



JOINT ECONOMIC COMMITTEE

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FINANCIAL MELTDOWN AND POLICY RESPONSE

Introduction. During the week of September 13-20, 2008, the United States confronted the worst global financial crisis in almost a century. Credit markets, which are the circulatory system of the U.S. economy, seized up. The Federal Reserve was unable to revive credit markets through massive liquidity injections. Share prices plummeted, and a run began on money market mutual funds.

Federal Reserve Chairman Ben Bernanke and Secretary of the Treasury Henry Paulson determined that the *ad hoc* approach that the federal government had been taking to resolve this crisis was not working. Instead, the federal government needed a comprehensive plan that would resolve the uncertainty about value of impaired mortgage-related financial assets and the solvency of financial institutions holding these assets.

Secretary Paulson asked Congress to authorize the Treasury to purchase and liquidate up to \$700 billion of impaired financial assets from financial institutions. Both credit and equity markets had a favorable initial response, but the subsequent reaction was less positive.

Underlying Causes. The primary cause for this global financial crisis was the popping of the U.S. housing bubble in the second quarter of 2006 and the subsequent steep decline in U.S. housing prices. Falling housing prices revealed speculative excesses and unsound lending practices in housing markets. During the bubble years, the federal government encouraged depository institutions and mortgage bankers through various affordable housing and community reinvestment regulations to extend subprime residential mortgage loans to low income families. Investment banks securitized these subprime mortgage loans into subprime residential mortgage-backed securities (RMBS) and subprime collateralized mortgage obligations

(CMOs). Investment banks sold subprime RMBS and tranches of subprime CMOs to financial institutions around the world. After the U.S. bubble popped, many subprime borrowers could not refinance their existing loans. Default and foreclosure rates on these subprime mortgage loans skyrocketed.

Falling housing prices also revealed the vulnerabilities of the alternative financial system based on securitization and highly leveraged non-depository financial institutions (such as Fannie Mae, Freddie Mac, and independent investment banks) that had developed over the last three decade. This alternative to the bank-centric financial system performed the same economically vital, but inherently risky functions of intermediation and liquidity and maturity transformation traditionally performed by commercial banks and other depository institutions. These vulnerabilities, which were the lack of adequate capital standards, the lack of a lender of last resort, and opaque structured credit products, were the secondary cause of this crisis.

A number of mistaken government policies and misaligned private incentives helped to inflate the U.S. housing bubble and contributed to vulnerabilities of the alternative financial system. Two previous Republican JEC studies¹ documented

¹ Robert P. O'Quinn, *The U.S. Housing Bubble and the Global Financial Crisis: Housing and Housing-Related Finance*, JEC Study, 110th Cong., 2nd sess., May 2008.

Found at <http://www.house.gov/jec/news/Housing%20Bubble%20study.pdf>; and Robert P. O'Quinn, *The U.S. Housing Bubble and the Global Financial Crisis: Vulnerabilities of the Alternative Financial System*, JEC Study, 110th Cong., 2nd sess., May 2008. Found at

these policy mistakes and private incentive factors in detail.

Independence is an Unsustainable Business Model for Investment Banks. The business model of major investment banks as independent institutions is an artificial construct of the legal separation of commercial and investment banking in the *Banking Act of 1933* (often referred to the *Glass-Steagall Act*) that proved unsustainable after financial services deregulation in an adverse economic environment. This is another example of how well intentioned government regulations often distort economic decision-making and produce structurally weak financial institutions that cannot survive outside of a highly regulated environment and favorable economic conditions.

Universal banking (i.e., the provision of both commercial and investment banking functions within the same financial services firm) is the surviving business model. Of the five major investment banks on Wall Street at the beginning of 2008, none remain as independent entities.

During the last three decades, financial services deregulation increased competition and eroded the excess profits that independent investment banks had traditionally earned from brokerage services and the underwriting of debt and equity securities. To increase fee income, independent investment banks began to underwrite increasingly complex structured credit products, including subprime RMBS and CMOs.

Independent investment banks also sought to increase their spread income (i.e., the difference between the income from financial assets in proprietary portfolios and the interest expense on borrowed funds). From the early 1990s through 2007, independent investment banks funded a large increase in the size of their proprietary portfolios through short-term debt (i.e., repurchase agreements, commercial paper, and secured and unsecured lines of credit with commercial banks).

To achieve the high returns on equity to which independent investment banks were accustomed,

http://www.house.gov/jec/studies/2008/The_US_Housing_Bubble_June_2008_Study.pdf.

the leverage ratios at independent investment banks ballooned relative to the average leverage ratio at commercial banks and saving institutions. At the end of the first quarter in 2008, the leverage ratios at Morgan Stanley, Lehman Brothers, Merrill Lynch, and Goldman Sachs were 31.8, 30.7, 27.5, and 26.9, respectively, compared with an average of 8.8 for all U.S. commercial banks and savings institutions.

Once the global financial crisis began on August 9, 2007, both commercial banks and investment banks incurred significant credit losses on subprime residential mortgage loans and write-downs on subprime RMBS and tranches of CMOs. Commercial banks were better able to absorb these credit losses and write-downs than independent investment banks because commercial banks had significantly higher capital and loss reserve ratios than independent investment banks.

During the first nine months of the global financial crisis, financial firms were able to raise new equity capital to absorb most of their credit losses and write-downs. However, sovereign wealth funds and private investors became increasingly unwilling to invest additional equity capital as share prices declined. The market has forced a general deleveraging and fire sales of financial assets that have been especially stressful for independent investment banks. As the leverage ratios at independent investment banks declined, the returns on equity at independent investment banks fell, and the ability to attract new investments in the equity of independent investment banks diminished.

The rapid expansion of capital and employment in the financial services industry during the boom years of the high-tech stock and real estate bubbles has ended, and a contraction is underway. The exit of independent investment banks from the market through acquisitions or bankruptcies will facilitate the necessary contraction in capital and employment in the financial services industry before a recovery can begin.

Fair Value Accounting. Fair value accounting (also known as mark-to-market accounting), which was adopted after the bankruptcy of Enron in 2002, exaggerated the real losses that financial institutions had incurred on their portfolios of subprime RMBS

and CMOs when these institutions made their quarterly financial reports. Fair value accounting requires financial institutions to use econometric models to estimate the market value of illiquid financial assets (referred to as level three assets) based on various price inputs.

When a distressed financial institution sells one of these illiquid financial assets under stressful market condition, this “fire sale” price establishes a new fair value for similar assets even if a non-distressed seller could obtain a significantly higher price under normal market conditions. Under fair value accounting, financial institutions have made significantly larger write-downs of the subprime RMBS and CMOs on their balance sheets than the actual losses that these financial institutions are likely to incur if they were to hold these assets to maturity or sell them under normal market conditions.

Fair value accounting has created a vicious cycle once the global financial crisis began on August 9, 2007. Based on “fire sale” prices, financial institutions have written down the reported value of their subprime RMBS and CMOs. These reported losses eroded their capital and reduced their share prices. In response, financial institutions curtailed credit to some customers, increased their reserves, sought additional equity, and conducted additional “fire sales” that triggered further industry-wide write-downs, new losses, still lower share prices, credit contractions, and the need for additional equity and reserves.

Intervention Principles. Prior to the announcement of Friday September 19, 2008, Chairman Bernanke and Secretary Paulson had intervened in credit markets during the current crisis based on the principles that economist Walter Bagehot had outlined for central bank behavior during crises more than a century ago.² These include:

1. Lend freely to illiquid, but solvent financial institutions based on collateral that would be good under normal market conditions;

² Walter Bagehot, *Lombard Street: A Description of the Money Market* (Homewood, IL: R. D. Irwin, 1963 [1873]).

2. Charge a penalty interest rate to encourage these institutions to return to private funding sources as soon as possible; and
3. Minimize market disruptions from the liquidation of insolvent financial institutions.

Additionally, Secretary Paulson has tried to minimize the moral hazard risk problems that may arise from federal interventions. At a minimum, Paulson has insisted on:

1. Removal of the Board of Directors and replacement of the CEO; and
2. Substantial dilution of existing common and preferred shareholders through warrants (i.e., the right to buy newly issued shares at fixed price in the future) so that most of any future appreciation in the market value of these firms will go to the taxpayers.

Fannie Mae and Freddie Mac. In July 2008, Secretary Paulson asked Morgan Stanley to conduct an independent review of the financial condition of Fannie Mae and Freddie Mac. Morgan Stanley found each of these government-sponsored enterprises (GSEs) would need a capital infusion of at least \$50 billion over the next eighteen months in order to continue their operations.

During August 2008, Federal Reserve and Treasury officials learned that foreign central banks and sovereign wealth funds were reluctant to rollover their large portfolios of GSE debt securities unless both Fannie Mae and Freddie Mac received large capital infusions. On August 26, 2008, Freddie Mac’s then CEO Richard Syron reported to Secretary Paulson that Freddie Mac’s last-ditch effort to raise capital had failed. Chairman Bernanke, Secretary Paulson, and Federal Housing Finance Agency (FHFA) Director James Lockhart concluded neither GSE would be able to raise the necessary capital. That day, Secretary Paulson discussed the situation with President Bush, and the decision was made to place both GSEs under conservatorships.

On September 7, 2008, Director Lockhart announced that the FHFA had placed both Fannie Mae and Freddie Mac under conservatorships. These conservatorships will continue indefinitely

until the FHFA Director determines that these GSEs can operate in a “safe and sound” manner.

1. The FHFA assumed effective control of both GSEs, removing the Boards of Directors and replacing both CEOs. The retired CEO of TIAA-CREF Herbert Allison replaced Daniel Mudd as the CEO of Fannie Mae, and the former CFO of US Bancorp David Moffett replaced Richard Syron as the CEO of Freddie Mac.
2. Each GSE may continue securitizing and guaranteeing RMBS and may replace its existing portfolio of retained mortgages, RMBS, and tranches of CMOs.
3. The FHFA suspended dividends on existing common and preferred shares in both GSEs.
4. The FHFA stopped all lobbying and political activities in both GSEs. The FHFA will review all charitable contributions in both GSEs.

At same time, Secretary Paulson announced that the Treasury was making substantial equity investments in both GSEs.

1. The Treasury purchased (1) \$1 billion of senior preferred stock in each GSE, and (2) warrants to buy up to 79.9 percent of the common shares in each GSE at a nominal price.
2. The Treasury committed to invest up to \$100 billion in each GSE. If the FHFA determines that the liabilities in either GSE exceed its assets at the end of a quarter, the Treasury will contribute cash equal to the difference. In return, the Treasury’s senior preferred stock will increase by the same amount.
3. The senior preferred stock will accrue dividends of 10 percent. Dividends will increase to 12 percent in any quarter in which dividends are not paid in cash and will remain at this rate until all accrued dividends have been paid in cash.
4. Beginning on March 31, 2010, each GSE will pay a quarterly commitment fee to Treasury that will be determined jointly by the FHFA and the Treasury.

5. Each GSE requires the prior consent of the Treasury to:
 - a. Issue stock, redeem stock, or pay dividends (except on the Treasury’s senior preferred stock);
 - b. Sell, transfer, or dispose of assets outside of the normal course of business;
 - c. Acquire, be acquired, or merge with other companies;
 - d. Incur total debt in excess of 110 percent of its total debt on June 30, 2008; and
 - e. Terminate the conservatorship.
6. As of December 31, 2009, each GSE must limit its portfolio of retained mortgages, RMBS, and tranches of CMOs to \$850 billion. Thereafter, each GSE must reduce its portfolio by 10 percent a year until its portfolio is less than \$250 billion.

Secretary Paulson announced the creation of a Government-Sponsored Enterprise Credit Facility (GSECF) that would remain in effect until December 31, 2009.

1. Fannie Mae, Freddie Mac, and the Federal Home Loan Board Banks (FHLB) may borrow from the Treasury through the GSECF based on collateral consisting of GSE-issued RMBS or FHLB advances.
2. All loans will be short-term and have maturities before January 1, 2010.
3. The interest rate will be the London interbank offer rate (LIBOR) plus 50 basis points.
4. The Federal Reserve Bank of New York will value and manage the collateral.

Secretary Paulson also announced the Treasury would purchase up to \$5 billion of GSE-issued RMBS on the open market through December 31, 2008. The Treasury intends to hold these RMBS until maturity.

Lehman Brothers. Lehman Brothers was the fourth largest independent investment bank in the United States. During the weekend of September 13-14, 2008, Federal Reserve and Treasury officials determined that Lehman Brothers was probably

insolvent. Both Bank of America and Barclays broke off negotiations to acquire Lehman Brothers when Federal Reserve and Treasury officials made it clear that the federal government would not assist any buyers of Lehman Brothers.

On Monday September 15, 2008, Lehman Brothers filed for Chapter 11 (reorganization) bankruptcy. In the bankruptcy filing, the firm listed debts of \$613 billion and assets of \$639 billion. Because of the bankruptcy, mutual funds (including funds sponsored by Franklin Advisers, Pimco, and Vanguard) are expected to lose at least \$86 billion of their \$143 billion investment in Lehman Brothers debt securities.

On Tuesday September 16, 2008, Barclays agreed to buy Lehman Brothers' U.S. investment banking unit for \$1.75 billion, saving about 9,000 jobs. Other units are currently for sale.

On Monday September 22, 2008, Noruma Holdings, Japan's largest investment bank, agreed to buy the Asian operations of Lehman Brothers for \$225 million.

Merrill Lynch. Once the negotiations to acquire Lehman Brothers broke down, Bank of America began negotiations to acquire Merrill Lynch. On Monday September 15, 2008, Bank of America announced that it planned to acquire Merrill Lynch by exchanging 0.8595 shares of its common stock for each Merrill Lynch common share, valuing Merrill Lynch at \$29 a share. The total value of this acquisition is \$44 billion. On Friday September 12, 2008, Merrill Lynch closed at \$17.05 a share.

American International Group (AIG). AIG is the world's largest insurer with 74 million customers in 130 countries and \$1.04 trillion of assets. AIG encountered severe liquidity problems primarily because of uncertainty about the ultimate size of the losses in its portfolio of credit default swaps (CDS) for subprime RMBS and CMOs and the resulting erosion of AIG's capital. AIG has outstanding CDS of \$441 billion. AIG's losses have been heavily concentrated in the capital markets segment of its financial services division that underwrote CDS. AIG has also suffered smaller losses in mortgage insurance. In addition to recognized losses, Morgan Stanley estimated that

AIG has unrealized losses of \$24 billion. Other AIG units (i.e., life insurance and retirement services, general insurance, and asset management) and other segments in financial services (i.e., consumer finance and aircraft leasing) are profitable.

Over the weekend of September 13-14, 2008, credit rating agencies threatened to downgrade AIG unless it could raise \$40 billion through asset sales. On Monday morning September 15, 2008, New York Governor David Patterson permitted AIG to upstream \$20 billion from its regulated insurance subsidiaries to the parent firm until asset sales could be completed. On Monday afternoon, the Federal Reserve (1) refused to provide a \$40 billion bridge loan to AIG, and instead (2) tasked JPMorgan-Chase and Goldman Sachs to secure \$75 billion in private bridge financing for AIG. On Monday night, however, A. M. Best, Fitch, Moody's, and Standard & Poor's downgraded AIG.³ These downgrades triggered \$14.5 billion of additional collateral requirements, and contract terminations requiring payments of \$5.4 billion.

On Tuesday September 16, 2008, investors paid \$5.2 million up front plus \$500,000 annually to protect \$10 million of AIG debt against default for five years, up from \$3.3 million up front on Monday. Thus, the market thought AIG's bankruptcy was inevitable without federal government assistance.

That day, it became clear that AIG could not secure bridge financing from private sources. Federal Reserve and Treasury officials concluded that AIG's bankruptcy "could add to already significant levels of financial market fragility and lead to substantially higher borrowing costs, reduced household wealth, and materially weaker economic performance." RBC Capital Markets analyst Hank Calenti estimated that AIG's bankruptcy would cause \$180 billion of additional losses in financial firms.

³ Fitch cut AIG's rating two notches to A from AA-minus. Moody's Investors Service reduced AIG's rating two notches to A2 from Aa3. Standard & Poor's slashed AIG's long-term credit rating three notches to A-minus from AA-minus.

Since financial firms are currently having difficulty raising capital, Federal Reserve and Treasury officials feared that additional losses at this time could force many banks to contract their lending, aggravating the economic downturn. Moreover, many money market mutual funds own short-term AIG debt securities. Federal Reserve and Treasury officials feared that AIG's bankruptcy would cause a number of money market mutual funds to "break the buck" (i.e., its net asset value fell below \$1-a-share level), possibly triggering widespread panic.

Because of these fears, the Federal Reserve decided to provide an \$85 billion bridge loan to AIG for 24 months at a floating interest rate of 3-month LIBOR plus 850 basis points (equal to 11.38 percent on Tuesday September 16, 2008). AIG pledged all of its assets, including the stock in its subsidiaries, as collateral. AIG will repay the loan through asset sales. The risk to the Federal Reserve from this loan is minimal since analysts believe the AIG's break-up value is substantially greater than the loan amount. For example, Bijan Moazami, an analyst at Friedman, Billings, Ramsey, estimated that AIG has a break-up value of \$150 billion.

In exchange, the Federal Reserve received warrants to purchase up to 79.9 percent of AIG's common shares at a nominal price. The Federal Reserve must approve any dividends paid on AIG's common or preferred shares while the loan is outstanding. At the insistence of Secretary Paulson, former Allstate CEO Edward Liddy replaced Robert Willumstad as AIG's CEO.

Federal Reserve. In the wake of the bankruptcy of Lehman Brothers, the Federal Reserve took a number of steps to relieve the severe liquidity stress in credit markets:

1. On Sunday September 14, 2008, the Federal Reserve:
 - a. Expanded the eligible collateral for the Primary Dealer Credit Facility⁴ to include non-investment debt securities and equity securities;

⁴ The Primary Dealer Credit Facility provides short-term loans to investment banks.

- b. Expanded the eligible collateral for the Term Securities Lending Facility⁵ to include all investment-grade debt securities;⁶
 - c. Increased the total funds available under the Term Securities Lending Facility from \$175 billion to \$200 billion; and
 - d. Organized a consortium of 10 banks to lend up to \$7 billion each for a total of \$70 billion to financial firms that come under liquidity stress because of the bankruptcy of Lehman Brothers.
2. On Monday September 15, 2008, the Federal Reserve injected \$20 billion into financial markets through open market operations.
3. On Tuesday September 16, 2008, the Federal Reserve left its target federal funds rate unchanged at 2.00 percent. However, the Federal Reserve injected \$50 billion of liquidity into financial markets through open market operations. Simultaneously, the Bank of Japan, the Bank of England, and the European Central Bank injected \$23.8 billion, \$36 billion, and \$100.2 billion, respectively.
4. On Wednesday September 17, 2008, the Treasury announced a Supplementary Financing Program to sell additional Treasury bills beyond the federal government's funding needs to provide cash to the Federal Reserve. The initial amount was \$40 billion.
5. For the week ending on Wednesday September 17, 2008, the Federal Reserve increased:
 - a. Loans to commercial banks and other depository institutions from \$23.6 billion to \$33.5 billion;
 - b. Loans to Primary Dealers (i.e., independent investment banks) from zero to \$59.8 billion; and

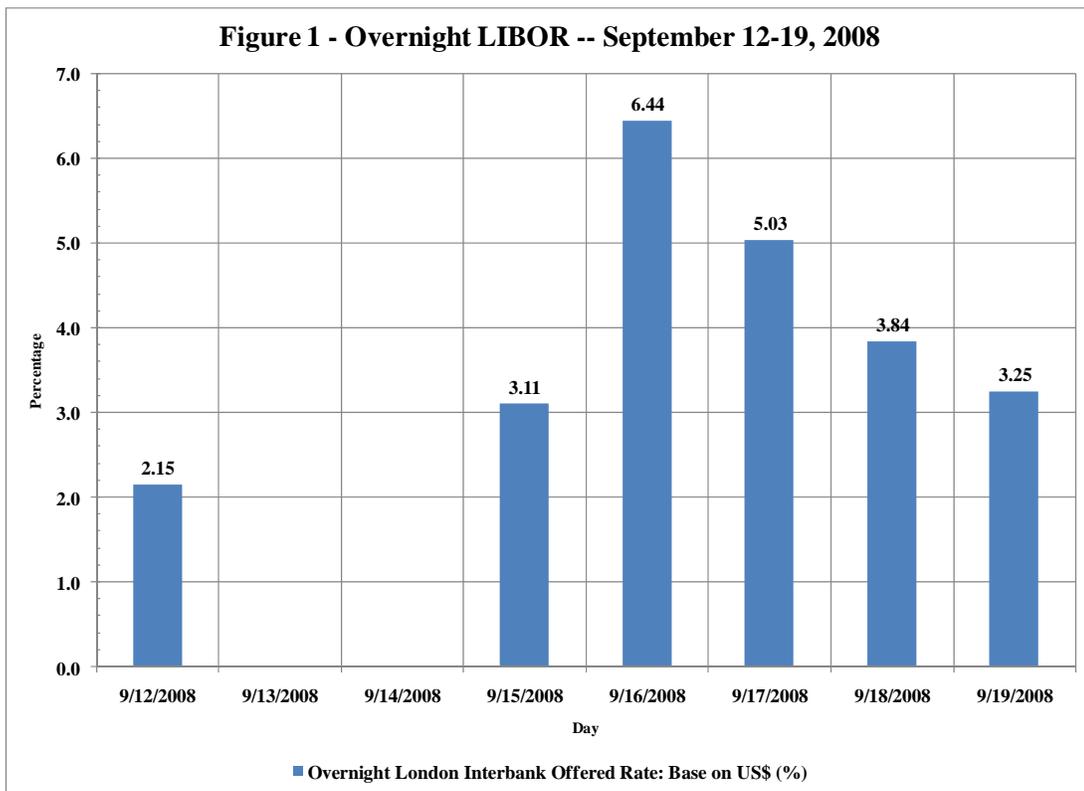
⁵ The Term Securities Lending Facility allows investment banks to borrow Treasuries debt securities in exchange for other eligible debt securities.

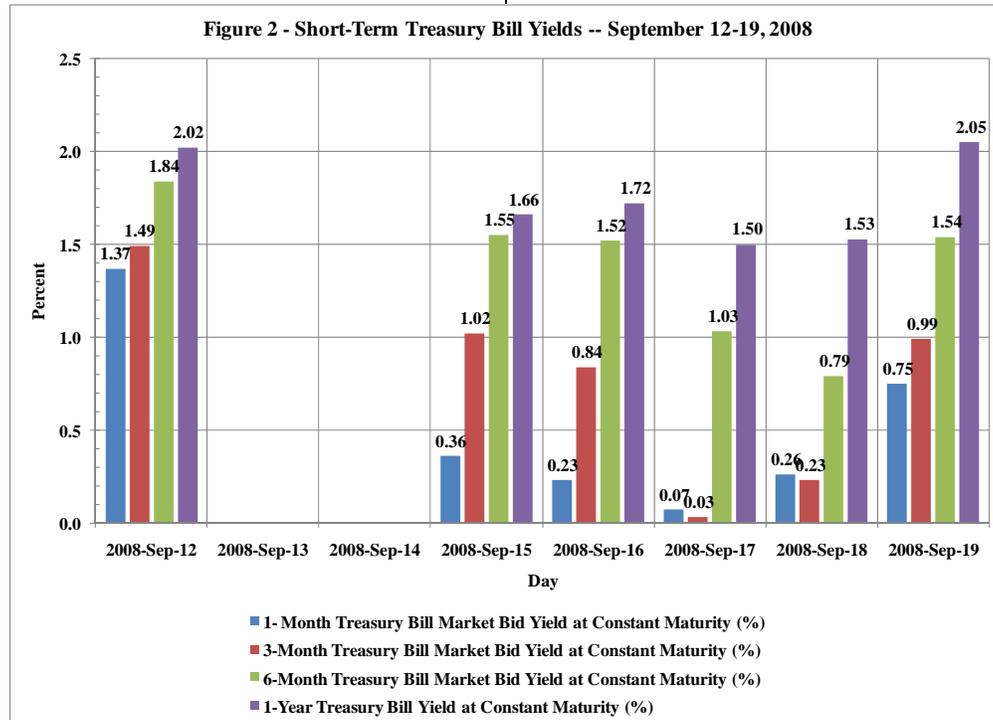
⁶ Previously, only Treasury debt securities, agency debt securities, and AAA-rated mortgage-backed and asset-backed securities were eligible.

- c. Overnight and term securities lent to Primary Dealers from \$117.3 billion to \$127.3 billion.
- 6. At 3 a.m. EDT on Thursday September 18, 2008, the Federal Reserve expanded its currency swap lines with the European Central Bank by \$55 billion to \$110 billion and with the Swiss National Bank by \$15 billion to \$27 billion. The Federal Reserve established swap lines with the Bank of Japan (\$60 billion), the Bank of England (\$40 billion), and the Bank of Canada (\$10 billion). This allowed the

European Central Bank to auction \$40 billion in short-term U.S. dollar credit to European banks. Moreover, the Federal Reserve injected an additional \$55 billion of liquidity into financial markets through open market operations.

Despite these aggressive measures to relieve stress in credit markets, financial firms hoarded what liquidity they had and scrambled for more. This caused the federal funds rate to peak at 6 percent, far above its target rate of 2 percent. Moreover, overnight rates for loans between banks spiked (see Figure 1).





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There was a general flight to quality that produced extraordinary demand for Treasury debt securities. Consequently, short-term Treasury yields fell to levels not seen in more than fifty years (see Figure 2).

Financial Precipice. The United States was on the edge of a financial precipice. Private credit markets began to seize up. The issuance of investment-grade corporate bonds and commercial paper virtually ceased.

Overnight borrowing costs for major corporations soared. *The Wall Street Journal* reported Ford Motor Credit paid 7.5 percent for its overnight borrowing compared with the 2.5 percent that it would normally pay with a 2 percent target for the federal funds rate. General Electric paid 3.5 percent.

Share prices dropped worldwide. On Monday September 15, 2008, the Dow Jones Industrial Average fell by 505 points, or 4.4 percent, to close at 10,917 points. On Tuesday, the Dow Jones Industrial Average rose by 142 points, or 1.3 percent, to close at 11,059 points. On Wednesday, the Dow Jones Industrial Average fell by 449 points, or 4.1 percent, to close at 10,610 points.

Short sellers launched bear raids that drove down the shares of Goldman Sachs and Morgan Stanley. During intraday trading on Thursday September 18, 2008, Goldman Sachs fell to 88.69, down 42.5 percent from its close on Friday September 12, 2008, while Morgan Stanley dropped to 11.92, down 63.3 percent from its Friday close.

In response to its perilous condition, Morgan Stanley simultaneously (1) entered into merger negotiations with Wachovia, and (2) approached the Chinese government for a large equity infusion from the PRC's sovereign wealth fund or its state-owned financial institutions. This could increase the PRC's equity interest in Morgan Stanley from less than 9.9 percent up to 49.9 percent.

Shares continued to plunge on Thursday September 18, 2008. The Dow Jones Industrial

Average reached an intraday low of 10,459 points. Then, during the last hour of trade, Charlie Gasparino broke the story on CNBC that:

1. Chairman Bernanke and Secretary Paulson were favorably disposed to a “good bank, bad bank,” Resolution Trust Corporation (RTC)-type plan to buy and dispose of bad mortgage-related financial assets; and
2. They would present this plan to Congressional leaders later in the day.

The Dow Jones Industrial Average skyrocketed from its intraday low and closed up 410 points, or 3.9 percent, to 11,020.

Breaking the Buck Causes Runs on Money Market Mutual Funds. On Monday September 15, 2008, the \$62 billion Reserve Primary Fund, a money market mutual fund, “broke the buck” because of its investment in Lehman Brothers’ short-term debt securities. The Reserve Primary Fund suspended redemptions for one week.

On June 30, 2008, money market mutual funds had total assets of \$3.3 trillion of assets. Among these assets, money market mutual funds held \$701 billion of commercial paper, or about 40 percent of all commercial paper outstanding. “Breaking the buck” at the Reserve Primary Fund caused investors to question unnecessarily the soundness of other money market mutual funds.

Irrational runs on money market mutual funds began. For the week ending on Wednesday September 17, 2008, investors redeemed \$145 billion from their money market mutual funds. On Thursday September 18, 2008, institutional money managers sought to redeem another \$500 billion, but Secretary Paulson intervened directly with these managers to dissuade them from demanding redemptions. Nevertheless, investors still redeemed another \$105 billion. If the federal government were not to act decisively to check this incipient panic, the results for the entire U.S. economy would be disastrous.

1. To satisfy redemptions, money market mutual funds slashed their holdings of commercial paper. Commercial paper outstanding fell by \$52 billion during the week ending on Wednesday September 17, 2008 as money

market funds refused to rollover commercial paper. If this trend continued, major non-financial firms would

- a. Lose their primary source for short-term borrowing, and
 - b. Call upon their back-up lines of credit with commercial banks.
2. Given the extreme funding problems commercial banks were encountering during the week, commercial banks would either:
 - a. Slash credit to small- and medium-size non-financial firms and households to meet the line of credit commitments to large non-financial firms, or
 - b. Not be able to fulfill the line of credit commitments to large non-financial firms at all.
 3. The result would be a disabling credit contraction that would trigger a severe and lengthy recession with large declines in production and employment, further erosion in household wealth, and a significant increase in the federal budget deficit as countercyclical outlays soared and tax receipts dwindled.

Birth of a Comprehensive Plan. This run forced Chairman Bernanke and Secretary Paulson to reassess the federal government’s previous *ad hoc* approach to the global financial crisis. Together Bernanke and Paulson concluded a comprehensive plan was necessary to (1) restore confidence and (2) kick start credit markets into functioning again.

To stop the runs on money market mutual funds and to revive the market for commercial paper, Chairman Bernanke and Secretary Paulson acted swiftly on Friday September 19, 2008.

1. Secretary Paulson announced a temporary program through which the Treasury will use the \$50 billion in the Exchange Stabilization Fund to protect investors in money market mutual funds from any losses should their fund “break the buck” during the next year. Money market mutual funds will pay an insurance premium to the Treasury for this guarantee.

2. The Federal Reserve established two loan facilities to help money market mutual funds meet any demand for redemptions.

- a. The Federal Reserve will extend non-recourse loans of up to \$230 billion to banks and other depository institutions to buy investment-grade asset-backed commercial paper from money market mutual funds.
- b. The Federal Reserve will extend non-recourse loans to primary dealers of up to \$69 billion to buy short-term debt securities of Fannie Mae, Freddie Mac, or FHLBs from money market mutual funds.

During Thursday evening September 18, 2008, Chairman Bernanke and Secretary Paulson discussed their proposal for a comprehensive plan to solve the global financial crisis with Congressional leaders. As initially proposed, the plan would:

1. Authorize the Treasury to purchase up to \$700 billion (equal to 4.9 percent of GDP) of impaired mortgage-related financial assets including residential mortgage loans, commercial mortgage loans, RMBS, commercial mortgage-backed securities (CMBS), or CMOs from U.S.-headquartered financial institutions; and
2. Authorize the Treasury to manage and dispose of these assets in manner promote stability in financial markets and protects the interests of taxpayers.

In addition, the Treasury announced that it was increasing the size of its previously announced purchase of GSE-issued RMBS from \$5 billion to \$10 billion.

At the same time, securities regulators around the world temporarily tightened their restrictions on short sales. On Thursday September 18, 2008, the Financial Services Authority placed a temporary ban on short sales of financial services stocks in United Kingdom. On the same day, the Securities and Exchange Commission (SEC) strengthened its rule about covered short sales. On Friday September 19, 2008, the SEC also placed a

temporary ban on short sales of the stocks of 799 financial services firms through October 2, 2008.

Stress in credit market conditions finally began to ease on Friday. The overnight LIBOR fell from 3.84 percent on Thursday September 18, 2008 to 3.25 percent on Friday September 19, 2008.

Stock markets around the world rallied on this news. On Friday September 19, 2008, the Dow Jones Industrial Average rose by 369 points, or 3.3 percent, closed at 11,388 points. Despite a wild ride, the Dow Jones Industrial Average was down only 0.3 percent on the week. However, the overnight LIBOR remains 110 basis points higher than a week ago.

As of the writing of this research report, there are a number of question about the plan that Chairman Bernanke and Secretary Paulson have yet to answer:

1. How will the Treasury buy these impaired financial assets? Reports suggest that the Treasury is planning to use reverse auctions.
2. What price will the Treasury pay for these impaired financial assets? If the Treasury pays the deeply discounted price indicated by fair value accounting, the Treasury may earn a profit over time on the disposition of these impaired financial assets. If the Treasury pays a substantially higher price, the Treasury will effectively subsidize the financial institutions that are selling these impaired financial assets, and the Treasury will be more likely to incur losses on the disposition of these impaired financial assets.
3. How will the Treasury dispose of impaired financial assets? Will the Treasury immediately repackage and resell some of these assets to long-term investors? Or will the Treasury hold these assets until maturity?
4. Will the Treasury facilitate the restructuring of impaired residential mortgage loans by reducing the principal balance to a reasonable percent of the current value of the collateral and lowering the interest rate to help financially stressed borrowers stay in their homes?

- Weekend and Monday Developments.** Several important developments occurred over the weekend of September 20-21, 2008 and on Monday September 22, 2008.
1. Secretary Paulson agreed to several changes to the initial plan:
 - a. The Treasury would be authorized to expand to purchase all impaired financial assets, not just mortgage-related financial assets;
 - b. The Treasury would be authorized to purchase impaired financial assets from foreign-based financial institutions with substantial operations within the United States; and
 - c. An oversight board would monitor the implementation of the plan.
 2. As for the federal guarantee of money market mutual funds,
 - a. Secretary Paulson limited the federal guarantee of money market mutual funds to accounts in existence as of September 19, 2008. New accounts opened thereafter would not be covered by the federal guarantee.
 - b. Secretary Paulson extended the federal guarantee to tax-exempt money market mutual funds that invest exclusively in short-term municipal debt securities.
 3. Certain policymakers are currently pressing the Treasury to agree to:
 - a. Taking an equity stake in any financial institution from which the Treasury purchases impaired financial assets;
 - b. Limiting compensation in any financial institution from which the Treasury purchases impaired financial assets;
 - c. Amending bankruptcy law to allow judge to reduce mortgage loan balances; and
 - d. Supporting additional programs to help delinquent homeowners to remain in their residences.
 4. On Monday September 21, 2008, *The Wall Street Journal* reported an agreement between Congressional leaders and Treasury that the Treasury could acquire, but would not be required to acquire, warrants in financial firms from which the Treasury buys impaired financial assets. Other differences remain unresolved.
 5. On Sunday September 21, 2008, both Goldman Sachs and Morgan Stanley received emergency approval from the Federal Reserve to become Bank Holding Companies (BHCs). As of Friday September 26, 2008, there will be no independent major investment banks in the United States.
 - a. As BHCs, both firms may open or acquire commercial banks and are eligible to borrow from the Federal Reserve. Moreover, the Federal Reserve becomes their primary federal regulator instead of the SEC.
 - i. Goldman Sachs, which had \$20 billion of deposits in two subsidiaries, will establish GS Bank USA.
 - ii. Morgan Stanley, which had \$36 billion of deposits in its Utah-based industrial bank, will convert it into a national bank.
 - b. Analysts expect both Goldman Sachs and Morgan Stanley to continue reducing leverage and raising capital.
 - i. Morgan Stanley ended merger negotiations with Wachovia. On Monday September 22, 2008, Mitsubishi UFJ Financial Group Inc. agreed to invest up to \$8.4 billion in Morgan Stanley for an equity stake of between 10 percent and 20 percent.
 6. On Monday September 28, 2008, the Federal Reserve narrowed its presumption of control rule to allow private equity firms to make larger equity investments in banks without becoming subject to regulation as a bank holding company. This expands the pool of capital available to banks and their holding companies.

7. On Monday September 28, 2008, the SEC expanded its temporary ban on short sales by adding 71 corporations, including General Electric, General Motors, and other corporations with large financial subsidiaries. Many other developed countries have adopted similar temporary bans on short sales. The SEC also limited the scope of its ban by allowing traders in *bona fide* market making and hedging activities to short.

The Friday's euphoria dissipated as economists and financial analysts cautioned that Paulson's plan (1) will be costly, (2) cannot immediately stop the decline in U.S. housing prices, and (3) will take months, if not years, to work. On Monday September 22, 2008, the Dow Jones Industrial Average fell by 373 points, or 3.3 percent, to close at 11,016 points. The U.S. dollar also fell in foreign exchange markets over mounting fears about the deterioration in the federal government's fiscal position.

Hedge Funds. Independent investment banks have been a major source of short-term credit to hedge funds through secured lines of credit and repurchase agreements. As of December 31, 2007, prime brokers provided hedge funds \$1.4 trillion to support \$2.7 trillion in assets. Formerly independent investment banks will continue to sell financial assets and liabilities to reduce their leverage ratios as they adjust to their new status as or within bank holding companies. Thus, the short-term credit that had been readily available to hedge funds may contract significantly. This contraction may force some hedge funds into bankruptcy.

Conclusion. Much of the alternative financial system imploded during September 2008. Fannie Mae and Freddie Mac have been placed into conservatorships. As of September 26, 2008, there will not be any independent major investment banks. There was very little that any policymaker could have done to stop this collapse once the financial dominos began to fall. The Federal Reserve and the Treasury have intervened deftly in credit markets to limit the damage to the broader U.S. economy.