *Op cit.*

<sup>62</sup> Peter J. Wallison, ["The True Origins of This Financial Crisis"](#), *American Enterprise Institute*, February 19, 2009

- improving the “plumbing” (back office processing and accounting) for Credit Default Swaps—CDSs—and other derivatives);
- strengthening capital charges for CDSs,
- reducing or eliminating tax incentives for leverage (including the mortgage interest deduction from personal income tax),
- refining the treatment of on and off balance sheet items for bank capital adequacy,
- making rating agencies liable for their work to the same standard as auditors and requiring them to disclose their models and any information they acquire from the rated entities so that investors can perform their own evaluations,
- listing rated derivatives on exchanges or clearinghouses and requiring the exchanges or clearinghouses to pay for the rating, and
- strengthening rules on broker/dealer/bank use of collateral.<sup>63</sup>
- Strengthening shareholder control of bank boards and bank risk taking (corporate governance).

More broadly solutions must be found for the breakdown of lending standards arising because private sector actors (brokers and agents) make decisions for fees with regard to other peoples money (should mortgage originators be required to keep some of the risk—to have some “skin in the game”—and should bonuses have to be structured to avoid rewarding undue risk taking?). In addition, in the U.S. existing gaps in and poor coordination of financial sector supervision should be fixed by the reorganization of supervisory agencies and responsibilities.<sup>64</sup>

Recommendations that the Federal Reserve be given the responsibility for systemic risk oversight, deserves serious consideration. In its role as lender of last resort the Fed needs to know that the banks it lends to are solvent (it should never lend to insolvent institutions). However, the liquidity crisis and credit crunch involve the entire financial section (mutual funds, pension funds, insurance, investment banks, etc), for which the Fed needs system wide information in order to make sound monetary/liquidity decisions. In exchange for these systemic responsibilities, the Fed should give up its current supervisory responsibilities for the safety and soundness of individual banks (bank holding companies and certain state banks).<sup>65</sup>

In our globalized financial, goods, and labor markets, the monetary, fiscal and regulatory policies of one country, especially the United States, effect and are affected by conditions and policies in other countries. Policies need to take these inter relationships into account. For example, China could react to the falling demand for its output (because of America’s recession) by depreciating its exchange rate to make its output even cheaper in the U.S. and American goods more expensive in China (like the futile, competitive

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<sup>63</sup> *The Economist*, ["Prime Brokers: Do the brokekey-cokey"](#) Oct 23, 2008

<sup>64</sup> American organization of its supervision clearly needs to be restructured to remove duplication and gaps and to improve coordination among supervisory agencies. The structure proposed by Secretary Paulson in March of this year provides a good starting point for this discussion.

<sup>65</sup> Neil Irwin and Binyamin Appelbaum, ["Fed May Gain More Financial Oversight"](#), *The Washington Post*, January 26 , 2009, Page A01.

devaluations of the 1930s) or it could take measures to increase demand from its own citizens (such as improving social safety nets, which would allow the Chinese to lower their very high savings rate). The former policy would worsen the global recession while the later policy would help the recovery. In many instances policies benefit from coordination. Morris Goldstein of the Peterson Institute of International Economics has outlined 10 points for reform "Making the G-20 Summit Work: The 'Ten-Plus-Ten' Plan" that provide a good basis for discussion of what might be needed. The focus of the Washington Summit of the G-20 heads of state November 15, 2008 on broad principles rather than specific "fixes" is in this spirit and is to be welcomed.<sup>66</sup>

The coordination of policies is important to avoid the competitive devaluations of the 1930s that were one of the contributing factors to the severity and duration of the Great Depression. It was precisely for such purpose that the IMF was created at Bretton Woods following World War II. Similarly its recent loans to Iceland, Ukraine and Hungary are classic uses of the IMF's resources to supplement for the sudden drop in international capital flows that are part of the current crisis giving the borrowing country time to adjust without imposing trade and capital restrictions.

Similarly the globalization of banks and other financial enterprises requires supervision on a global basis. The development of prudential supervision globally, which is based on requiring owners to have a sufficient stake in their firm before taking and investing the deposits or other sources of funds of their customers (capital adequacy), prudently managing risks, and transparency (honest accounting and disclosure of business strategy and condition), has been underway for many years through information sharing arrangements and collaboration on minimum prudential standards set by the Basel Committee on Banking Supervision and other standard setters. The IMF and World Bank have been contributing to the evaluation of financial sector soundness through their assessments of their member countries' financial institutions compliance with these standards of best practice (Financial Sector Stability Assessments). The Financial Stability Forum provides guidance and coordination. These mechanisms have worked well but are works in progress. The architecture of international cooperation and collaboration may need to be strengthened, refined, and/or adjusted but it doesn't need to be reinvented.

Monetary and fiscal policies and financial sector regulation around the world have evolved over recent decades toward a more productive partnership with enterprises and the markets through which they operate. Monetary and fiscal policies have focused on providing a stable economic environment in which business decisions are made. Financial sector regulations have sought to limit excessive risk taking in some areas but more generally have sought to provide the structure and incentives for strong regulation of firm behavior by the market. The job is not done and improvements are clearly needed, but we must try to avoid throwing the baby out with the bath water.

The increases in the federal government's deficit from financial sector bailouts and the recession (despite stimulus package efforts to minimize them) complicate the

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<sup>66</sup> White House: ["Fact Sheet: Summit on Financial Markets and the World Economy"](#) November 15, 2008.

Obama administration's daunting task of addressing America's huge unfunded liabilities, which must be reduced and/or financed in the near future if the United States is to avoid fiscal default, a prospect almost as horrifying as global nuclear war. The new President has promised to address this problem soon and we wish him well.

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<sup>i</sup> Warren Coats, retired from the International Monetary Fund in 2003 as assistant director of the Monetary and Financial Systems Department, where he lead technical assistance missions to central banks in more than 20 countries. He has been the Senior Monetary Policy Advisor to the Central Bank of Iraq for BearingPoint since May 2004 and is a Director of the Cayman Islands Monetary Authority. His most recent book, *One Currency for Bosnia: Creating the Central Bank of Bosnia and Herzegovina*, was published in November, 2007. He has a BA from the University of California, Berkeley, and a PhD in economics from the University of Chicago.