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UNCHARTED WATERS: THE U.S. POLICY RESPONSE TO THE FINANCIAL AND ECONOMIC CRISIS

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Uncharted Waters: The U.S. Policy Response to the Financial and Economic Crisis

"There is no reason why we should not feel ourselves free to be bold, to be open, to experiment, to take action, to try the possibilities of things. And over against us, standing in the path, there is nothing but a few old gentlemen tightly buttoned-up in their frock coats, who only need to be treated with a little friendly disrespect and bowled over like ninepins.

Quite likely they will enjoy it themselves, when once they have got over the shock."—John Maynard Keynes and Hubert Henderson, "Can Lloyd George Do It?," May 10, 1929

"There will be a time when we will be able to come to you and say, here's how the unwinding process will work, but it's too early to do that now."—Treasury Secretary Timothy Geithner, testimony before the Senate Banking Committee, May 20, 2009

"My colleagues and I believe that accommodative policies will likely be warranted for an extended period. At some point, however, as economic recovery takes hold, we will need to tighten monetary policy to prevent the emergence of an inflation problem down the road. …We are confident we have the necessary tools to withdraw policy accommodation, when that becomes appropriate, in a smooth and timely manner." —Federal Reserve Chairman Ben Bernanke, July 21, 2009

Introduction

The U.S. policy response to the financial crisis has been swift, unprecedented in scope, and overwhelming in size. Whether it has succeeded in moderating and shortening the recession—and whether it carries long-term costs that prove greater than any shorter-term benefits—is less clear and will no doubt be debated for decades to come. While we normally do not discuss policy actions at any length in our publications, the efforts to resolve the ongoing economic and financial crisis are impacting financial markets in fundamental ways, necessitating both a review of the government's programs and some analysis of the risks and, briefly, implications for investors. We conclude that (i) government policies appear to have been much more effective in bolstering the financial system and revitalizing capital markets than in stimulating the economy; (ii) capital markets remain fragile; and (iii) the policy package has introduced a number of serious investment-related risks, particularly the possibility of inflation and the chance that government involvement in the economy will affect markets much more than it has in the past. Investors must consider carefully how government policy and other key elements of the macroeconomic environment may affect different asset classes and investment strategies and keep a close eye on whether their managers are appropriately incorporating such considerations into their bottom-up analysis, as they are central to understanding who the winners and losers are likely to be.

An Overview of the Policy Response

What began as a monetary response to a liquidity squeeze eventually grew into a comprehensive federal effort to support the financial system, prevent deflation, and reflate the economy. The size, multifaceted nature, and continued evolution of the policies designed to achieve these goals make a complex whole that is perhaps best understood by looking first at the conditions to which the authorities were responding.

The Backdrop

Although the housing boom peaked in mid-2006 and there was a mini-panic over February and March 2007 as a result of the failure of some subprime lenders, the June 2007 failure of two Bear Stearns hedge funds that had invested heavily in the subprime market is generally viewed as the start of the financial crisis (see Table A for a timeline of key market events and U.S. government actions). The severe liquidity problems that ensued revealed that the market boom had been turbo-charged by dangerously high leverage (shown most dramatically in the housing market and on financial institution balance sheets), difficult-to-parse financial instruments and corporate structures, an unclear distribution of risk, and deeply flawed risk management systems. The Federal Reserve Board (Fed) responded to the immediate liquidity squeeze in the summer of 2007 by lowering policy interest rates.

As equity markets hit an all-time nominal high in October 2007, the Fed proceeded with further rate cuts in response to worrisome economic data and concerns about the subprime fallout on the broader housing and financial sectors.[1] In February 2008 President Bush signed the $168 billion Economic Stimulus Act. The following month the Fed created the Primary Dealer Credit Facility (PDCF), which provided overnight loans to primary dealers in exchange for certain collateral. On July 30 the Housing and Economic Recovery Act of 2008 (HERA) was enacted, creating the Federal Housing Finance Agency (FHFA) and giving the Treasury broad authority to support FNMA (Fannie Mae), FHLMC (Freddie Mac), and the Federal Home Loan Banks (FHLB). Meanwhile, economic conditions continued to deteriorate and market uncertainty increased as a result of a series of real or feared financial bankruptcies (e.g., Bear Stearns, Indymac, and Washington Mutual) to which the government responded inconsistently. In connection with the failure of Bear Stearns, the Fed invoked a little known and never before used 1991 expansion of its authority to permit firms to exchange their securities for Treasuries, which enabled them to raise money without having to sell such securities at heavy losses. This strategy was to become a bulwark of later Fed action.[2]

If summer 2007 marked the end of the high-leverage, low-risk era, bringing concerns about liquidity and counterparties front and center, the demise of Lehman Brothers in September 2008 dramatically accelerated the meltdown, triggering massive intervention, both in the United States and abroad, to shore up the financial system and avert a self-replicating deflationary cycle. The FHFA placed Fannie Mae and Freddie Mac into conservatorship in September. The $700 billion Troubled Asset Relief Program (TARP)

[1] The National Bureau of Economic Research later determined that the recession began in December 2007.
[2] The Fed has since invoked its emergency powers at least 19 times.

was signed into law on October 3, 2008, as part of the Emergency Economic Stabilization Act of 2008. In November the Fed announced it would purchase hundreds of billions of dollars in direct obligations of, and mortgage-backed securities (MBS) issued by, the housing government-sponsored enterprises (GSEs). On February 10, 2009, new Treasury Secretary Geithner outlined a Financial Stability Plan to "help restart the flow of credit, clean up and strengthen our banks, and provide critical aid for homeowners and for small businesses." A week later, President Obama signed the $787 billion American Recovery and Reinvestment Act of 2009 (ARRA).

Putting the Policy Package in Context

How can we cut through the torrent of programs, acronyms, and numbers to understand and assess the implications of the government's policy to combat the financial crisis and broader economic recession? (Note: The Appendix provides a complete list of the acronyms used in this paper.) Confusion is inevitable given the lag between announcements and actions, uncertainty over the size of many of the 50 or so programs and initiatives, and the fact that different agencies are participating in the some of the same programs. Indeed, estimates of the amount the U.S. government has pledged to combat the crisis vary by *trillions* of dollars.[3] Some programs have largely been funded while others—some highly touted—have only recently started (e.g., TALF, the Term Asset-Backed Securities Loan Facility) or have barely gotten off the ground (e.g., PPIP, the Public-Private Investment Program).

For starters, however, it is clear that federal efforts to combat the financial crisis have dwarfed all previous bailout efforts (Table B). The $280 billion Citigroup rescue alone is about the same size (in real terms) as the savings and loan bailout a generation ago while the $100+ billion AIG bailout, a drop in the bucket as far as the current policy goes, is far more than the *total* of all other bailouts during the 37 years preceding 2008. Bloomberg estimated on March 31, 2009, that the government had pledged $12.8 trillion, or 88.6% of estimated 2008 GDP, in response to the financial and economic crises (Table C). The Federal Deposit Insurance Corporation (FDIC) put the figure at $13.9 trillion. Yet if one considers *all* potential government exposure based upon implicit guarantees, the amount for which the U.S. government is on the hook is much greater. For example, the special inspector general for the TARP program (SIGTARP) estimated in his latest quarterly report to Congress that potential federal government support could total *$23.7 trillion*, including $7.4 trillion in TARP and other Treasury programs, $7.2 trillion for programs relating to the housing GSEs and other housing initiatives, $6.8 trillion from the Fed, and $2.3 trillion in FDIC programs (Table D).[4] While the circumstances that would cause the SIGTARP's headline figure to be the government's actual cost are almost unthinkable—and the government will recoup some of its cash outlays through program fees and returns on its investment—its net costs are still likely to be huge.

[3] The discrepancies primarily relate to the issue of how to size Federal Reserve Board programs and account for potential federal liabilities.

[4] According to the SIGTARP, this sum "quantifies the gross, not net, exposure that an agency would face should all eligible program applicants request assistance at once to the extent permitted under the program guidelines." Office of the Special Inspector General for the Troubled Asset Relief Program, *Quarterly Report to Congress*, July 21, 2009, p. 138. It includes all support programs announced since the financial crisis began in 2007 and therefore includes some programs that are collateralized or have been terminated or not used. It may also include some double-counting where different federal agencies provide overlapping guarantees.

The Fed's Response

In addition to cutting policy rates aggressively (Table E), the Fed has created 18 programs supporting financial markets. (Timelines corresponding to a number of these are set forth in Table F.)[5] These programs can be roughly divided into those involving asset purchases, those aimed at spurring new lending, and company bailouts.[6] In U.S. history, the only domestic comparison to the scale of the Fed's current intervention is its activity during World War II, while in the current crisis the Bank of England has been the only other central bank to adopt quantitative easing (in the form of asset purchases) on a comparable scale.

Asset Purchases. Asset purchases constitute the bulk of the Fed's actions to date. Such purchases have been directed at (i) reinvigorating the nation's previously frozen credit markets by allowing companies to receive short-term funding and institutions to issue or purchase asset-backed securities (ABS), including mortgage-backed paper, and (ii) stabilizing the money markets.

The largest asset purchase program is the Commercial Paper Funding Facility (CPFF), under which the Fed is authorized to buy up to $1.8 trillion of highly rated commercial paper (CP) with a term of three months or less. The CPFF was a response to the extreme difficulties companies were facing in funding their regular operations through short-term borrowing, which was reflected in a reduction in the amount of outstanding CP to $1.6 trillion in October 2008 from $2.2 trillion in July 2007. The asset-backed segment of the market, which fell from almost $1.2 trillion to $696 billion over this 14-month period, was the largest contributor to the decline. The CPFF has played an important role in supporting the CP market, particularly in the December 2008–January 2009 period (Table G). Nevertheless, while issuance rose sharply after the CPFF was created, it has declined rapidly since the first week of 2009; *the amount of outstanding CP is now the lowest it has been since at least 2000* (Table H).

Fed purchase programs in connection with the housing GSEs are almost as big as the CPFF. These programs are aimed both at shoring up the GSE's balance sheets (through the purchase of up to $200 billion in debt issued by Fannie Mae, Freddie Mac, and the FHLBs) and allowing them to lend (through the purchase of as much as $1.25 trillion in MBS guaranteed by Fannie Mae, Freddie Mac, and the Government National Mortgage Association). The Fed has purchased $111.0 billion of direct GSE obligations (as of August 14) and $1.1 trillion in GSE MBS (as of August 12), primarily from Fannie Mae.[7] As will be discussed later, these purchases, unlike those relating to CP, involve a long-term expansion of the Fed's balance sheet.[8]

The Fed's third biggest asset purchase program, at least potentially, is the TALF pursuant to which the Fed will buy up to $1 trillion in securities backed by credit cards, student loans, auto loans, the Small

[5] Note that the Fed also participates in the TARP.
[6] Even this characterization is somewhat misleading, as asset purchases are intended to support capital markets, thereby promoting new lending.
[7] The Fed also had sold $356.2 billion of GSE MBS. There is no indication that sales are netted against purchases (thereby giving the Fed greater purchasing power) for purposes of calculating whether the purchase limit has been reached.
[8] The Treasury and other agencies also have vast potential liabilities associated with the housing GSEs.

Business Administration, insurance premium finance loans, newly issued and legacy commercial mortgage–backed securities (CMBS), and other debt.[9] Like the CPFF, the TALF is a response to the difficulties firms have faced in raising funds from the capital markets, which have been exacerbated by investors' realization that ABS had been overrated. Asset-backed instruments accounted for 14.8% of corporate debt issuance in 2008 compared with 27.0% in 2006; just $139.5 billion of ABS were issued in all of 2008, well under the $172.3 billion issued in just second quarter 2007, and virtually no ABS were issued from October 2008 through February 2009. The TALF has only been used since March, but has apparently been essential to the (still muted) revival of the asset-backed debt market (Table I). The program was expanded in May to cover debt backed by commercial real estate mortgages, which "accounted for almost half of new commercial mortgage originations in 2007, [but] virtually ceased functioning by mid-2008," according to the Financial Stability Oversight Board.[10] It may be broadened further to cover residential mortgage–backed securities. As of August 6, 2009, about $39.7 billion worth of TALF loans for newly issued, non-mortgage-related ABS, primarily backed by credit card receivables and auto loans, had been issued.

The Fed may also purchase up to $600 billion of money market paper from eligible investors[11] (under the Money Market Investor Funding Facility or MMIFF) and $300 billion in Treasury securities by the end of October. The MMIFF, which has not been used thus far, was a response to the fear engendered in September 2008 when the Reserve Fund became the first money market fund in 14 years to "break the buck" as a result of its exposure to Lehman Brothers. As of August 11, the Fed had purchased $255.3 billion in Treasury securities.

Bank Lending. While the Fed's asset purchase programs are intended to support market liquidity, it has also taken direct action to support commercial bank lending, which has fallen since last autumn in response to concerns about both counterparties and the broader economy (Table J).[12] The decline in lending occurred in spite of the $200+ billion injected into U.S. financial institutions under the TARP, which Secretary Geithner has estimated actually prevented a *drop* of more than $1 trillion in loans.

In terms of size, the Term Auction Facility (TAF) and the Fed's currency liquidity swaps with a host of foreign central banks are the only Fed lending programs comparable in scale to its largest asset purchase initiatives. The TAF, which is intended to free up cash and encourage interbank lending, was created in December 2007 as an alternative route for depository institutions to access short-term funding from the Fed through an auction process. The rationale was that institutions would so fear being stigmatized by their use of

[9] The TALF was created in November 2008 and expanded on February 10, 2009. The original program is sometimes referred to as "TALF 1.0" to distinguish it from the current, expanded program, which is termed "TALF 2.0." The Treasury is also involved with the TALF and can provide up to $80 billion in TARP funds (though the Fed has used the figure of $100 billion to characterize the Treasury's commitment).

[10] The further expansion of the program to cover CMBS issued before January 1, 2009 ("legacy CMBS") was made on July 2, 2009.

[11] As per the Fed, this includes "U.S. dollar-denominated certificates of deposit and commercial paper issued by highly rated financial institutions and having remaining maturities of 90 days or less."

[12] *The Wall Street Journal* reported on July 27 that the "total amount of loans held by 15 large U.S. banks shrank by 2.8% in the second quarter [compared with the first quarter], and more than half of the loan volume in April and May came from refinancing mortgages and renewing credit to businesses, not new loans." David Enrich and Dan Fitzpatrick, "Loans Shrink as Fear Lingers," *The Wall Street Journal*, July 27, 2009.

the discount window that they would avoid using it even when necessary. While the Fed may lend up to $900 billion under the TAF its maximum balance under the program has been $493.1 billion and the balance as of August 13, 2009, was $233.6 billion.

As for the currency swaps, in order to lower the interest rates that foreign banks charge each other and to keep money flowing internationally, the Fed has entered into agreements pursuant to which it may temporarily provide up to $755 billion in U.S. dollars to foreign banks in exchange for foreign currency. Like the TAF, the program size is well below earlier levels. It peaked at $582.8 billion in December 2008 and the balance at the end of the second quarter was $121.6 billion. Under the Term Securities Lending Facility (TSLF), which was created in March 2008, the Fed may also lend up to $200 billion of Treasuries to primary dealers for a term of 28 days, accepting investment-grade paper (as well as traditional eligible assets) as collateral, to encourage trading in the mortgage market.[13] A maximum of $233.6 billion was lent under the TSLF in the week ending October 1, 2008;[14] as of August 26, 2009, the outstanding balance of the program is zero.

Company Bailouts. While bailouts have received the lion's share of public attention and, as noted earlier, are enormous in both absolute and historical terms (Table B), they account for only a small percentage of the amount of money for which the Fed is potentially on the hook. The Fed has supported AIG to the tune of over $180 billion[15] and JPMorgan Chase with up to $29.8 billion (backing its purchase of Bear Stearns). Together with the FDIC, the Fed is also on the hook with respect to $256.5 billion in troubled assets held by Citigroup.[16] The Treasury has guaranteed another $5 billion of Citigroup's troubled assets and has contributed $50 billion in TARP funds (a total purchase of $25 billion of senior preferred stock [which is being converted to trust preferred shares] under the Targeted Investment Program [TIP] and the Asset Guarantee Program [AGP] as well as $25 billion of senior preferred stock [which is being converted to common stock] under the Capital Purchase Program [CPP]). The Treasury has also provided $45 billion to Bank of America ($20 billion under the TIP and $25 billion under the CPP).

Other Government Policies

The fiscal response to the crisis has also been massive. As noted earlier, two stimulus packages were adopted. The Economic Stimulus Act of 2008 provided $168 billion in tax relief to individuals and businesses. The $787 billion AARA, which was signed in February 2009, is nearly five times as large. The ARRA's biggest component is $288 billion in tax cuts, far more than was contained in the 2008 stimulus bill,

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[13] The Fed's regular securities lending program involves overnight lending and permits eligible assets (Treasury and federal agency securities and AAA-rated residential MBS) to be used as collateral.

[14] The discrepancy between the $234 billion lent under the TSLF and the $200 billion limit was apparently due to lending under the TSLF Options Program (TOP), which offered "added liquidity over periods of heightened collateral market pressures, such as quarter-end dates." The TOP was suspended as of June 25, 2009.

[15] This is composed of the Federal Reserve Bank of New York's $85 billion line of credit (now $60 billion and expected to be further reduced) and up to $52.5 billion (the current balance is now $35.7 billion) in loans to two new limited liability companies. AIG was also allocated $69.8 billion under the TARP, with Treasury purchasing $40 billion of preferred stock and providing a $29.8 billion equity capital facility.

[16] The FDIC is on the hook for $10 billion of this amount.

but this represents only 36.6% of the total package (Table K). Much of the spending will also go to state and local fiscal relief ($144 billion), infrastructure and science ($111 billion), and protecting the vulnerable ($81 billion), while health care ($59 billion), education and training ($53 billion), and energy ($43 billion) also receive substantial funding. According to the Congressional Budget Office (CBO), however, only 11% of the discretionary spending[17] in the stimulus will be disbursed by September 30, 2009, and 47% by September 30, 2010.

A variety of other measures were taken during the period between passage of the stimulus bills, only some of which we will discuss here. In September 2008 the Treasury entered into agreements with Fannie Mae and Freddie Mac, which had been placed into conservatorship under the HERA (the July 2008 legislation that backstopped the housing GSEs), pursuant to under which it committed to buy up to $100 billion (subsequently increased to $200 billion) in senior preferred stock from each of them.[18] The Treasury has also announced a program (also under the HERA) to purchase GSE MBS in the open market (the SIGTARP estimates the potential cost at $314 billion) as well as plans to provide loans of between one week and one month collateralized by Fannie Mae– and Freddie Mac–issued MBS and advances made by the 12 FHLBs. Meanwhile, under the Temporary Liquidity Guarantee Program (TLGP), created last October, the FDIC will guarantee up to $940 billion in newly issued senior unsecured debt of depository institutions.[19] As of June 30, 2009, $345.8 billion of FDIC-backed debt had been issued under the program.

The $700 billion TARP's stated purpose was for the Treasury Department to promote stability in the capital markets through the purchase and insurance of "troubled assets."[20] However, the program almost immediately morphed into the CPP, a plan to inject capital into banks and other financial institutions deemed at risk, in exchange for preferred stock.[21] Under the CPP the Treasury has invested $204.4 billion in 670 banks.[22] The great majority of this investment ($178 billion) occurred during the last three months of 2008, with 214 institutions receiving funding; the largest recipients were JPMorgan Chase, Bank of America, Wells Fargo, and Citigroup ($25 billion each) along with Goldman Sachs and Morgan Stanley ($10 billion each). From the start of 2009 through August 21 an additional 456 institutions received $26.9 billion from the TARP. According to the CBO, "most of the recent recipients have been small private or community-based institutions or S corporations." Indeed, 310 of the 670 recipients have received $10 million or less.

[17] Discretionary spending accounts for 39.1% ($308 billion) of the ARRA compared with 33.9% for entitlements ($267 billion) and 26.9% for revenues ($212 billion). The entitlement and revenue portions of the bill kick in more quickly than does the discretionary spending part.
[18] As of August 13, 2009, Treasury had purchased $44.9 billion in senior preferred stock of FNMA and $50.7 billion in senior preferred stock of FHLMC.
[19] The debt guarantee expires by December 31, 2012. There is also a second component of the TLGP pursuant to which depositors have until December 31, 2009, "unlimited coverage for non-interest bearing transaction accounts if their bank is a participant" in the TLGP. In June 2009 the FDIC sought comment on whether to extend this second component of the program until June 30, 2010.
[20] These are defined as primarily mortgages and mortgage-related instruments, but also any other financial instrument the purchase of which is deemed necessary "to promote financial market stability." The size of the program was later reduced to a maximum of about $699 billion.
[21] The preferred stock carries an initial dividend of 5%, which rises to 9% after five years.
[22] The program limit is $250 billion. The CPP involves investment in debt as well as equity.

The TARP now involves another 11 programs (Table L). These include the TALF ($80 billion), the Automotive Industry Financing Program ($79.3 billion to General Motors and Chrysler[23]), the PPIP ($75 billion),[24] the Systemically Significant Failing Institutions program ($69.8 billion to AIG), the Making Home Affordable Program ($50 billion to mitigate home foreclosures),[25] and the TIP ($20 billion each to Bank of America[26] and Citigroup).[27] Approximately $130 billion to $140 billion in TARP funding has yet to be allocated, an amount that will increase as the Treasury receives further repayments of CPP funds.[28]

Both the TALF and the PPIP involve other agencies. While the former program is primarily operated by the Fed, as discussed above, the Treasury will purchase up to $80 billion of subordinated debt from the special purpose vehicle used by the Federal Reserve Bank of New York to buy and manage collateral provided by TALF borrowers. Both the Fed and the FDIC are involved, meanwhile, in the PPIP. PPIP reflects the TARP's original goal of toxic asset disposal and may involve up to $1 trillion in purchasing power to buy legacy assets. PPIP programs cover legacy loans and legacy securities. The FDIC can provide a debt guarantee of up to a 6:1 leverage ratio on the former. The Legacy Securities Program involves Treasury and private investors investing equity in public-private investment funds (PPIFs), with Treasury also offering debt financing. Treasury and the Fed can also let the PPIFs obtain additional financing from the TALF program.

Evaluating the Policy Package

One of the most striking aspects of the financial and economic crisis has been the relative ease with which massive government intervention in the economy has occurred. It is true that the TARP legislation was initially rejected by the Senate and had to be downscaled slightly. But the consensus supporting the bailout of "too big to fail" firms, the Fed's quantitative easing, and the enactment of two large fiscal stimulus packages has met little intellectual resistance. Over the last two years there has been no "great debate." At least for the time being, Friedman-style monetarism is dead, Bernanke-style monetarism is ascendant, and Keynesianism is back with a vengeance.

While the economic environment and policy response continue to evolve, it looks increasingly likely that the worst case scenario of meltdown and deflation has been averted, at least in the short term. Credit

[23] Of this $79.3 billion, $130.8 million has been repaid.
[24] The Financial Stability Oversight Board puts the figure at $75 billion to $100 billion.
[25] Another $25 billion has been budgeted for the program under the HERA.
[26] Treasury and the FDIC also agreed in January 2009 to provide Bank of America "protection against the possibility of unusually large losses of an asset pool of approximately $118 billion of loans," the "large majority of which were assumed as a result of [its] acquisition of Merrill Lynch." However, Bank of America announced in May after the stress test results were released that it would not move forward with this support. Bank of America has also received almost $6 billion in funding under the Making Home Affordable program.
[27] Other programs include the Unlocking Credit for Small Businesses program ($15 billion to buy securities backed by Small Business Administration loans), the Auto Suppliers Support Program ($5 billion to GM- and Chrysler-related auto suppliers), the Auto Warranty Commitment Program ($600 million for warranties of cars sold during the GM and Chrysler bankruptcy restructuring periods), and the Capital Assistance Program (an as yet undetermined amount of funds to qualified financial institutions).
[28] The SIGTARP put the figure at $131.4 billion (June 30), while the CBO placed it at $142 billion.

markets have improved, but remain in disrepair, and many of the banks' capital positions are arguably much stronger than last fall. Housing remains highly problematic, however, and the economy continues to worsen by many measures, even if the rate of decline has slowed.

The Capital Markets

The Fed's programs have played an important role in easing fears of a systemic financial failure and in reviving capital market activity. These programs have waxed and waned according to the needs of the market (Tables M and N) although fourth quarter 2008 was clearly the high point, as the Fed responded to the failure of Lehman Brothers.[29] The Fed focused on bank borrowing (through the TAF) in late 2007, supporting primary dealers (the PDCF) and money market funds (the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility [AMLF]) in fall 2008, and the commercial paper market (the CPFF) at the close of the year. Lending under all four programs is significantly less today, indicating they are not needed as much.[30] Indeed, as Bridgewater Associates has noted, in 2009 the Fed's liquidity injections have shifted "from reactive filling of liquidity gaps in the financial system to proactive purchases of credit instruments to finance economic expansion." Thus, more attention has been focused of late on the TALF, which is aimed at restoring the asset-backed debt market, and the PPIP, aimed at removing toxic assets from balance sheets. However, the Financial Stability Oversight Board stated in its June 2009 quarterly report to Congress that "[s]ince the rate on most TALF loans for consumer credit ABS is set at 100 basis points above the relevant LIBOR, the spreads are now close to a level at which investors will not find it economical to finance their purchases with TALF."

Meanwhile, lending standards for consumers and businesses have eased somewhat, lending and bond spreads have narrowed dramatically (with the latter now at levels last seen well before the Lehman Brothers bankruptcy), and volatility (as measured by the VIX) is back to about its 23-year average (Tables O through Q). U.S. equity issuance has picked up strongly over the past four months while debt issuance, particularly for non-financials, has been solid in 2009. The strong post–March 9 rally has also contributed to greater confidence in the capital markets. All of this is encouraging since, as Keynes rightly observed long ago, whereas a weakening of speculators' confidence or in credit markets may cause equity prices to collapse, a revival of both is necessary for recovery. Still, the question remains whether the market can function without extraordinary support from the Fed.

U.S. Banks

The improvement in the credit markets has provided a respite for at least some banks, which have benefited from increased underwriting and trading and higher loan spreads. Although there was a good deal

[29] According to Secretary Geithner, "[a]cross the various financial facilities put in place by the Treasury, the Federal Reserve, and the FDIC, we have been careful to set the economic terms at a level so that demand for these facilities will fade as conditions normalize and risk premia recede." Timothy Geithner, "The United States and China, Cooperating for Recovery and Growth," June 1, 2009.

[30] For example, the June 30, 2009, and maximum balances (in parentheses) for five programs were as follows: TAF: $282.8 billion ($493.1 billion); PDCF: $39.1 billion ($111.9 billion); CPFF: $128.1 billion ($349.9 billion); AMLF: $16.7 billion ($145.9 billion); and TSLF: $8.0 billion ($233.6 billion).

of criticism of the methodology of the Supervisory Capital Assessment Program (SCAP or the so-called stress tests), which involved the government's examination of the 19 bank holding companies with more than $100 billion in assets, the market (whether rightly or wrongly) reacted positively to the government's conclusion that nine of the 19 had adequate capital and that $74.6 billion of financing would put the remaining firms on solid ground. Indeed, as of June 30, less than eight weeks after the release of the SCAP results, the ten firms needing to bolster their balance sheets had raised $62.5 billion of capital, leaving only four of them with further capital needs.[31] In June, meanwhile, after satisfying some conditions imposed by the Treasury, some TARP recipients began repaying the Treasury. As of August 21, $70.2 billion in TARP funding had been repaid by 36 institutions.[32]

Still, the situation remains tenuous. As noted earlier, commercial bank lending has fallen, despite government support (Table J). Although U.S. banks wrote off over $1 trillion of bad assets in the two years ended June 30, 2009, some analysts have estimated that many hundreds of billions (or more) of such assets still need to be cleared off their books.[33] It is unclear to what extent the profitability (or indeed the viability) of many banks rests on asset sales, the ability to benefit from wide interest rate spreads caused by aggressive Fed action on policy rates, and the government's regulatory forbearance or support (mark-to-market accounting, the government's temporary support programs, etc.). Bank failures are accelerating: from the beginning of 2009 through August 21, 81 banks failed, compared with 26 bank failures in 2008 and a total of 27 in the *eight years* before that. As a result, the FDIC's reserve fund has shrunk dramatically.

The U.S. Economy

While credit market and banking data provide some grounds for optimism, many uncertainties remain. Economic distress persists, casting a large shadow over whatever "green shoots" (mostly decreasing rates of *decline* in various economic data) more optimistic prognosticators find. GDP has fallen for four consecutive quarters for the first time since quarterly records started being kept in 1947. The unemployment rate, 4.8% when the 2008 stimulus bill was passed and 7.6% when the 2009 stimulus bill became law, is now 9.4% and expected to climb above 10%. The loss of about 6.5 million jobs (more than were created during the last *nine* years) since December 2007 is dampening demand in the consumer-led U.S. economy while overleveraged consumers are already much more inclined to save than to spend. Credit card defaults hit a record 10.4% (on an annualized basis) in June and the International Monetary Fund estimates that approximately 14% of the more than $1.9 trillion in U.S. consumer debt will go bad. U.S. consumer confidence, while sharply off its recent record post-1967 low, remains extremely depressed. In the housing market, where much of the trouble began, deep-rooted problems persist, notwithstanding repeated government actions to stabilize the sector. According to Deutsche Bank, 26% of U.S. homes are "underwater" and this figure may rise to 48% by first quarter 2011. As of June 30, 2009, the foreclosure rate

[31] The figures come from the SIGTARP. The Financial Stability Oversight Board provides a lower figure of $46.5 billion (more than $34.5 billion of new common equity and "actions that would generate up to an additional $12 billion of common equity").
[32] In particular, ten firms repaid $68.3 billion in TARP funds.
[33] According to the Financial Stability Oversight Board, the stress test results "indicated that the 19 participating BHCs [bank holding companies] could withstand up to $600 billion in losses during 2009 and 2010."

was 4.3%, an all-time high, while mortgage loans on one- to four-unit residential properties overdue by at least 90 days, the point at which foreclosure proceedings usually start, was a record 8.0% (on a seasonally adjusted basis). Problems in the commercial property market are widely seen as the next shoe to drop, as more than $500 billion of commercial mortgages is expected to mature in 2009.

While the Fed has started talking more about its exit strategy, it still considers the capital markets fragile. Although it announced in late June that some TSLF auctions would be suspended and slightly reduced the TAF auction amounts in July (to $125 billion from $150 billion), it extended through February 1, 2010, the following programs: AMLF, CPFF, PDCF, TSLF, and the currency swap lines with other central banks. In mid-August the Fed extended the TALF program to March 2010 (ABS and legacy CMBS) and June 2010 (new CMBS). It has also continued to buy Treasury, agency, and agency-guaranteed MBS under the asset purchase programs discussed above. As for the Obama administration's view on the broader economy, some officials have already bruited the need for a third stimulus package—even before most of the money appropriated under the ARRA is spent—which would certainly indicate substantial concern that a recovery is not taking hold.

The Financial Cost to the U.S. Government

Much of the policy package has been in the form of guarantees, which may incur little or no direct costs (e.g., where the guarantee ends up costing the government nothing). The Fed, Treasury, and FDIC also charge program-related fees.[34] Clearly, however, the government is going to be out a substantial sum of money—just how much is as yet unknown, with Treasury putting the cost to date at less than $2 trillion and the SIGTARP estimating the current balance at $3 trillion, including $1.4 trillion from the Fed.[35]

The Fed expects to recover some of the funds it has expended in direct bailouts of the financial, auto, and auto supplier companies—and there is certainly historical precedent for this expectation. For example, the U.S. government[36] actually made money on its bailouts of Lockheed, Franklin National Bank, and Chrysler, at least in nominal terms, had its loans to New York City (which began in 1975) repaid (with loan premiums and fees) by 1986, and was able to defray a significant percentage of its costs related to the 1989 savings and loan bailout (see the note to Table B).

[34] The Fed earns fees for services and interest on its loans to banks. It had a $35 billion surplus in 2008, which it remitted to the Treasury. In first quarter 2009 it earned $1.3 billion from loan programs specifically related to the financial crisis. The *Financial Times* reported on August 31, 2009, that the Fed had earned a $14 billion profit (on $19 billion in revenue) on its lending programs since the financial crisis began in mid-2007. As of June 30, 2009, the Treasury had received $6.9 billion in interest and dividends from TARP recipients and $20.3 million from the sale of warranties and preferred stocks received in TARP transactions. The Treasury has also received warrants from TARP recipients that have value. The FDIC has received at least $9 billion in participation fees from TLGP recipients. FNMA and FHLMC pay fees to the Treasury.

[35] A quick (and incomplete) calculation would note that the combined cost of the two stimulus bills is $955 billion, although most of the 2009 package has not yet been spent. The CBO estimates that the government incurred roughly $248 billion in costs when it put Fannie Mae and Freddie Mac into conservatorship in September 2008 (other costs have since been incurred). The CBO also estimates a 36% subsidy rate ($159 billion) on $439 billion in committed or outstanding TARP transactions.

[36] The Fed did not participate in these bailouts.

Risks

Government policies of such breadth and size entail enormous risk. Policymakers are swimming in uncharted waters. Massive government spending, exceedingly low interest rates, and the constant din of the government printing press are all recipes for high inflation or even hyperinflation, notwithstanding the fact that deleveraging, rising unemployment, overcapacity, an increasing household savings rate, and the supply of cheap foreign goods are all deflationary forces. Treasury issuance has risen sharply (Table R) and the United States is poised to issue record amounts of debt for the foreseeable future, making its funding ever more dependent on the kindness of strangers, particularly China. Foreign (and domestic) investors may demand higher rates going forward, particularly if risk aversion declines again and/or concern about U.S. financial health grows. The U.S. budget deficit for 2009 is estimated at some $1.6 trillion, or 11% of GDP (Table S). U.S. government debt, now 41% of GDP (compared with the 40-year average of 36%),[37] is projected by the CBO to be 60% of GDP by September 2010; it will rise rapidly thereafter, reaching 83% of GDP by 2019 under one CBO scenario, after which "the spiraling costs of interest payments would swiftly push debt to unsustainable levels."[38] To place this in perspective, the highest public debt level ever recorded by the United States (in 1945) was 113% of GDP and Standard & Poor's recently decided to place a negative watch on U.K. sovereign debt in light of projections that it will increase to 100% of U.K. GDP.

Meanwhile, the Fed is exponentially expanding—and weakening—its balance sheet by purchasing Treasuries, agency debt, and agency-backed MBS and accepting a large amount of lesser-quality paper as collateral for its lending of Treasuries (Table T). While early Fed initiatives to unfreeze credit markets were short-term measures (e.g., the CPFF and the AMLF), meaning that the Fed's guarantees rolled off its balance sheet within nine months (three months in the case of the CPFF and generally four months for the AMLF), this is not true of programs such as the TALF and mortgage-related purchases. The Fed's balance sheet is now $2 trillion, down from recent levels, but far bigger than its June 2007 level of $852 billion. Expected purchases later this year of more Treasuries, agency debt, and agency-backed MBS alone would expand the Fed's balance sheet to over $2.3 trillion. It is important to note, however, that the Fed's new authority to pay interest on reserves[39] has given it a new lever for monetary policy, which theoretically will help it reduce its balance sheet more easily.[40] The Fed sees this as an important component of its exit strategy. Time will tell.

Given the foregoing, it seems a bit counterintuitive to realize that inflation would actually be a sign that the policy program has *worked*. However, although deflationary concerns have predominated to date and inflation (on a trailing 12-month basis) actually turned negative in March 2009 (Table U), it will be no mean

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[37] This figure covers only U.S. government debt held by the public (i.e., not debt held by intragovernmental agencies).

[38] While the CBO terms this the "alternative fiscal scenario," it appears to consider this more probable than the "extended-baseline scenario," which adheres most closely to current law. The alternative fiscal scenario "incorporates some policy changes that are widely expected to occur and that policymakers have regularly made in the past." Congressional Budget Office, "The Long-Term Budget Outlook," June 2009, p. 1.

[39] The Financial Services Regulatory Relief Act of 2006 originally authorized the Federal Reserve to begin paying interest on balances held by or on behalf of depository institutions beginning October 1, 2011. The effective date was accelerated to October 1, 2008, by the Emergency Economic Stabilization Act of 2008.

[40] By reducing interest rates paid on reserves, the Fed would lessen the incentives for banks to hold higher-than-required reserves at the Fed. Of course, the new legislation also raises the Fed's costs.

feat for policymakers to achieve the moderate inflation they seek while avoiding the sort of high annual price increases not seen since the 1980s. The Fed has already had trouble keeping longer-term rates down. For example, although its March 18, 2009, announcement that it would purchase up to $300 billion of Treasuries caused the yields on five- and ten-year Treasuries to decline by their largest percentages ever since our data begin in 1962, yields bounced back to well above their pre-announcement levels within a matter of weeks and are even higher today. Nevertheless, markets are not pricing in particularly high inflation over the next decade and we are of the view that a sharp rise in inflation does not seem to be a problem for the rest of this year or even 2010.[41]

In addition, the policy program could prove to be a short-term fix that does not resolve (or exacerbates) more deep-rooted problems. Arguably, the housing boom resulted from the Fed's maintenance of very low policy rates following the dot-com bust and is just the latest in a "debt supercycle"[42] pursuant to which debt has created one artificial (and increasingly dangerous) bubble after another. At some point, individuals need to pay down their debt and increase their savings (as they have indeed started to do, with the personal savings rate hitting a 15-year high of 6.9% in May) or there will be an even more dire economic crisis. It is reasonable to wonder whether the policy program will lead to a bigger blowup in a few years and to consider where the next bubble(s) might appear.

The policy package also raises the issue of moral hazard because it is predicated on the view that some institutions are too systemically important to go under. The very nature of the stress tests suggested that the government is prepared to stand behind the 19 bank holding companies examined, which account for about two-thirds of the assets and more than one-half of the loans in the U.S. banking system. Indeed, Fed Chairman Ben Bernanke told the House Financial Services Committee on July 24 that roughly 25 financial institutions were "too big to fail." While Bernanke noted that these institutions (which presumably include all of the firms that were stress tested) would be subject to greater oversight under the Obama administration's proposed regulatory plan, such a conclusion has broad implications for competitiveness. Some argue that government intervention inherently exacerbates the problem, as it prevents the market from punishing losers and rewarding winners. It was telling that the administration (using its authority under the TARP) intervened in the auto sector based on the argument that a "significant disruption of the American automotive industry … would pose a systemic risk to financial market stability and have a negative effect on" the U.S. economy.

As a result of the policy package the U.S. government now owns approximately 79.9% of AIG (116,000 employees and operations in more than 130 countries and jurisdictions as of December 31, 2008); 79.9% of both Fannie Mae and Freddie Mac, which dominate the housing market; 61% of General Motors (235,000 employees as of December 31, 2008); 34% of Citigroup (279,000 employees and $1.85 trillion in assets as of June 30, 2009); and 8.0% of Chrysler. It is possible that the government's ownership interest in these firms, in hundreds of other financial institutions under the TARP, and in other companies, will affect economic growth rates—and therefore investment returns—particularly if it turns out to be lengthy. The

[41] Please see, for example, the discussion in our August 2009 Asset Allocation in the Current Environment report *Now What?!*
[42] The term has been discussed for many years by BCA Research. See, for example, their *Special Report: More Thoughts on the Debt Supercycle: The Final Inning?*, March 3, 2009.

government stake carries with it restrictions on dividend payments and common stock repurchases, oversight of executive compensation, and (limited) controls on the hiring of foreign workers. In addition, of course, government support of some firms could damage the competitive position of others not receiving such assistance.

The government's handling of creditors' claims on assets in the auto and housing industries has raised further concerns. For example, the government supplanted normal bankruptcy proceedings to impose a much larger haircut on holders of senior General Motors and Chrysler debt than on other creditors. Similarly, some measures to encourage refinancing of homes may impact holders of mortgage bonds that are backed by "first-lien" mortgage loans that are supposed to incur losses only after "second-lien" mortgages have been written off.

Notwithstanding the clear regulatory failures of recent years and the current disrepute attached to both "deregulation" and the current regulatory structure, it is reasonable to wonder whether the new regulatory scheme sure to be put into place will stifle competition, hurt U.S. firms in the global arena, and constrain growth. Will new regulation impose onerous and unnecessary requirements on business that go beyond what may be needed? Likewise, will the Fed's increasingly close relationship with the executive branch impact its ability to hike rates at the appropriate time (already, as we have seen, a most difficult undertaking!) and otherwise maintain its independence? Concerns on this score are great enough that the Fed and Treasury felt obliged to issue a joint statement in March 2009 asserting the Fed's independence.

Implications for Investors

So many of these risks are tied to policy issues, which are at least as much subject to political as to economic influence, that investors will have to pay far more attention to the machinations of government and the macroeconomic environment than they typically have in the past. Consider, for example, those investment managers making a bet on financials: has excellent (recent) performance been the result of successful stock selection or the success of a policy predicated (knowingly or not) on a government bailout of the largest financial firms (and less industry competition)—or did such managers leave money on the table by refusing in late 2008 to add to positions in financials despite the clear value proposition?

More broadly, how will increased government involvement in the economy advantage or disadvantage firms that are considered "too big to fail," firms that receive government assistance, and firms that remain outside the government's circle? For example, *The Wall Street Journal* recently estimated that U.S. government guarantees since November on new debt issued by financial firms will save those companies about $24 billion in borrowing costs over the next three years. How should calculations such as these affect investor behavior?

In short, investors should have a much greater macro focus than usual. We retain our traditional skepticism regarding the repeatability of manager outperformance based primarily on macro views. And we remain doubtful (to say the least) of the ability of anyone to predict what interest or exchange rates or economic growth will be in six months. However, there is no getting around the fact that we are in the midst of an extraordinary period in the capital markets in which a macro view is crucial, *even though this may not be the case in a couple of years*. Active managers that best understand how the macroeconomic environment affects the likely winners and losers, that are skilled enough to avoid risks for which investors should not expect to be compensated, and that can avoid sectors of the market that show diminished promise unless they sell at significant discounts (e.g., sectors that rely on U.S. consumption) should be able to add value in such a difficult environment.

As we have written elsewhere,[43] we recommend that investors wear both belts and braces: that is, some protection against deflationary forces on the one hand and the potential for rising inflation on the other. For those that believe that an irresponsible government will seek to monetize its burgeoning liabilities by letting inflation rip and the dollar plummet, gold is the only refuge in the crisis that would ensue. Taking a less alarmist view of the future, we would prefer allocations to commodities and natural resources, taking advantage of weaker prices (or, in the case of commodities, an improvement in the cash collateral yield and the roll yield obtained by rolling futures contracts forward) to build positions; Treasury inflation-protected securities; and perhaps non-US$-denominated sovereign bonds. Nominal Treasury bonds remain the best hedge against deflation, and we would not abandon them despite our view that they are somewhat overvalued today.

U.S. equities, meanwhile, would suffer under either scenario: higher inflation or prolonged economic weakness. In addition, they are vulnerable to disappointment: if investors perceive that government stimulus has merely postponed the day of reckoning for an overleveraged economy, they are likely to retreat from the markets again when the "green shoots" start to wither and/or withdrawal of various stimulus programs threatens a relapse into another recession.[44]

Assuming that the government's success in restoring credit markets is more than temporary, however, equities should benefit from lower risk aversion. Yet although history suggests that earnings growth is likely to be reasonable in the intermediate term, given the beating that earnings have taken since late 2008,[45] there is also strong reason to believe we are in for a period of structurally lower growth, especially if the government's direct role in the economy persists for longer than is now anticipated. Further, until credit markets are repaired and downward wage pressure subsides, financial private sector spending is unlikely to resume. This would put continued downward pressure on sectors dependent on U.S. consumer spending for profits.[46]

[43] Please see our August 2009 Asset Allocation in the Current Environment report *Now What?!* and the discussion of Treasuries in our monthly *Notes on Current Valuations*.
[44] For one view of the inefficacy of government action, please see our Selected Investment Perspectives, Issue No. 13, *Austrian Economics: An Alternative View of the Credit Crisis*.
[45] Please see our June 2009 U.S. Market Commentary *S&P 500 Earnings: Gazing Across the Abyss*.
[46] For our views on other asset classes, please see our monthly *Notes on Current Valuations.*

Conclusion

The government has instituted an enormous and complex set of programs to address the financial crisis and the recession. The systemic failure many feared last fall appears to have been averted and the Fed has shown that it has a surprising number of cards to play in what did not seem a winning hand. As we go to press, many Fed programs are ramping down and the potential exposure of the government under these and other programs appears less than it once did.

Still, no one knows whether credit markets are strong enough to function in the absence of the Fed (and other government) support or whether investor confidence has truly returned. We believe markets are likely more fragile than the headline numbers indicate. The Fed would seem to agree, as shown by its extension of the TALF and most of its lending programs into 2010, and there is discussion regarding the potential for a third stimulus package.

Even if the rally continues and markets become more stable, the long-term cost of the government's policy package remains unclear. The expansion of the Fed's balance sheet, the large budget deficit, and the rapidly increasing national debt (an issue even before the policy package was put into place) raise the specter of high inflation and increased doubts concerning the creditworthiness of the United States. It will take as much or more skill and determination as the Fed has displayed fighting deflation over the last nine months to constrain price growth over the longer term. The details of the Fed's exit strategy will be critical.

It also remains unclear whether the policy package will turn out to be "kicking the can"—i.e., deferring resolution of the underlying problems in the economy and creating the conditions for another bubble in a few years. Broad government intervention in the economy and support for "too big to fail" players raise moral hazard and other questions, with implications for economic growth and U.S. competitiveness. Absent some resolution of structural issues such as the financial health of the banking system, excess household leverage, and entitlement programs whose liabilities dwarf those of the massive stimulus programs, any economic recovery is likely to prove hollow, putting the U.S. economy at risk of a "lost decade" like that suffered by Japan after its bubble burst in 1989.

The lessons of the financial and economic crisis and the policy response will be the subject of debate for decades to come. The crisis will no doubt be a painful memory for most investors. Those with less painful recollections are likely to be those that not only adhere rigorously to time-tested investment principles but also manage their portfolios with careful consideration of the possible implications of today's extraordinary macroeconomic environment on different asset classes, investment strategies, and managers.

Appendix

LIST OF ACRONYMS

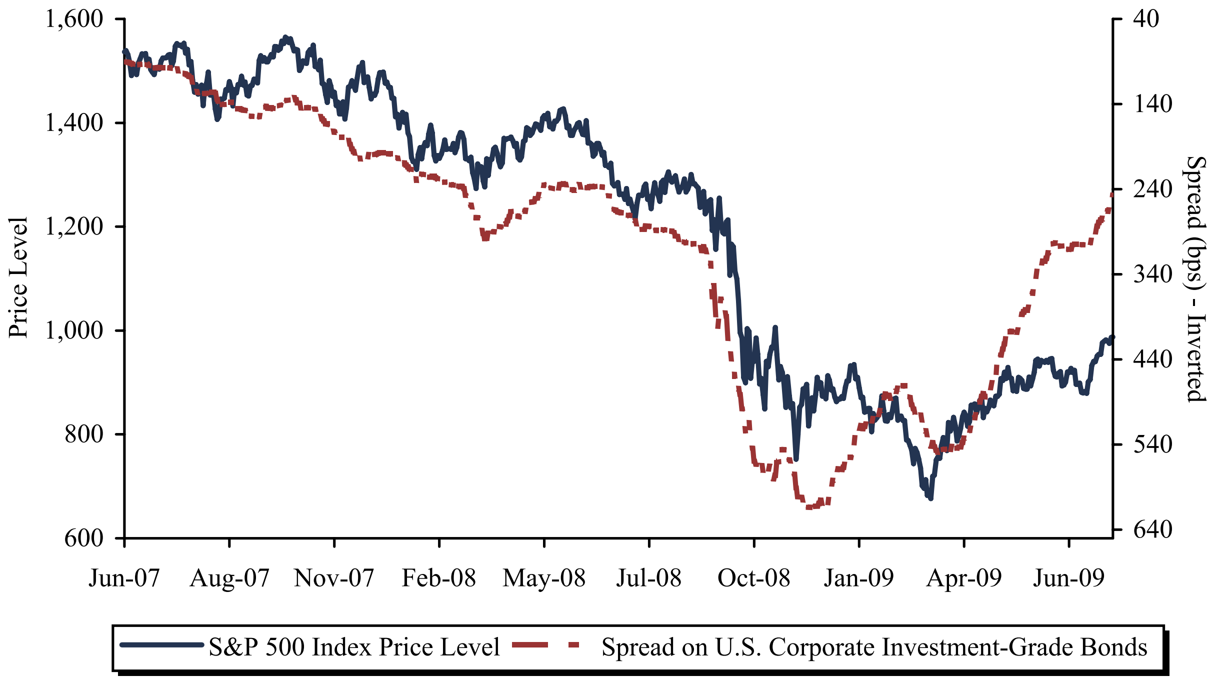
ABS: Asset-Backed Securities
AGP: Asset Guarantee Program
AMLF: Asset-Backed Commercial Paper Money Market Mutual Fund Lending Facility
ARRA: American Recovery and Reinvestment Act of 2009
CBO: Congressional Budget Office
CMBS: Commercial Mortgage–Backed Securities
CP: Commercial Paper
CPFF: Commercial Paper Funding Facility
CPP: Capital Purchase Program
FDIC: Federal Deposit Insurance Corporation
FHFA: Federal Housing Finance Agency
FHLB: Federal Home Loan Banks
FHLMC: Federal Home Loan Mortgage Corporation (Freddie Mac)
FNMA: Federal National Mortgage Association (Fannie Mae)
GSE: Government-Sponsored Enterprise
HERA: Housing and Economic Recovery Act of 2008
MBS: Mortgage-Backed Securities
MMIFF: Money Market Investor Funding Facility
PDCF: Primary Dealer Credit Facility
PPIF: Public-Private Investment Fund
PPIP: Public-Private Investment Program
SCAP: Supervisory Capital Assessment Program or the so-called stress tests
SIGTARP: U.S. Office of the Special Inspector General for the Troubled Asset Relief Program
TAF: Term Auction Facility
TALF: Term Asset-Backed Securities Loan Facility
TARP: Troubled Asset Relief Program
TIP: Targeted Investment Program
TLGP: Temporary Liquidity Guarantee Program
TSLF: Term Securities Lending Facility

For more information about the Federal Reserve programs, please see the Federal Reserve Bank of New York website: http://www.newyorkfed.org/index.html.

Table A

FINANCIAL MARKETS IN CRISIS

June 1, 2007 – July 31, 2009

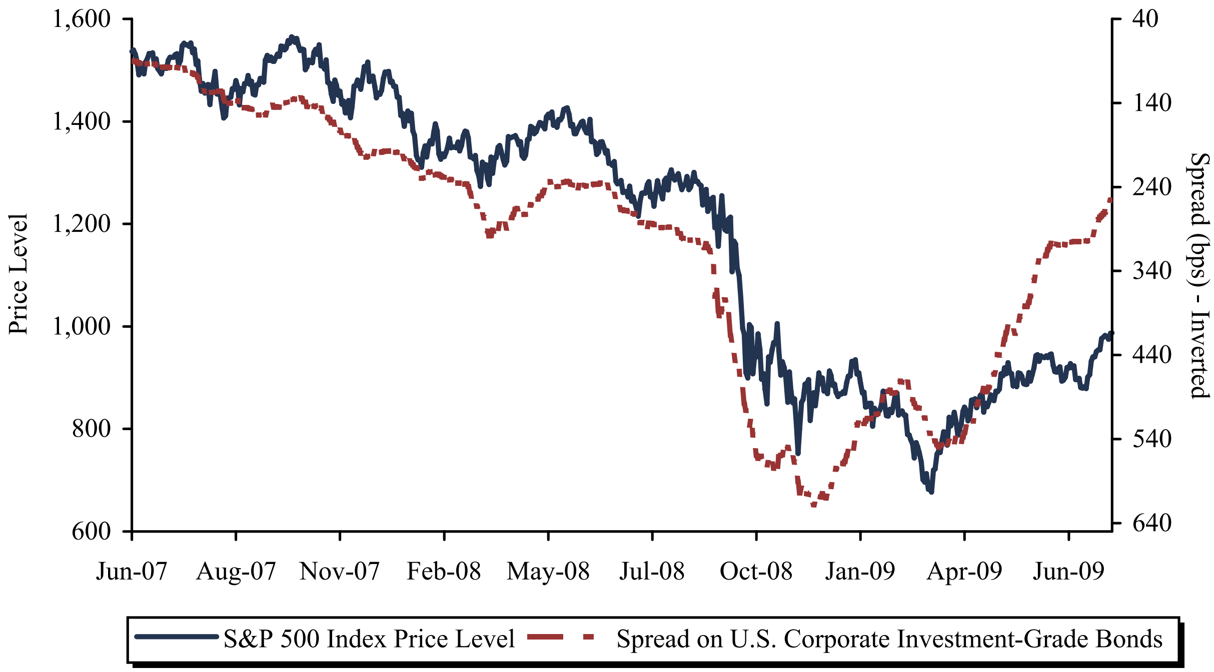


1. 07/31/07 – Two Bear Stearns hedge funds file for bankruptcy protection.
2. 08/09/07 – ECB adds €95bn of liquidity to markets; Fed and Bank of Japan take similar steps.
3. 10/09/07 – The S&P 500 peaks at 1,565, an all-time nominal high.
4. 12/17/07 – Fed approves Term Auction Facility, allowing banks to borrow up to $20bn anonymously twice a month.
5. 02/13/08 – $168bn Economic Stimulus Act of 2008 becomes law.
6. 03/16/08 – Fed extends a $30bn credit line to J.P. Morgan to help it buy Bear Stearns. Fed announces establishment of Primary Dealer Credit Facility (PDCF).
7. 07/11/08 – IndyMac Bancorp Inc. becomes the second-biggest federally insured financial company to be seized by U.S. regulators after a run by depositors.
8. 07/30/08 – Housing and Economic Recovery Act of 2008 passed.
9. 09/07/08 – Fannie Mae and Freddie Mac are placed in conservatorship.
10. 09/15/08 – Lehman Brothers files for bankruptcy protection, becoming the largest U.S. bankruptcy; Bank of America purchases Merrill Lynch.
11. 09/16/08 – U.S. government loans AIG $85bn in exchange for ~80% ownership in the company.
12. 09/17/08 – A soured investment in Lehman Brothers causes the Reserve Primary Fund to "break the buck." Three-month T-bills drop to their lowest rate since at least 1941.
13. 09/18/08 – The SEC temporarily bans short selling of financial stocks and implements short-sale disclosure requirements.
14. 09/19/08 – Asset-Backed Commercial Paper Money Market Mutual Fund Lending Facility (AMLF) established. Treasury establishes Temporary Guarantee Program for Money Market Funds. Treasury announces Troubled Asset Relief Program (TARP) rescue plan initiatives and guarantees 2a7 money market assets.
15. 09/21/08 – Goldman Sachs and Morgan Stanley are converted to bank holding companies, marking the end of the traditional investment bank. The Fed authorizes the extension of credit to a set of other securities dealers on very similar terms to the PDCF.
16. 09/22/08 – Fed loosens rules limiting the ability of buyout firms and private investors to take large stakes in banks.

Table A (continued)

FINANCIAL MARKETS IN CRISIS

June 1, 2007 – July 31, 2009



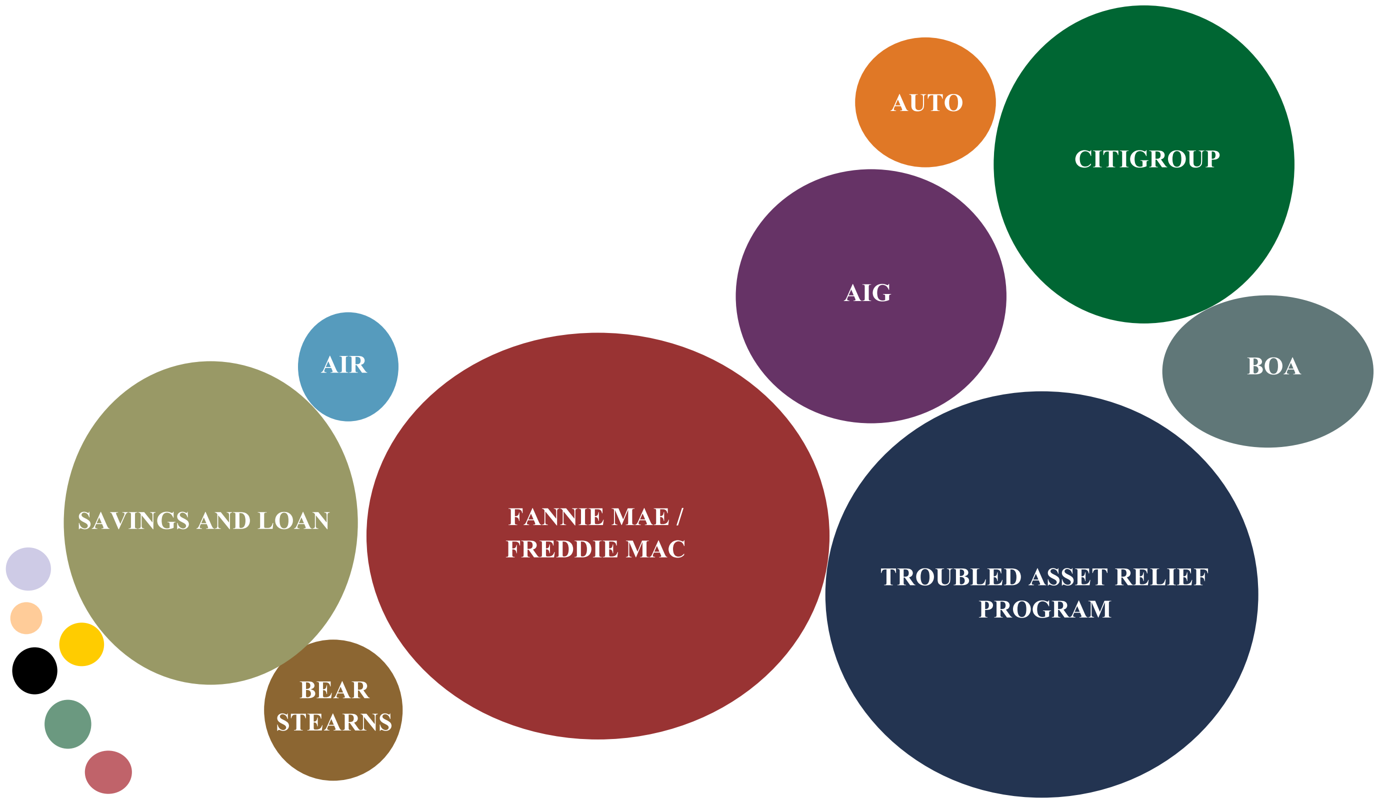
17. 09/25/08 – Federal regulators close Washington Mutual and negotiate sale of assets to J.P. Morgan.
18. 09/29/08 – FDIC announces that Citigroup will acquire banking operations of Wachovia.
19. 10/03/08 – Emergency Economic Stabilization Act (including TARP) is passed.
20. 10/07/08 – Commercial Paper Funding Facility (CPFF) established.
21. 10/14/08 – FDIC insures all senior debt of regulated institutions.
22. 10/21/08 – Money Market Investor Funding Facility established.
23. 11/23/08 – Citigroup bailout begins.
24. 11/25/08 – Fed purchase of government-sponsored enterprises direct obligations and agency-backed MBS announced.
25. 02/10/08 – Financial Stability Plan announced.
26. 02/17/09 – American Recovery and Reinvestment Act passed.
27. 03/18/09 – Fed announces it will buy up to $300bn in Treasuries.
28. 05/07/09 – Stress test results released.
29. 06/25/09 – Fed announces extension of AMLF, CPFF, PDCF, and Term Securities Lending Facility programs through February 1, 2010.
30. 08/17/09 – TALF extended to March 31, 2010 (newly issued ABS and legacy CMBS) and June 30, 2010 (new CMBS).

Sources: Barclays Capital, Bloomberg L.P., Federal Reserve Bank of New York, and Thomson Datastream.

Note: U.S. corporate investment-grade bond spreads are represented by the spreads of the Barclays Capital U.S. Corporate Investment Grade Index over the ten-year U.S. Treasury note.

Table B

HISTORY OF U.S. GOVERNMENT BAILOUTS



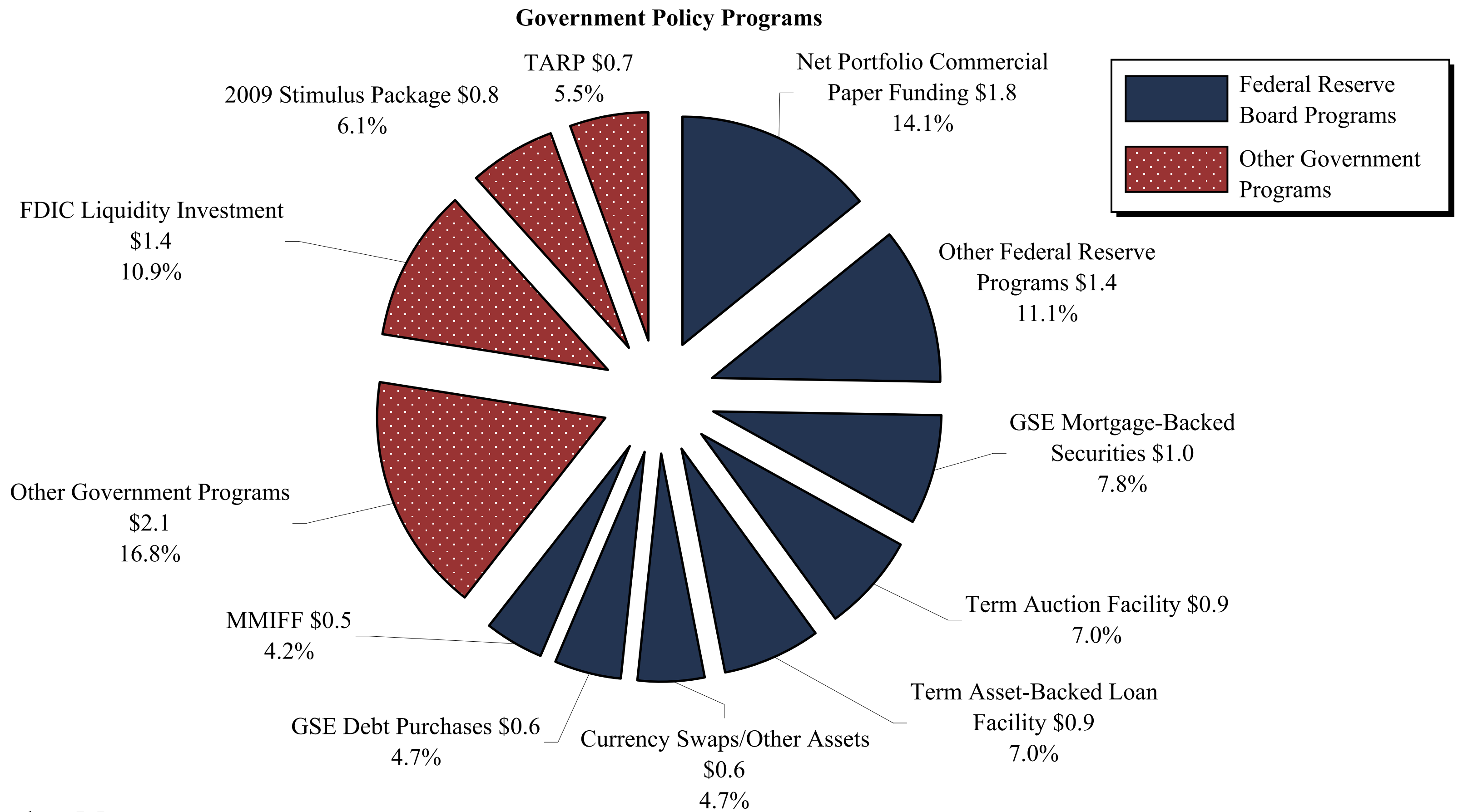
Industry/Corporation	Year	Investment 2008 US$ (bn)	Industry/Corporation	Year	Investment 2008 US$ (bn)
Troubled Asset Relief Program	2008	700.0	Airline Industry	2001	18.6
Fannie Mae / Freddie Mac	2008	400.0	Continental Illinois National Bank &Trust	1984	9.5
Savings & Loan	1989	293.3	New York City	1975	9.4
Citigroup	2008	280.0	Franklin National Bank	1974	7.8
American International Group	2008	180.0	Chrysler	1980	4.0
Bank of America	2009	142.2	Penn Central Railroad	1970	3.2
Bear Stearns	2008	30.0	Lockheed	1971	1.4
Auto Industry	2008	25.0			

Sources: Federal Deposit Insurance Corporation and Pro Publica Inc.

Notes: The circles represent the relative size of U.S. government bailouts (USG) as of April 15, 2009, are approximate, and are shown in chronological order. Air and Auto refer to the airline and auto industry bailouts, respectively. Costs may be considered "Investments" in the sense that the government often received back part or all of its cash outlays, sometimes even earning a profit, at least in nominal terms. The USG earned about $122.2 million over six years in loan fees on its 1971 investment in Lockheed. By 1981 it had sold $5.1 billion in Franklin National Bank assets after investing $1.75 billion in the firm in 1974. The USG made a profit of more than $660 million on its $1.5 billion in Chrysler Corporation in 1980. The government’s loans to New York City (which began in 1975) were repaid (including loan premiums and fees) by 1986. As for the 1989 savings and loan bailout, the taxpayer cost ended up at approximately $124 billion, about 42% of the potential liability. It was repaid $7.7 billion by Continental Illinois National Bank & Trust Company by 1991. Calculating the government's net costs related to the Penn Central Railroad bailout are more difficult as the federal government consolidated it in 1976 with five other railroad companies that were also failing. All figures come from Pro Publica Inc., except for the total costs related to the savings and loan bailout, which come from the Federal Deposit Insurance Corporation. We note, however, that after the stress test results were released in May, Bank of America announced it would not move forward with the protection that the Treasury and the FDIC agreed in January 2009 to provide it. Such protection was “against the possibility of unusually large losses of an asset pool of approximately $118 billion of loans,” the “large majority of which were assumed by Bank of America as a result of its acquisition of Merrill Lynch.”

Table C

BLOOMBERG ESTIMATE OF THE SIZE OF THE FINANCIAL RESCUE PACKAGE: $12.8 TRILLION

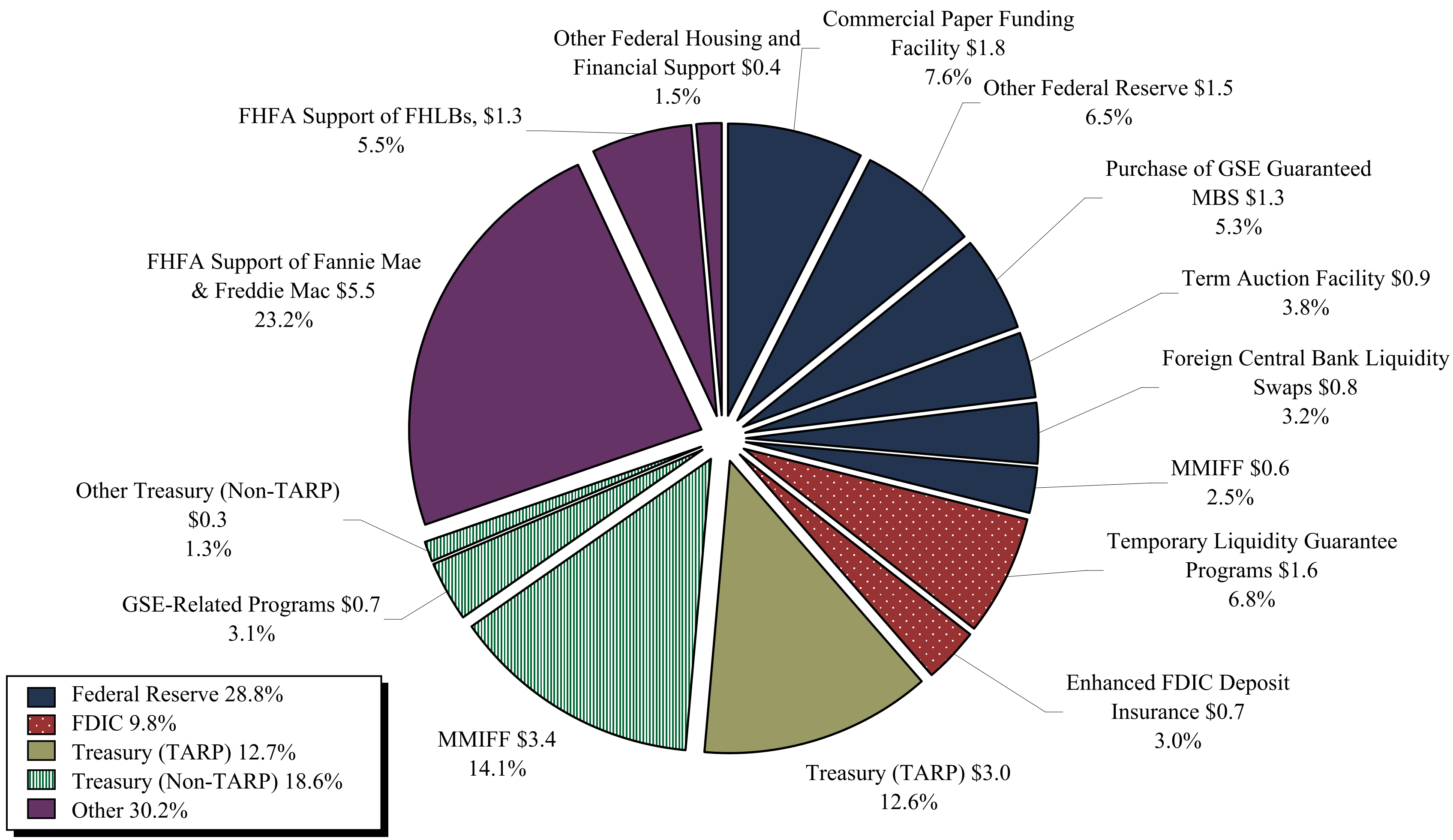


Source: Bloomberg L.P.

Notes: Data are in trillions of U.S. dollars. For programs where spending may increase, chart represents mandated limits. Estimate is as of March 31, 2009. MMIFF represents the Money Market Investor Funding Facility. TARP represents the Troubled Asset Relief Program. GSE represents government-sponsored enterprises.

Table D

SIGTARP'S ESTIMATE OF TOTAL POTENTIAL GOVERNMENT SUPPORT RELATED TO THE CRISIS: $23.7 TRILLION



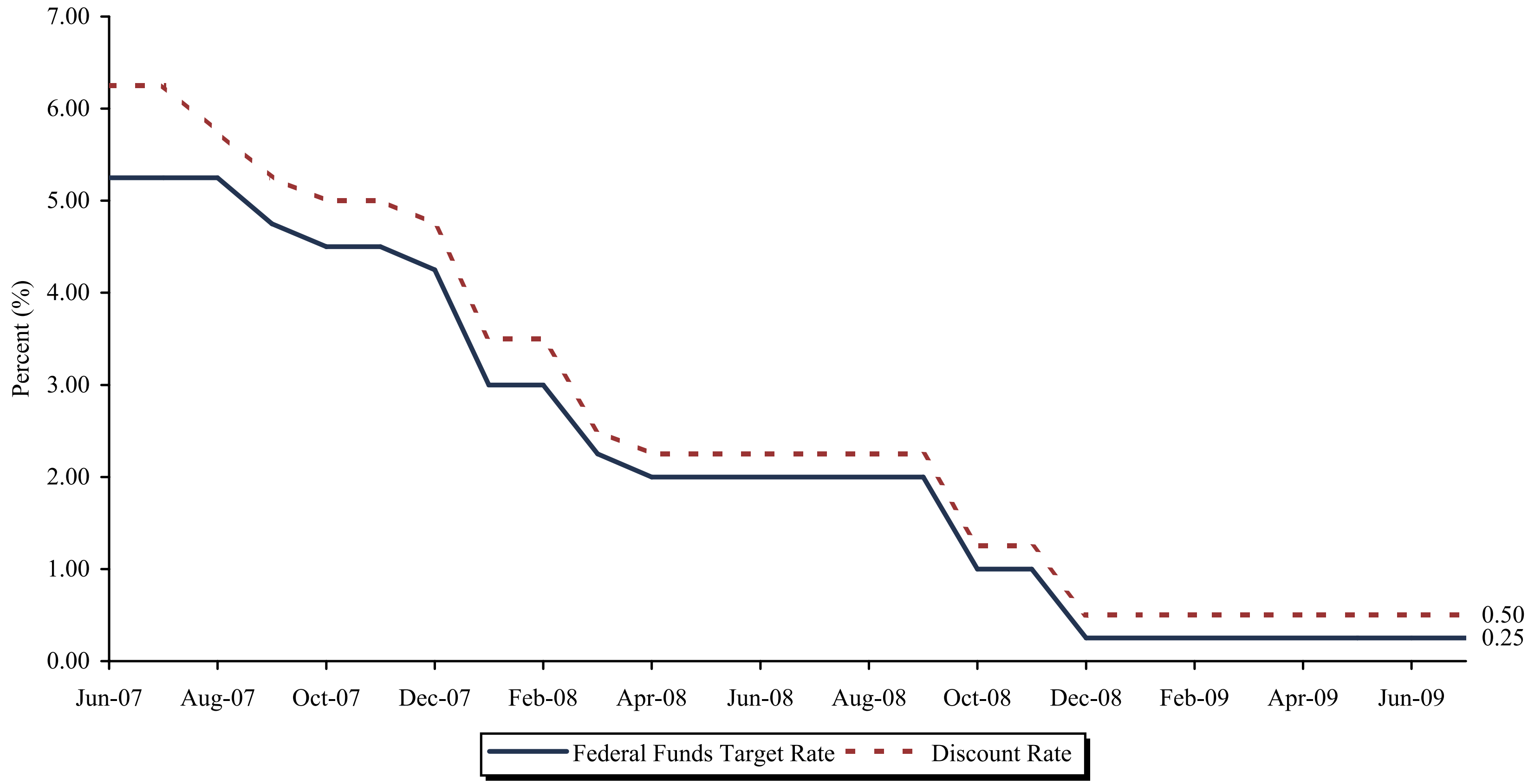
Source: Office of the Special Inspector General for the Troubled Asset Relief Program (SIGTARP), Quarterly Report to Congress (July 21, 2009).

Notes: Data are in trillions of U.S. dollars. MMIFF represents the Money Market Investor Funding Facility. TARP represents the Troubled Asset Relief Program. GSE represents government-sponsored enterprises. FHFA represents Federal Housing Finance Agency.

Table E

U.S. FEDERAL FUNDS TARGET RATE AND DISCOUNT RATE

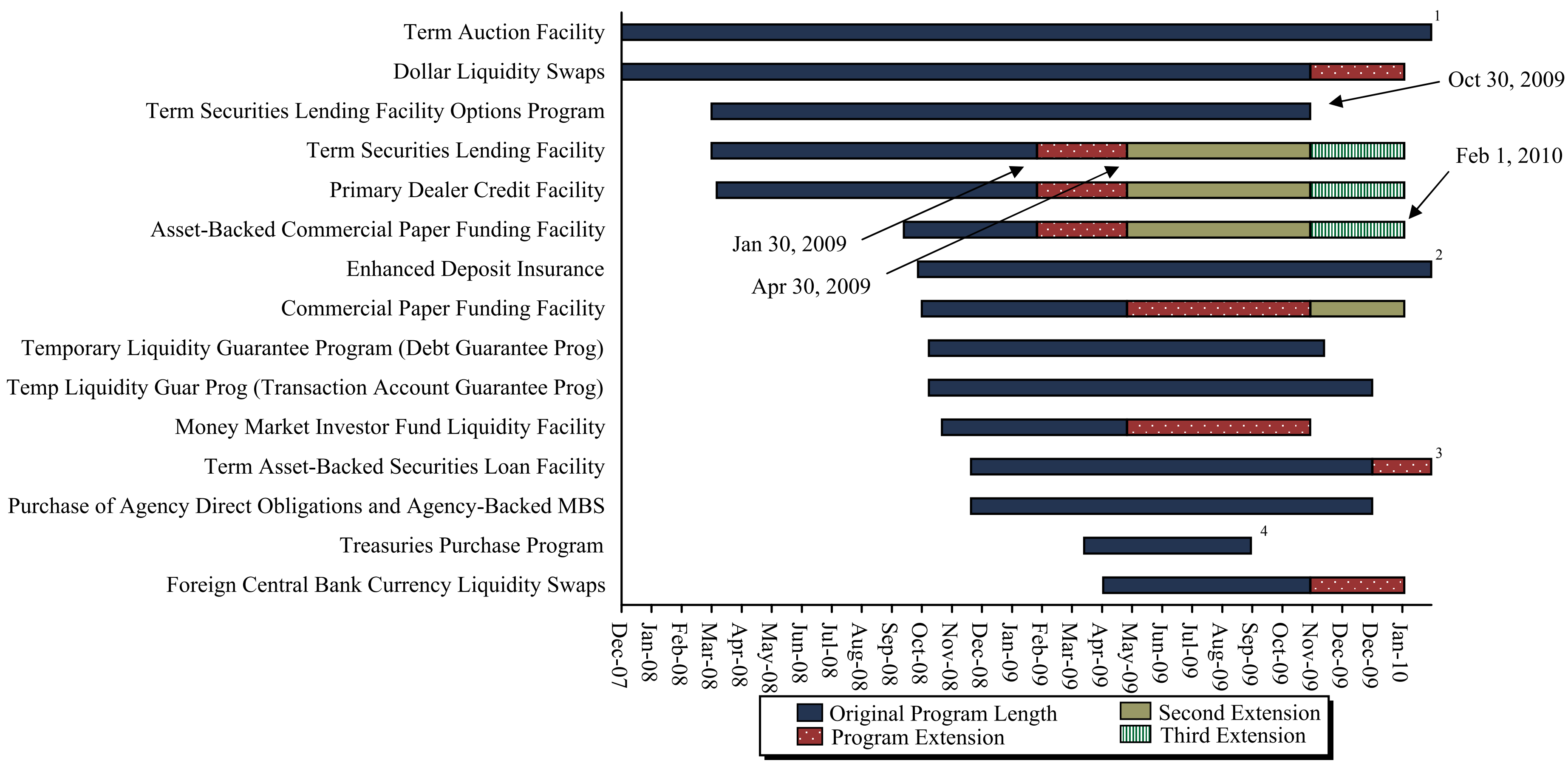
June 30, 2007 – July 31, 2009



Sources: Bloomberg L.P., Global Financial Data, Inc., and Thomson Datastream.

Table F

TIMELINE FOR MAJOR FED AND FDIC PROGRAMS DIRECTLY RELATED TO THE POLICY PACKAGE



Source: Federal Reserve Bank of New York.

Note: Only programs with potential liability estimated at more than $125 billion by the Special Inspector General for the Troubled Asset Relief Program are included.

[1] The Term Auction Facility program has no fixed expiration date.

[2] The Enhanced Deposit Insurance Program runs through December 13, 2013.

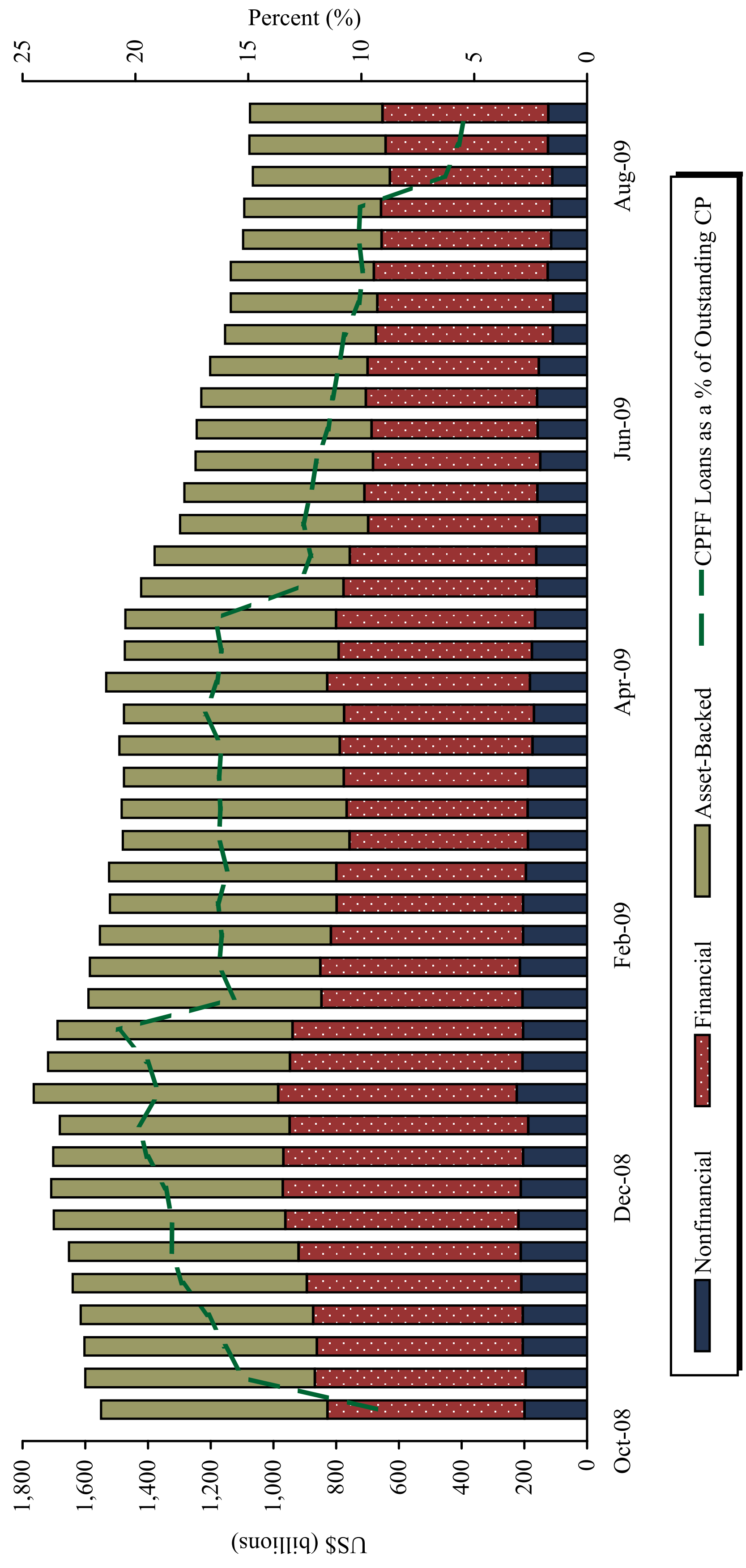
[3] The Term Asset-Backed Securities Loan Facility runs through March 31, 2010, for newly issued ABS and legacy CMBS, and through June 30, 2010, for new CMBS.

[4] The Treasuries Purchase Program is scheduled to be completed in fall 2009.

Table G

COMMERCIAL PAPER MARKET SINCE ADVENT OF COMMERCIAL PAPER FUNDING FACILITY

October 29, 2008 – August 13, 2009



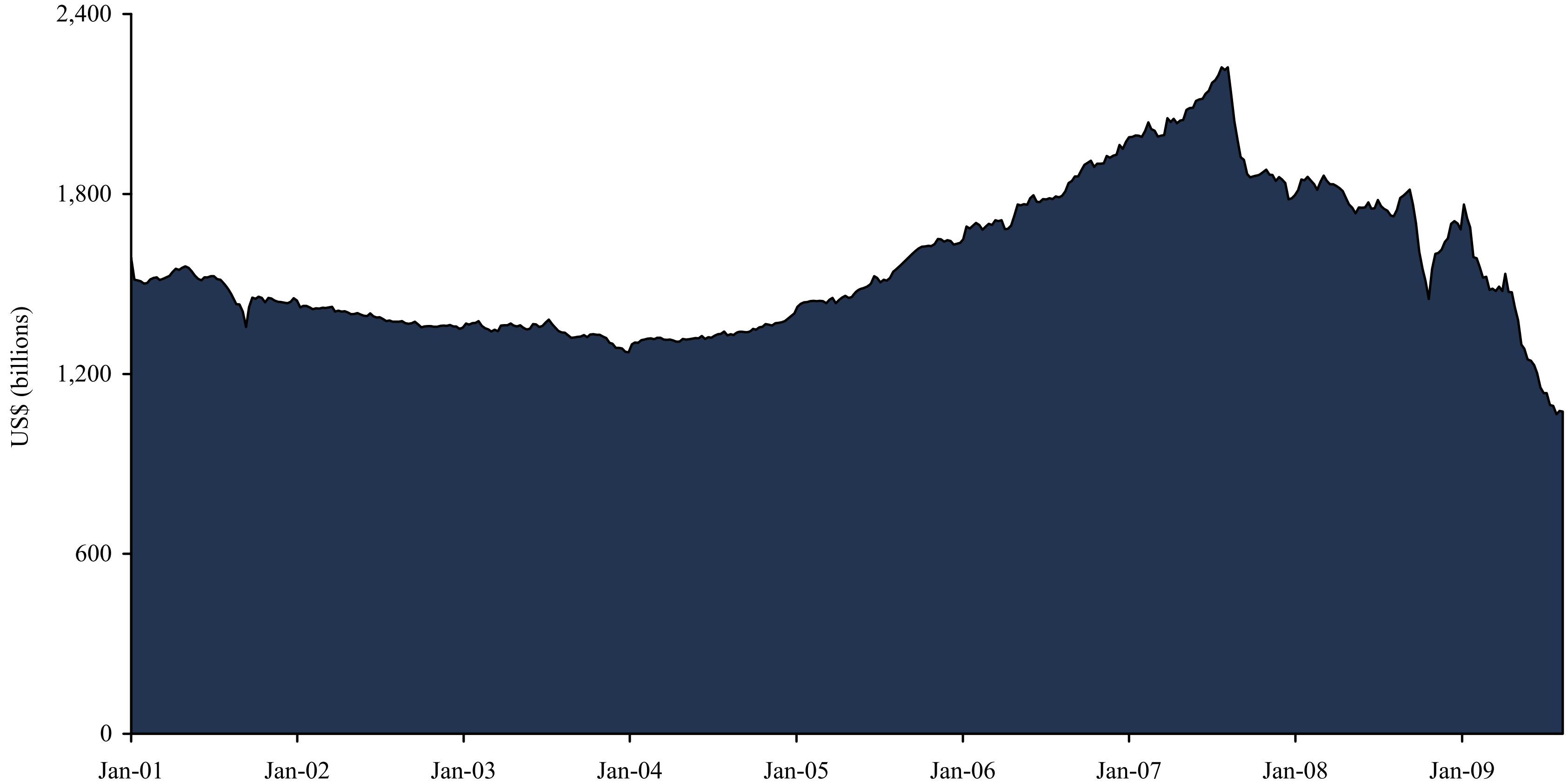
Sources: Federal Reserve and SIFMA.

Note: Data are weekly.

Table H

OUTSTANDING U.S. COMMERCIAL PAPER

January 3, 2001 – August 12, 2009

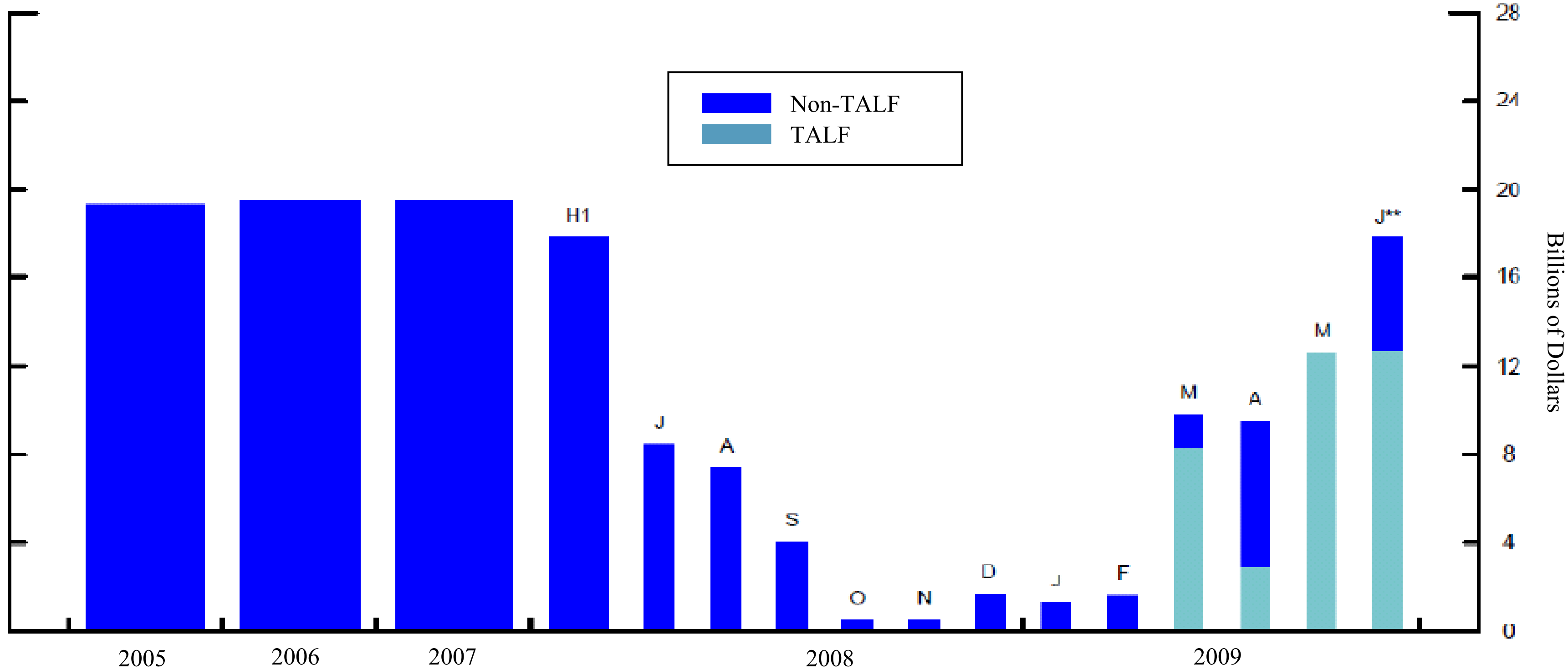


Source: Federal Reserve.

Note: Data are weekly.

Table I

GROSS CONSUMER ASSET–BACKED SECURITIES ISSUANCE



Source: Reprinted from the Financial Stability Oversight Board Quarterly Report to Congress for the quarter ending June 30, 2009, p. 18.

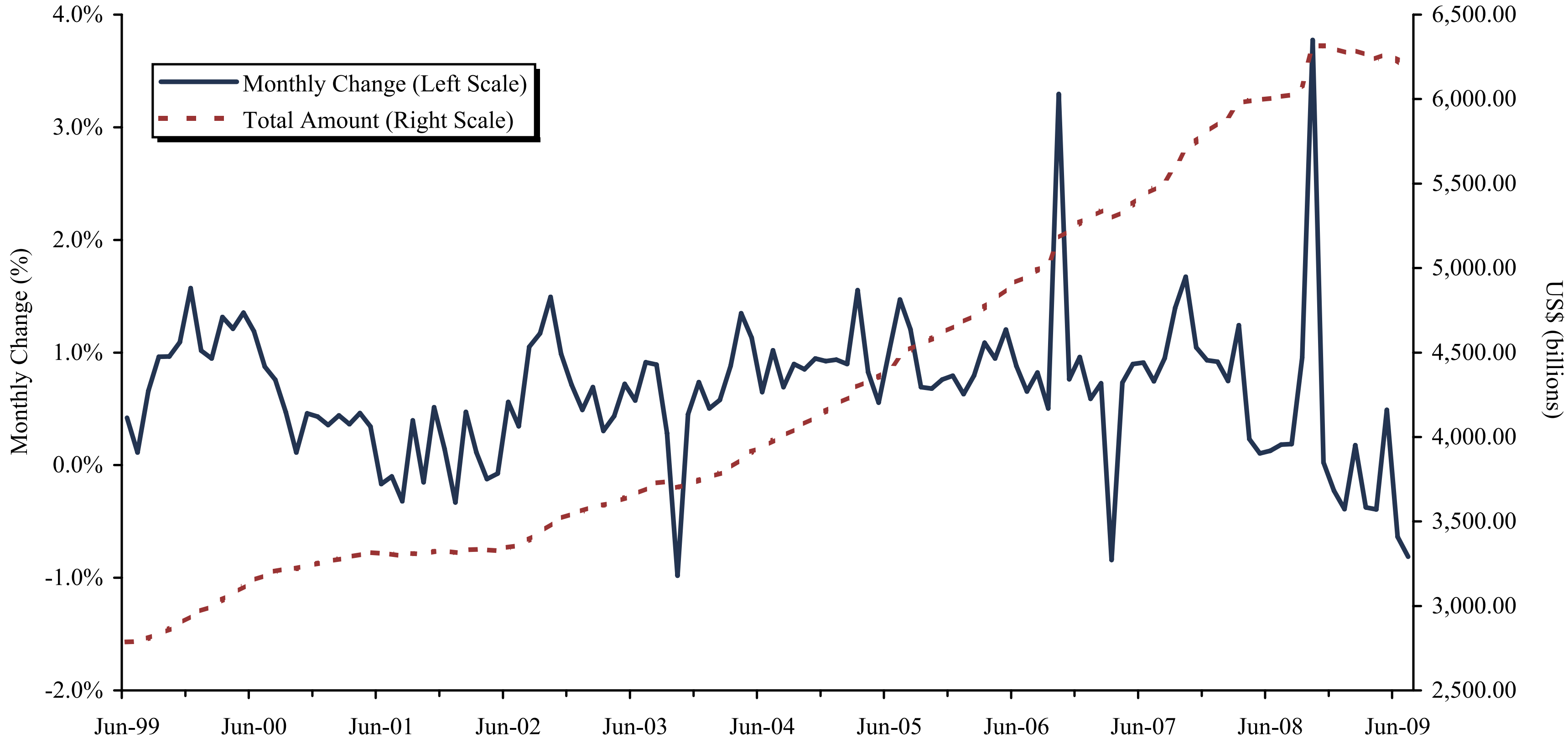
Note: Graph represents credit card, auto, and student loan asset–backed securities.

** Data for 2009 are through June 19.

Table J

COMMERCIAL BANK LOANS

June 30, 1999 – July 31, 2009



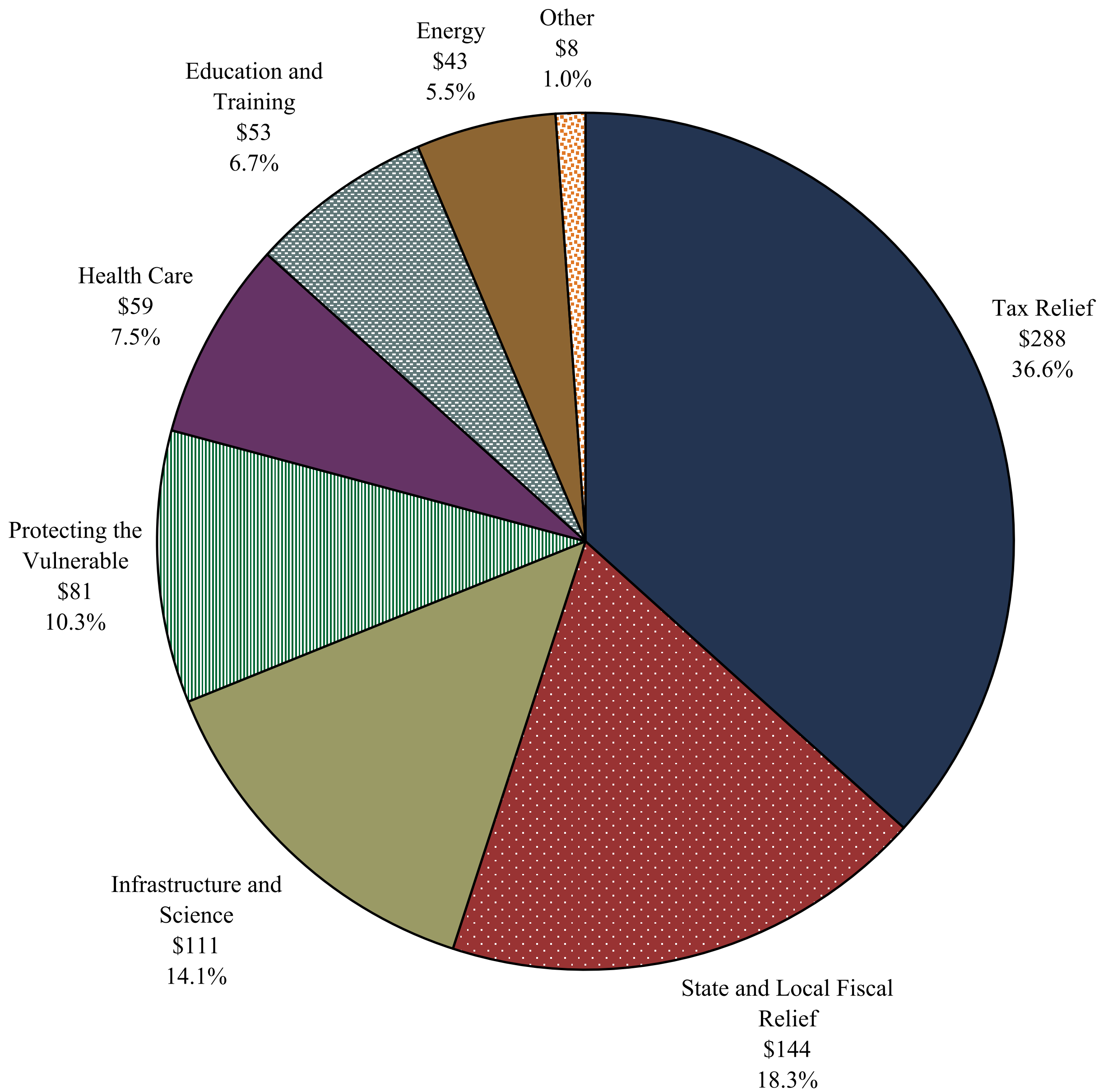
Source: Federal Reserve.

Notes: Data are monthly. Total amount represents sum of commercial and industrial, consumer, and real estate loans.

Table K

THE 2009 FISCAL STIMULUS PACKAGE

US$ Billions



Source: Recovery.gov.

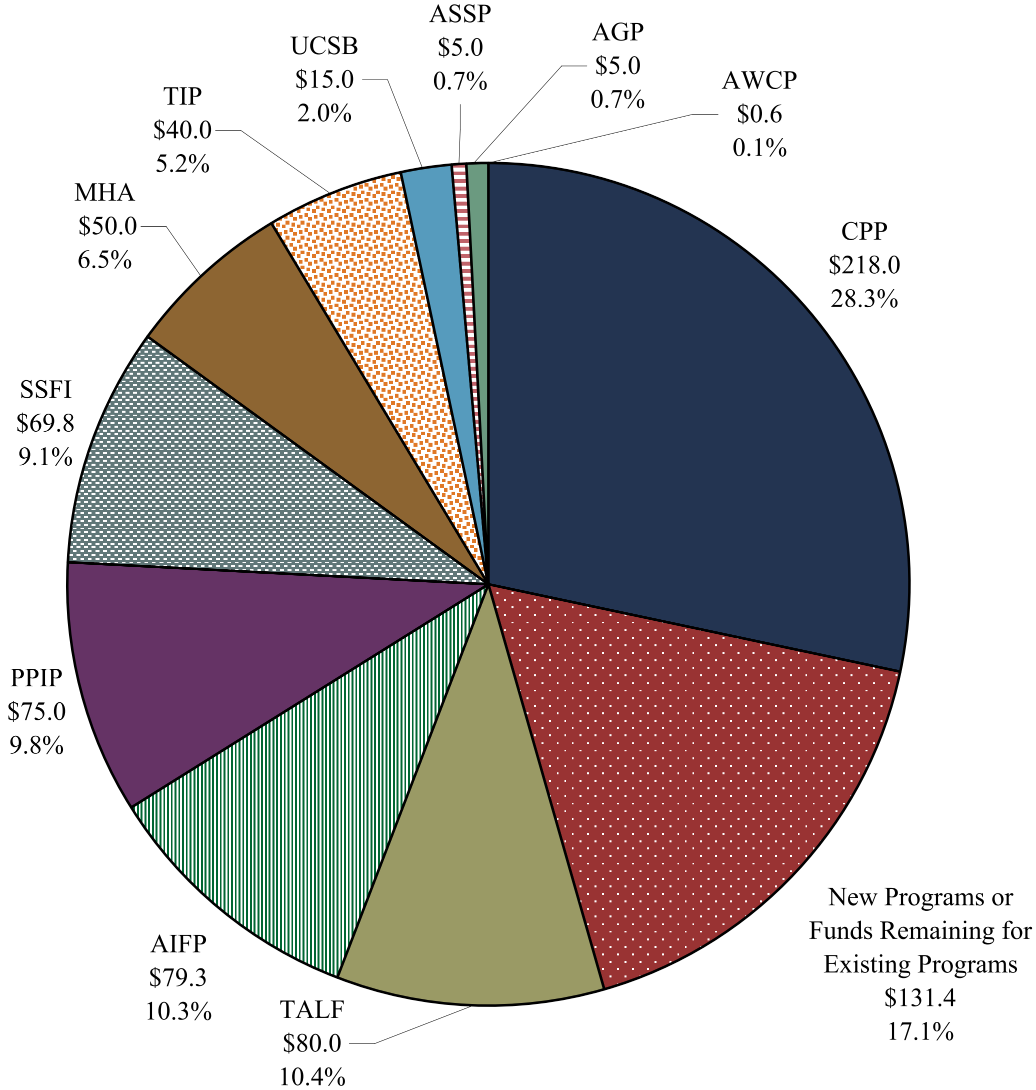
Note: Pie chart represents the general categories making up the $787 billion American Recovery and Reinvestment Act of 2009.

Table L

TARP FUNDING PROJECTION

As of June 30, 2009

US$ Billions



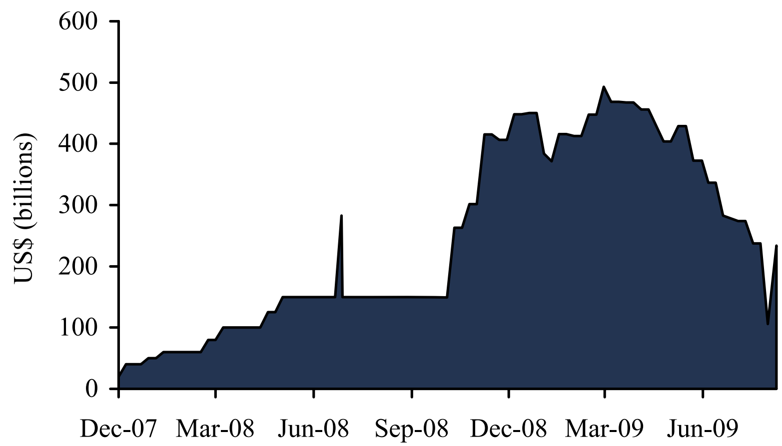
AGP	Asset Guarantee Program	PPIP	Public-Private Investment Program
AIFP	Automotive Industry Financing Program	SSFI	Systemically Significant Failing Institutions Program
ASSP	Auto Suppliers Support Program	TALF	Term Asset-Backed Securities Loan Facility
AWCP	Auto Warranty Commitment Program	TIP	Target Investment Program
CPP	Capital Purchase Program	UCSB	Unlocking Credit for Small Businesses Program
MHA	Making Home Affordable Program		

Source: Office of the Special Inspector General for the Troubled Asset Relief Program.

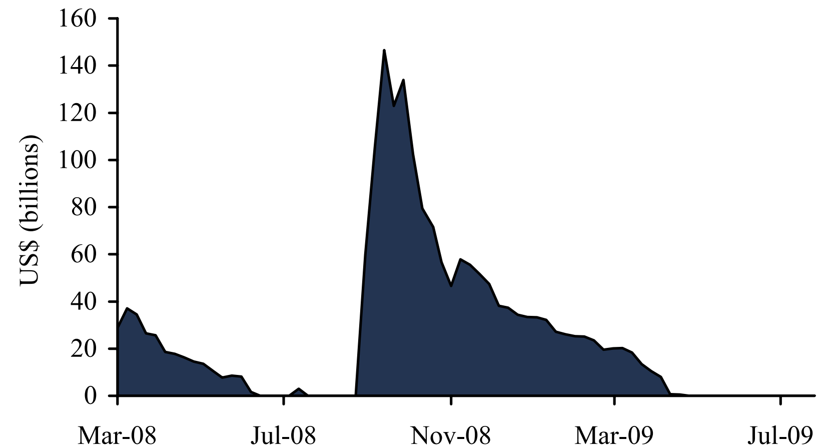
Table M

OUTSTANDING BALANCES OF SEVERAL FEDERAL RESERVE PROGRAMS

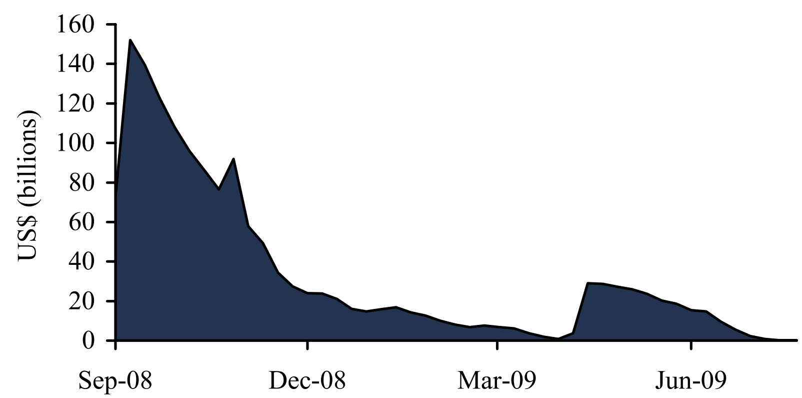
Term Auction Facility



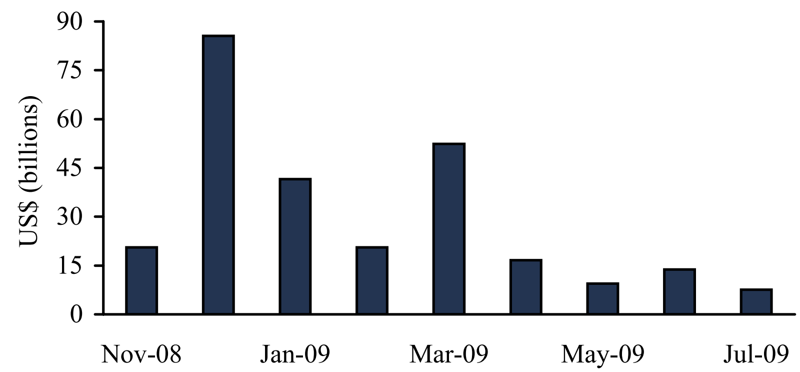
Primary Dealer Credit Facility



Asset-Backed CP MM Mutual Fund Liquidity Facility



Temporary Liquidity Guarantee Program

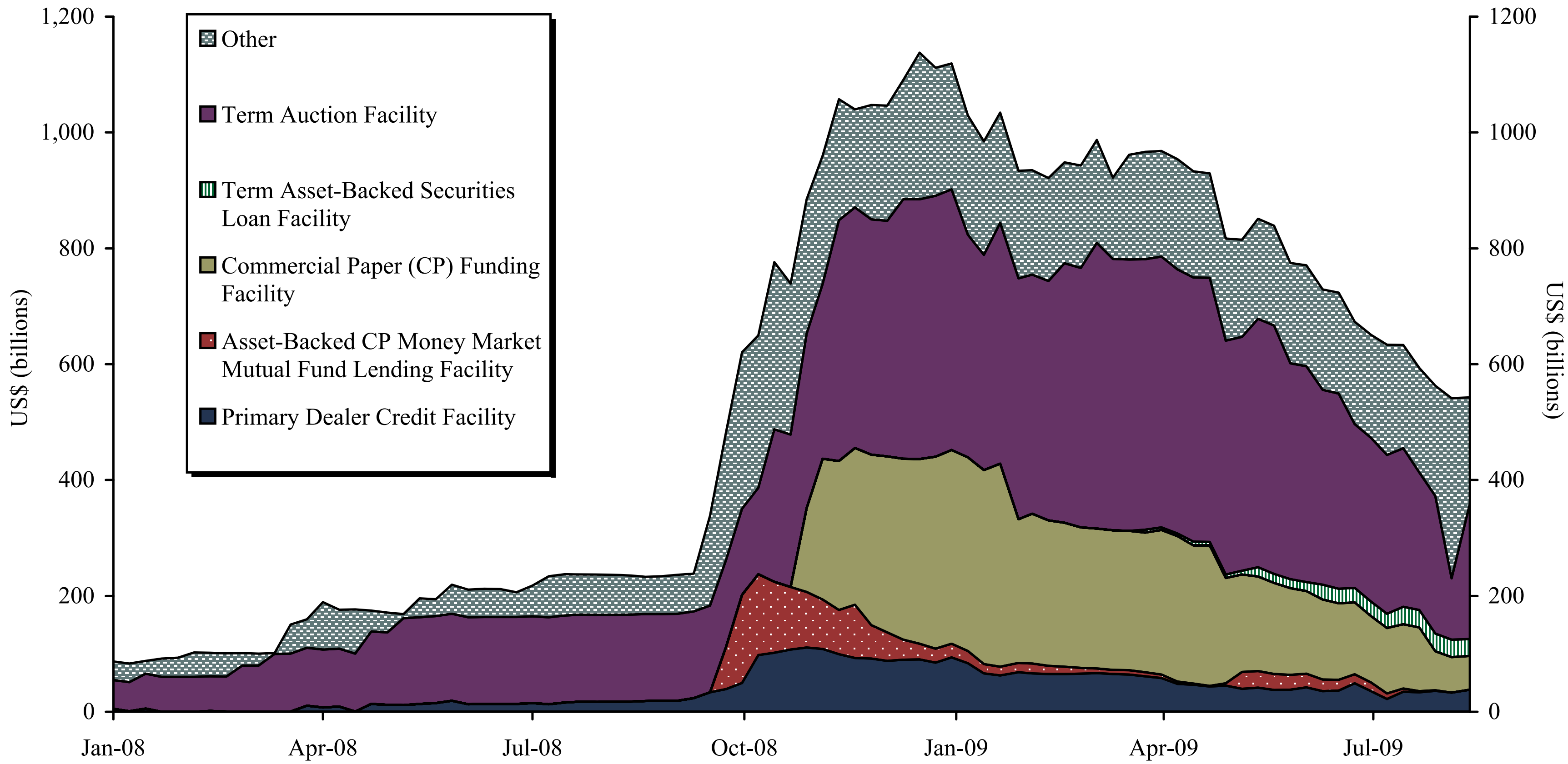


Sources: Dealogic and SIFMA.

Table N

BREAKDOWN OF SOME OF THE CREDIT FACILITIES ON THE FED'S BALANCE SHEET

January 2, 2008 – August 13, 2009



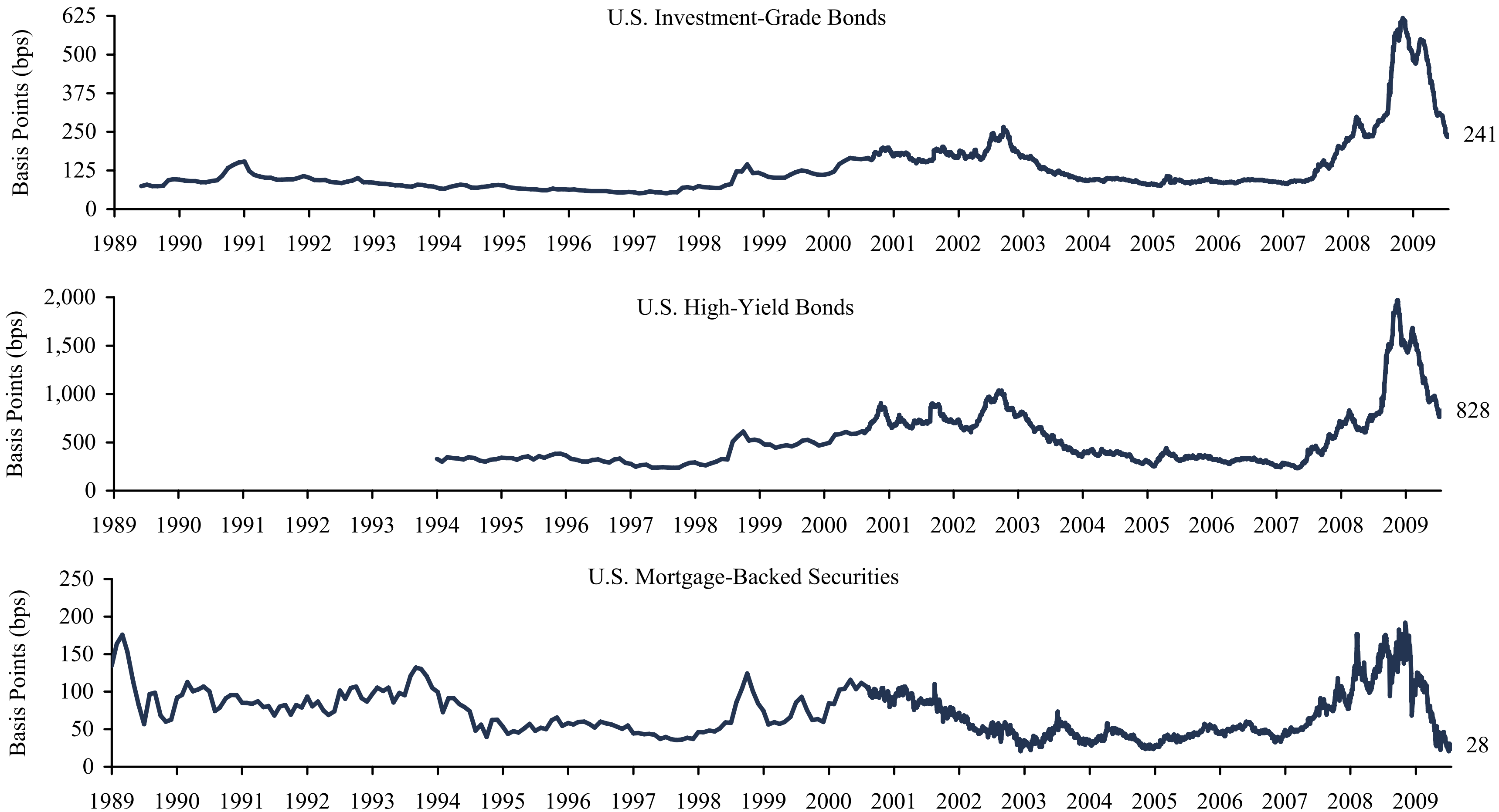
Source: SIFMA.

Notes: Data are weekly. Credit facilities represent "other credit facilities" included in Table T and do not include central bank swaps or the Fed's purchases of federal securities.

Table O

OPTION-ADJUSTED SPREADS ON CORPORATES, HIGH YIELD AND MORTGAGES

January 31, 1989 – August 17, 2009



Sources: Barclays Capital and Ned Davis Research, Inc.

Notes: Data for investment-grade and high-yield bonds start in June 1989 and January 1994, respectively. Daily data begin on September 1, 2000, for each index. Prior data are monthly.

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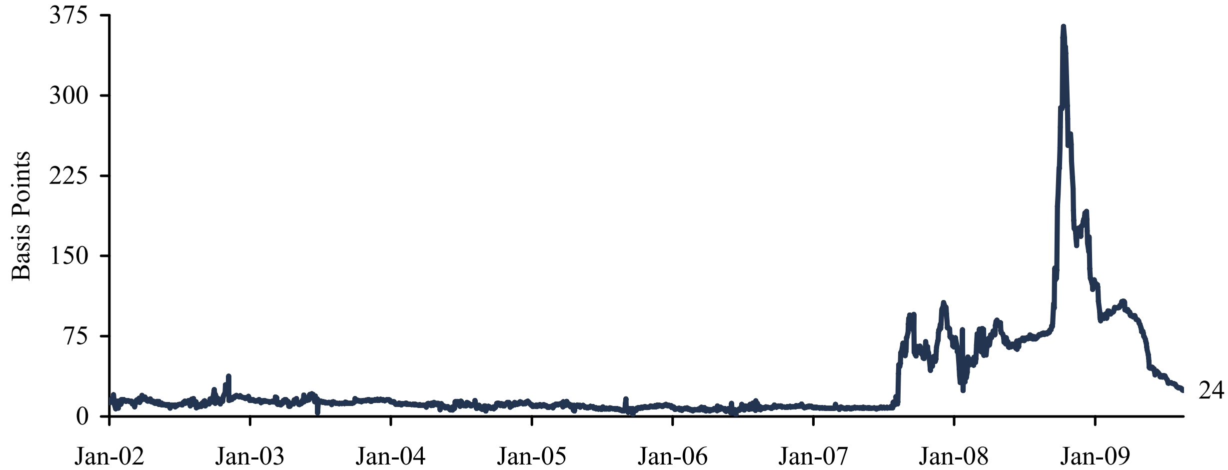
Table P

LENDING SPREADS

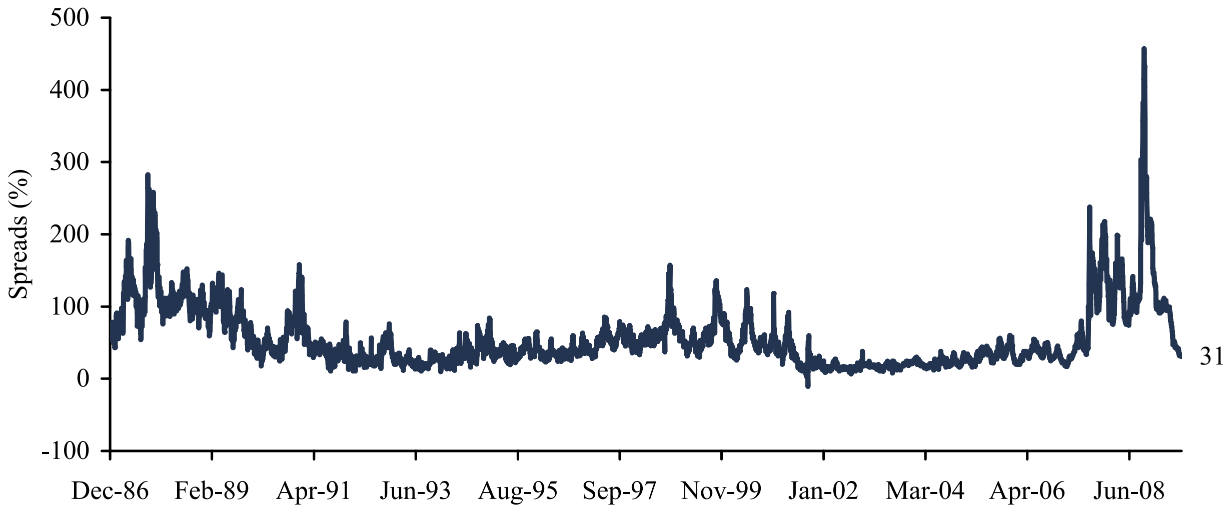
Spread of Libor Over Overnight Index Swaps

January 1, 2002 – August 17, 2009



TED Spreads (US$ Libor Yield Minus Treasury Bill Yield)

December 31, 1986 – August 17, 2009



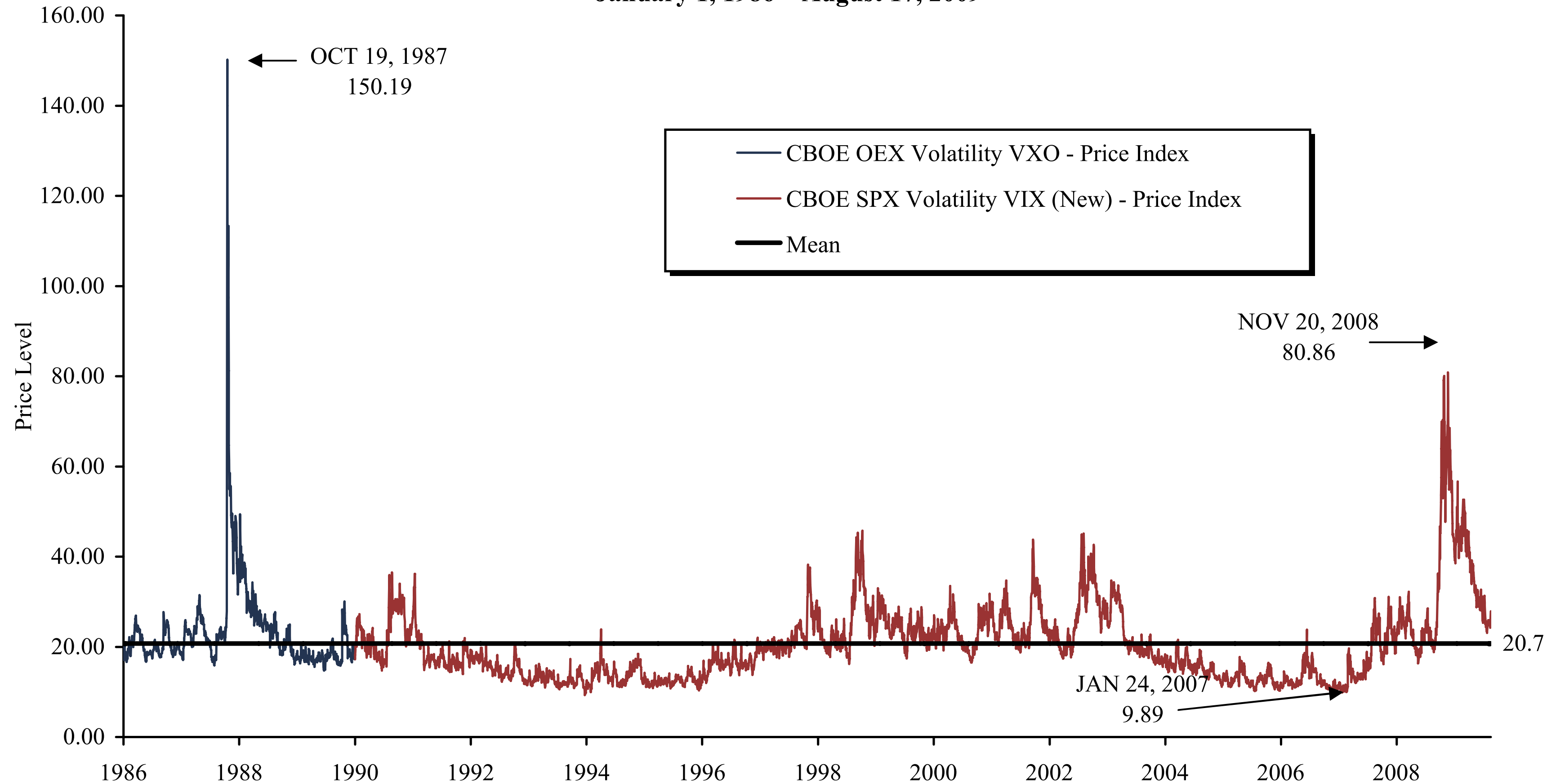
Sources: Bloomberg L.P. and Thomson Datastream.

Notes: All data are daily. The TED spread is calculated by subtracting the three-month Treasury bill yield from the three-month Libor yield.

Table Q

CBOE VOLATILITY INDICES

January 1, 1986 – August 17, 2009



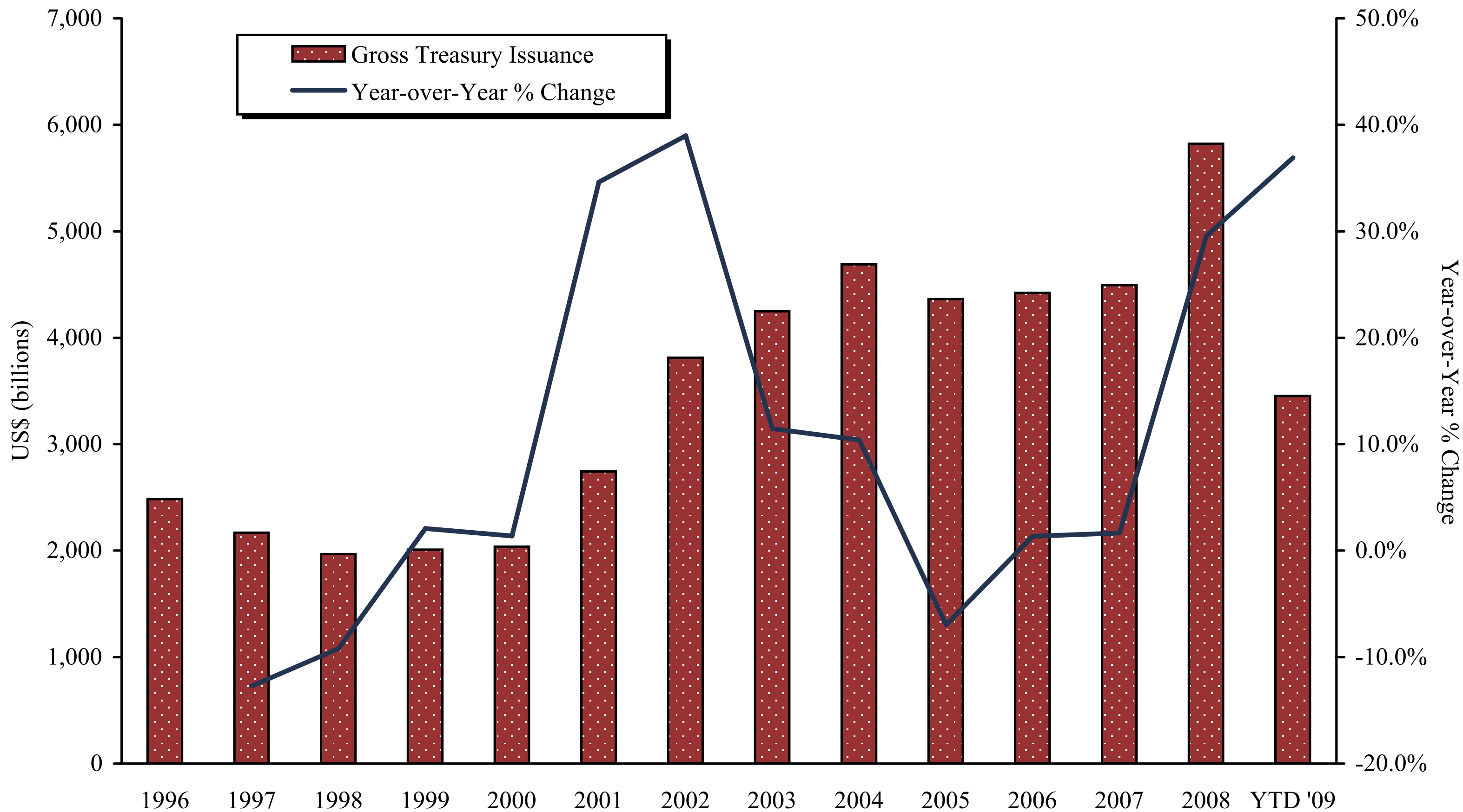
Source: Thomson Datastream.

Notes: The VIX represents implied volatility of the S&P 500 Index and the VXO represents the implied volatility of the S&P 100 Index, calculated using option premia. The 1987 data label refers to the VXO and subsequent data labels refer to the VIX.

Table R

TREASURY ISSUANCE

1996–2009



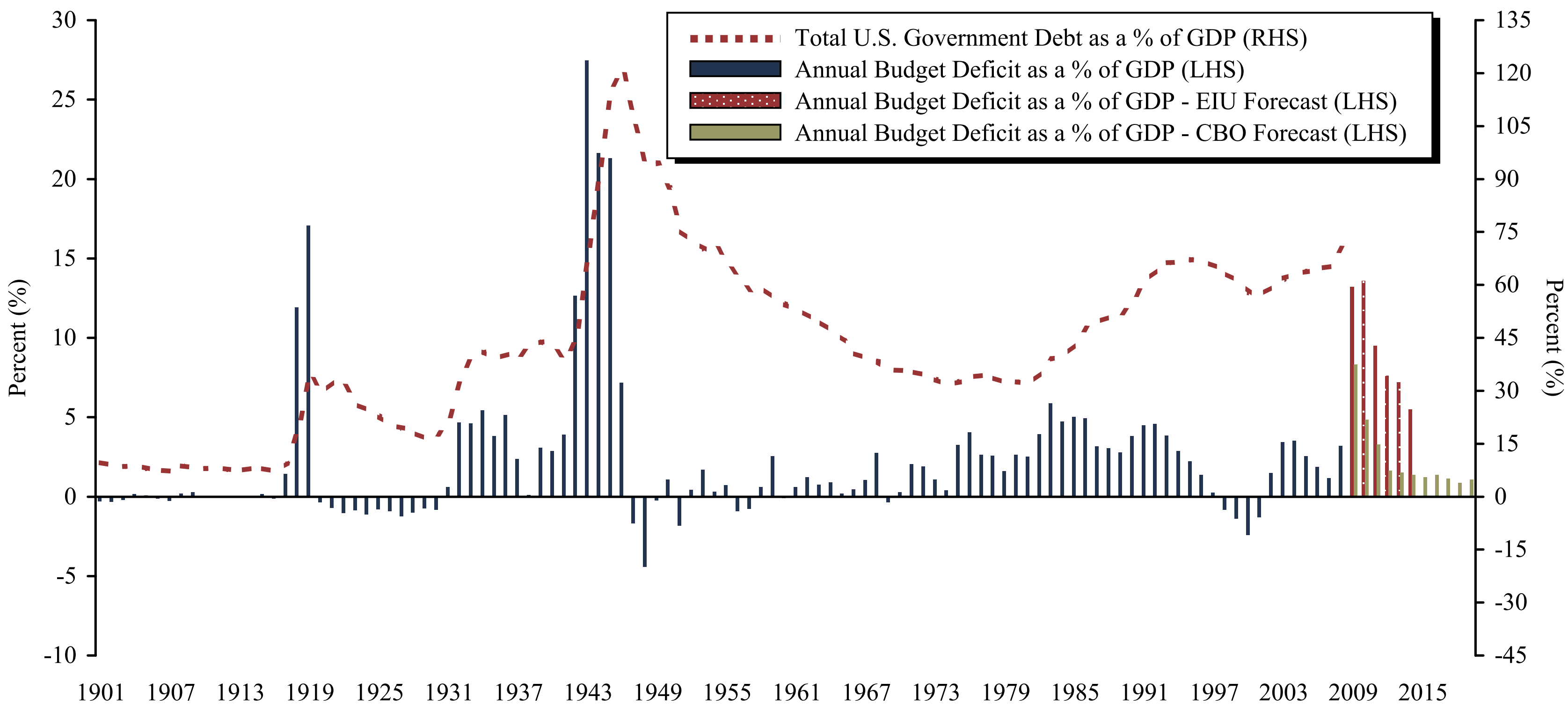
Source: SIFMA.

Notes: Data are through June 30, 2009. SIFMA provides other data that suggest gross Treasury issuance in 2008 and 2009 may exceed figures used in this chart.

Table S

U.S. BUDGET DEFICIT AND TOTAL U.S. GOVERNMENT DEBT AS A SHARE OF GDP

1901–2019



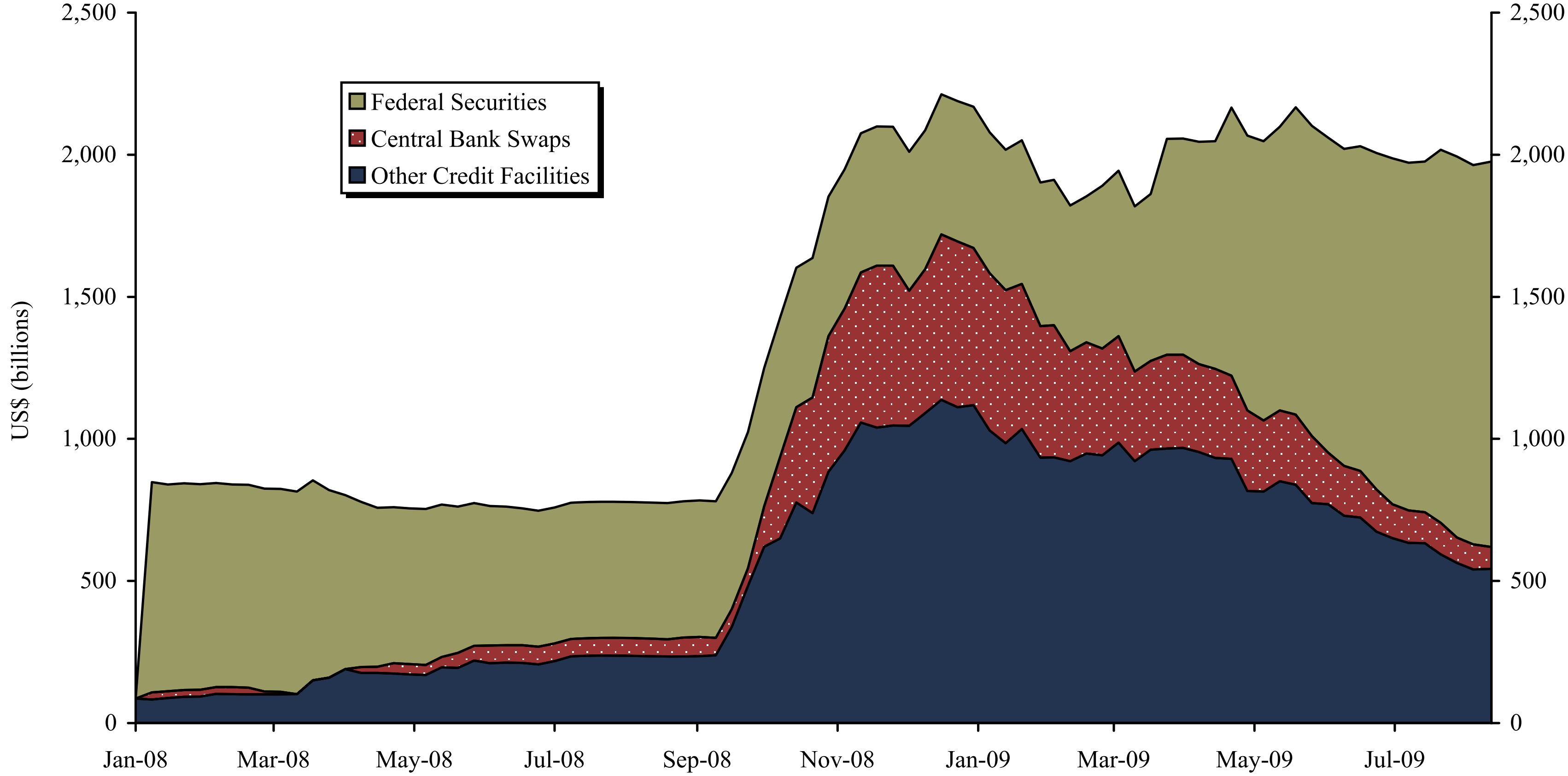
Sources: Congressional Budget Office, Economist Intelligence Unit, Institute for the Measurement of Worth, U.S. Department of the Treasury - Bureau of the Public Debt, and the White House Office of Management and Budget.

Notes: Data for 2008 are through September 30 (end of fiscal year 2008). Total U.S. government debt includes debt held by the public and intergovernmental holdings. Forecasts for 2009 through 2014 provided by the Economist Intelligence Unit. Forecasts for 2009 through 2019 provided by the Congressional Budget Office.

Table T

THE FED'S NEW BALANCE SHEET

January 2, 2008 – August 13, 2009



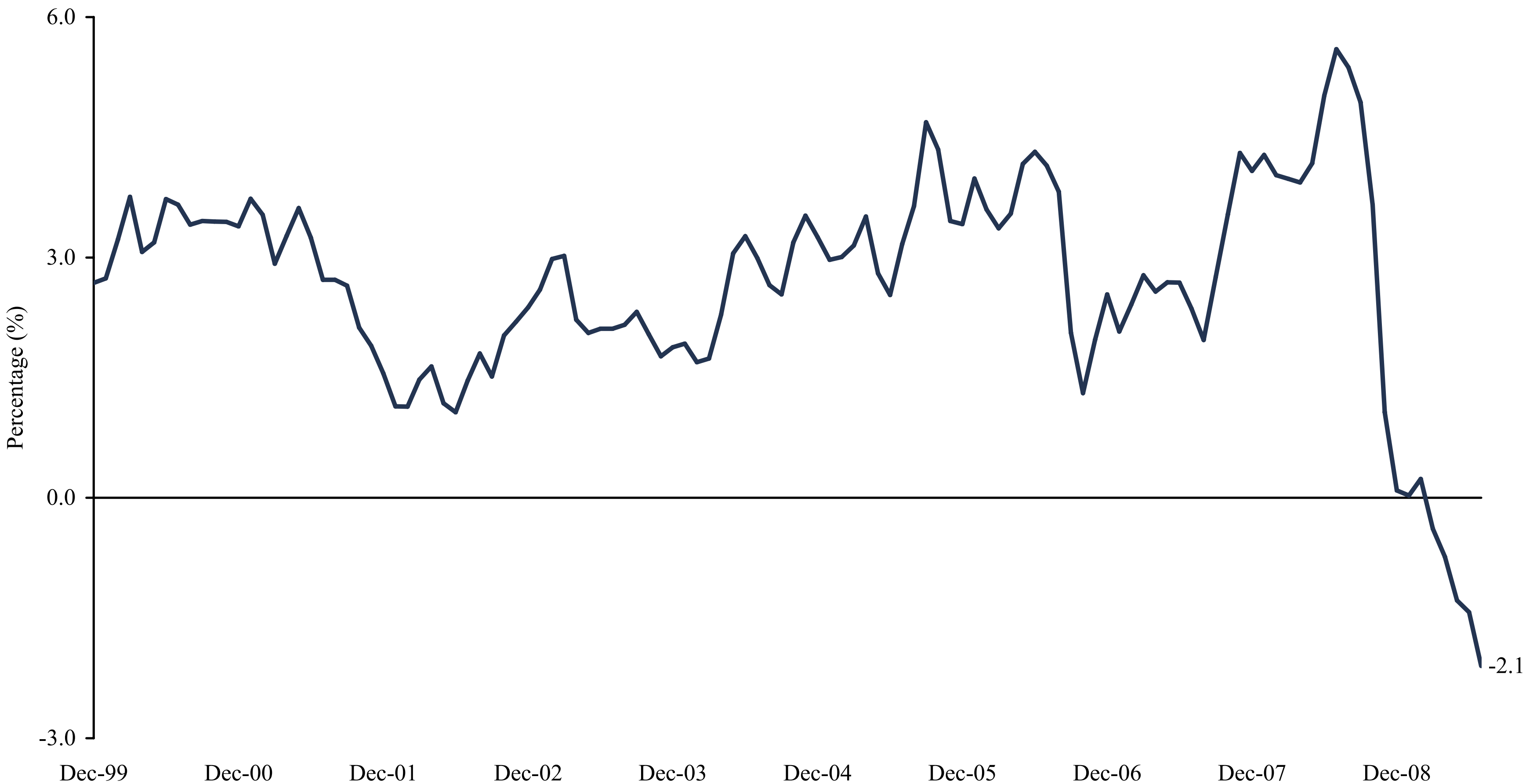
Source: SIFMA.

Note: Data are weekly.

Table U

ROLLING 12-MONTH CONSUMER PRICE INFLATION

December 31, 1999 – July 31, 2009



Source: Thomson Datastream.

Note: Graph represents monthly data.