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Lessons for the Future from the Financial Crisis

Eric S. Rosengren
President & Chief Executive Officer
Federal Reserve Bank of Boston

Massachusetts Newspaper Publishers Association Annual Meeting

Boston, Massachusetts
December 3, 2009

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First let me thank you for inviting me to speak with you today. I have always loved newspapers, and now as a policymaker I have an even greater appreciation for the ways that reporters, editors, and publishers inform the public, ask good and important questions, and often influence outcomes.[*]

From all I have been hearing, it is not an easy time to be a newspaper publisher. So we have something in common. It has not been an especially easy time to be a central banker, either.

[*] *Of course, the views I express today are my own, not necessarily those of my colleagues on the Board of Governors or the Federal Open Market Committee (the FOMC).*

As publishers you must spend a great deal of time thinking about the key stories of our time – and the ways that your employees are uncovering them, reporting them, and putting forth the narratives that engage readers and shape the common understanding. Here, too, we have something in common. Central bankers care deeply about what people believe – that is, the stories they deem true – about issues like economic growth, financial stability, and inflation expectations. I know we could do a better job of explaining ourselves and communicating – although I think we do a much better job now than we did in the past.

Beyond those core central bank responsibilities, we also follow with intense interest the commonly accepted narratives – the stories, if you will – of this extraordinary financial crisis. Making sure these complex stories are known and understood can benefit everyone, if in doing so we find ways *to avoid repeating* the problems of the past two years. It is also important that we don't assume the wrong lessons and adopt the wrong policies, going forward.

Of course, it is important and natural for the public, and the public's representatives in Congress, to ask how the nation encountered such problems, and to vigorously explore what public policies – including those related to the central bank – would best prevent future crises. In short, to insist on getting the "straight story."

In that spirit, today I would like to "report" to you three stories of this crisis – specifically around the controversial, emergency actions taken by the central bank. Understanding the *context* of those actions may help in understanding what policy reforms are necessary.

While I can't claim to be fully objective, I pledge to tell it like I saw it. The three stories I will touch on are the following:

- First, why it was necessary to "bail out" certain firms – like AIG – and what this story teaches us about avoiding such necessities in the future.
- Second, why the Federal Reserve took such aggressive action to dramatically expand its balance sheet to address the crisis – and what implications and effects we expect from those actions.
- Third, the story behind what seems to many like a tendency of the Fed and other policymakers to focus more on Wall Street than on Main Street.

The Straight Story, Book One

The story of AIG is being told by many observers. I want to give you my take on why it was necessary to "bail out" AIG – and what the story says about how such outcomes can be avoided in the future. This narrative is, at its heart, about "the lesser of several evils."

AIG was the largest U.S. insurance company, with extensive business activities around the world. Importantly, AIG was one of the few companies that carried a Triple A credit rating.

The insurance subsidiaries were overseen by state insurance regulators, since there was and is no federal regulator for insurance, and the Federal Reserve does not have regulatory authority over insurance companies (nor do the OCC or FDIC, for that matter). AIG owned a small savings and loan institution that the Office of Thrift Supervision oversaw. Indeed, from our perspective the fact that the Federal Reserve had little by way of concrete, quantifiable information on the activities of the country's largest insurer, *because it had no role in regulating or supervising the company,* was one of the serious problems going into this crisis.

As a result of AIG's Triple A credit rating, a group of "financial engineers" in a relatively small subsidiary of the company (AIG Financial Products) realized that they could sell insurance against the default of securities, including securities backed by subprime mortgages. Because of AIG's reputation and stellar rating, parties felt comfortable buying the insurance (knows as credit default swaps) from AIG, and AIG became a major insurer against credit losses on these types of securities.

There was little supervisory oversight of the institution, and these transactions. In effect, the subsidiary became an unregulated hedge fund within AIG using the credit rating of the entire company to place large bets, with little held in reserve against these bets going bad.

This reflects a significant risk-management breakdown within the company. It also represents a significant gap in supervision and regulation, because AIG had become systemically important by virtue of its out-sized role in writing this kind of insurance – but no one was aware of the full extent of the activities that made it systemically important and risky.

Vital to this story and the others I will tell you today is the *context* – essentially, what was happening in the economy and financial markets as AIG's problems were being revealed. **Figure 1** provides a timeline showing some of those events.

Bear Stearns had failed earlier in the year, Lehman Brothers had failed that weekend, and it was announced that Merrill Lynch was being acquired. The viability of the traditional investment banking model was fully in question. The stock market had declined sharply (as shown in **Figure 2**), and many of the credit markets were in severe disarray. Freddie Mac and Fannie Mae had been taken over by the government. The losses on assets in a money-market fund known as the Reserve Fund pushed its value below 100 cents on the dollar – it "broke the buck" – and this caused a run on prime money market funds that, as **Figure 3** shows, was seriously disrupting short-term financial markets as mutual funds scrambled to increase liquidity. There was essentially a "run" on prime money-market funds. And several very large banks were rumored to be in trouble – including Wachovia, the nation's fourth largest bank; and Washington Mutual, the largest remaining thrift since Countrywide had been acquired.

My next slide **(Figure 4)** reprints some of the unprecedented headlines emanating, morning after morning, in some of the darkest days of the crisis. To me, they serve as a bracing reminder of where we were then – and, again, the context for what was done.

Many firms were reporting an unwillingness to trade in financial contracts, as the health of the counterparties to those contracts became a growing concern. You've probably heard the maxim that markets abhor uncertainty, and the aforementioned problems left almost every counterparty tainted by uncertainty related to "cratering" assets they might be holding – representing losses which might prevent them from holding up their end of financial contracts. Fear approaching panic swept through global credit markets.

A manifestation of this panic was an unprecedented increase in the interest rate at which large global banks were willing to lend to each other for even very short periods of time, relative to the short term rates influenced by the Federal Reserve. You can see the dramatic widening of the spread between the two in **Figure 5**.

In this context – let me bring in a second headlines slide (**Figure 6**) – a sudden and disorderly bankruptcy of a company with the global scope, deep reach, and voluminous activity of AIG would have severely exacerbated the crisis. Banks and financial firms that thought their AIG insurance protected them against losses on the mortgage-based securities they held would teeter on insolvency if, to their surprise, their AIG insurance evaporated and they saw large additional losses. *Their* counterparties – firms that had lent them money and expected repayment – in turn quickly became fearful that their debtors might have exposure to an AIG failure, which could threaten their ability to repay and lead to runs on these institutions.

In short, the failure of AIG would have caused very large losses at, and indeed possibly failures of, many financial firms. While it is impossible to know exactly what would have happened – what we like to call the counterfactual – I believe AIG's failure could well have caused cascading failures of many financial institutions, reminiscent of the Great Depression. This would have further frozen credit creation, and the end result would likely have been an even higher – I believe much higher – national unemployment rate than the very high rate we see now. Let me bring up my third and final headlines slide (**Figure 7**) which shows us some of what happened anyway, in late September and early October of 2008.

Faced with a rapid and disorderly failure, the best outcome – hypothetically – would probably have been for the government to take over AIG. The shareholders would have been wiped out, management removed, and the company placed in receivership. While that sounds rather grave, such a relatively orderly government take-over would have avoided many of the consequences of the *dis*orderly failure that I just outlined. Unfortunately, though, there was no applicable resolution authority in place to accomplish this for AIG or for other systemically important, *non-bank* financial actors. And there still is none today. With banks, resolution authority exists and is administered by the FDIC. Not so for non-bank financial organizations.

Thus the experience with AIG revealed two gaps in the regulatory framework. No one was charged with regulating or supervising the high-risk behavior; and once everything went wrong, no framework existed to resolve the institution in an orderly manner.

If you will indulge me a metaphor, the lack of resolution authority is akin to having a highway that moves well most of the time. Small accidents occur, and generally the parties pull to the side with only minor disruptions to traffic – although those directly involved in the accident may be seriously impacted. However, if a large tractor trailer overturns, you need equipment that can handle an accident involving a vehicle of that size. Emergency equipment that could handle small vehicles might be totally lacking in this case. In the absence of such equipment, the roadway grinds to a halt and everyone who uses that road is affected – not just those directly involved in the accident. Even those with no interest in using the highway may find themselves in traffic jams that spill over onto surface roads.

We have been operating in a world where small bank failures can be addressed with acceptable side effects, but large bank failures or the failures of large non-bank financial firms cannot. It is in everyone's interest that the tools exist to clear large "vehicles" and keep the "roadways" moving.

Again, an AIG bankruptcy was likely to completely freeze over already frigid financial markets, and create runs on AIG's many counterparties. So the problem had to be contained. Since no resolution authority (outside of bankruptcy) existed in U.S. law for a firm like AIG, and because no other financial institution was able and willing to buy AIG and internalize its financial problems, the only option for containing the problem was an emergency loan from the Federal Reserve. Regrettably, an emergency loan is a far-less-than-optimal solution. But I believe it was the only reasonable solution available at the time. We abhorred the steps taken, but thought them to be the lesser of several evils, given the situation.

Allow me to sum up the two gaps I mentioned a moment ago – gaps that remain today. First, no one was explicitly responsible for systemically important institutions. Second, lacking a framework of resolution authority, policymakers were faced with the option of an unprecedented bankruptcy that may have caused a run on financial markets and institutions.[1]

As a result, the Federal Reserve felt compelled, by the likely downsides of a bankruptcy, to lend to a company over which it had no regulatory or supervisory oversight, in a very limited time frame, in order to prevent a true financial-system meltdown.

There are many distasteful parts to this story, and the frustration many feel is absolutely understandable. I would simply suggest that the most important narrative is that the legal framework for resolution in an orderly, transparent, and more palatable manner *did not exist – but should have, and must as we move ahead.*

Indeed, while these controversial Fed actions were taken to prevent widespread problems for the entire economy, with proper resolution authority in place in the U.S., the Federal Reserve would not have needed to be involved with AIG at all.

The Straight Story, Book Two

My second story is about why the Federal Reserve had to expand its balance sheet so dramatically to address the crisis, and the implications of its swollen balance sheet. And how the need for such actions can be avoided in the future. Let me bring up **Figure 8.**

This narrative is, metaphorically, about the triage necessary in an "emergency room" atmosphere where, amidst the confusion and stress of the moment we found we had more creativity than many thought – leading to some very helpful "treatments" for the patients.

To see how dramatic the expansion in the Federal Reserve balance sheet has been, consider Figure 8**.** Prior to the crisis, the Federal Reserve had a balance sheet of $880 billion. Today it has expanded – more than doubled – to over $2 trillion. You can see why some eyebrows have been raised.

Initially, most of this expansion was a consequence of attempting to "restart" financial markets in the wake of their freezing up after the failure of Lehman Brothers.

Figure 9 gives one picture of the freeze-up by showing the dramatic decline in securitization of financial assets like home equity loans, credit card receivables, student loans, and car loans.[2] While there are alternatives to securitization, such as bank lending, this represented a narrowing of financing sources and was likely to increase costs for the borrowers.

I'll mention one example of Fed efforts. At the Boston Fed we operated the asset-backed commercial paper money market liquidity facility or "AMLF" on behalf of the Federal Reserve System. The light green area in **Figure 10** represents the AMLF, which provided money market funds – an increasingly important corner of the financial world – the ability to sell asset-backed commercial paper. The funds were having significant difficulty selling the paper because potential buyers were concerned about the extent to which it was backed by troubled mortgages – a risk most were unwilling to bear. The mutual funds, however, needed to sell the paper in order to meet the substantial redemption requests that arose as money market fund depositors sought to move their deposits to insured institutions in the wake of Lehman's failure.

In the first ten days of operation, the AMLF lent out $150 billion. Please note that I said "*lent* out," not "gave out."

The facility currently has no loans outstanding and should improvements in market conditions continue, we may close it in February. It was structured to be attractive during times of financial stress, but unattractive under more normal economic conditions.

The facility experienced no losses – all the loans were repaid, with interest. Since the Federal Reserve delivers excess returns to the Treasury, this program not only supported money markets and the asset backed commercial paper markets, which were under great stress, but also as a side benefit generated income after expenses that we return to taxpayers. The Fed's other market-stabilizing "emergency room" activities, such as the commercial paper facility and the foreign central bank swap lines, similarly helped stabilize panicked markets and are winding down naturally as markets normalize.

Even after all we did to provide and maintain sources of short-term funding, the Fed's traditional policy tool – the short term interest rate – encountered the "bound" of zero. To offset our inability to lower interest rates any further, we made a policy decision to undertake programs to buy Treasury and mortgage-backed securities (see **Figure 11**). This was designed to support market function, and ease credit conditions, in the mortgage market. While the Treasury purchase program was an extension of traditional Fed open-market operations that we use to set short-term interest rates, the mortgage-backed securities program was a significant departure from conventional policy.

Since announcing the program at the March FOMC meeting, the Fed has purchased $300 billion worth of additional Treasury securities. The less traditional mortgage-backed securities program is scheduled to purchase $1.25 trillion by the end of the first quarter of 2010. Maintaining a healthy mortgage finance market is a critical economic policy goal, because housing is a major component of most economic recoveries – and because the housing sector has been significantly impacted by this downturn.

In fact, residential investment turned positive in the third quarter of 2009 after 14 straight quarters of decline.[3] While there are many factors that account for the improved housing outlook, including the government's first-time homebuyer tax credit program,

Figure 12 highlights that 30-year mortgage rates declined on the announcement of the purchase program and have remained low since the Fed began purchasing mortgages. Prior to the announcement of the program, the 30-year mortgage rate was over 6 percent, while over the past 6 months the mortgage rate has hovered around 5 percent.

Still, some are concerned that the expansion of our balance sheet will be inflationary. For several interrelated reasons, I do not believe this will be inflationary in the near term, and I offer them as critical parts of this story.

First, we can look to the one recent instance of a central bank in a developed economy setting its policy rate to zero and dramatically expanding its balance sheet – Japan. Despite the increase in the Bank of Japan's balance sheet, shown in the red line of **Figure 13**, Japan's main problem has been deflation, not inflation (as shown by the blue line in that figure).

Second, despite the expansion of our balance sheet, U.S. inflation has been declining. This is typical of recession periods (see **Figure 14**) for the same reasons that Japan experienced deflation – labor markets remain slack as recessions end, and labor costs are subdued. So total and core inflation tend to be much lower coming out of a recession than going in. Currently in the U.S., labor markets are weak, and labor costs have been trending down, not up (see **Figure 15**), as has been the case in previous U.S. recessions and in Japan over a more protracted period.

Third, expansion of reserves could be inflationary if banks had healthy capital ratios and loan demand was strong in an economic environment close to full employment. Unfortunately, I do not expect those conditions to predominate in the near term.

And, in general, I am confident that as conditions merit, the Federal Reserve will adjust the stance of monetary policy to an appropriately less accommodative stance.

While the Fed's aggressive actions and unprecedented policy stance may be a bit unsettling, I think this is a story of effective emergency action that will wind down naturally as the emergency conditions subside, and treatments that will set the patients on the road to recovery.

The Straight Story, Book Three

The third story I offer you today involves what seems like a tendency of policymakers to focus more on Wall Street than on Main Street.

This narrative is, at its heart, about fixing the underlying "plumbing" or the supporting infrastructure of the economy. The commonly held narrative, quite understandably, has been Wall Street *versus* Main Street. I might suggest the actual story is more about where, like it or not, Wall Street and Main Street *intersect* and are *interdependent* – and that too few appreciated this reality before the crisis and even now with the benefit of hindsight.

The recent *financial* crisis clearly exacerbated problems in what we call the "real economy" – the production of tangible goods and services by real workers using real capital equipment and materials. The Federal Reserve has a mandate from Congress to pursue policies that yield maximum employment consistent with price stability. As economic problems became worse, the Federal Reserve took many actions that have received substantial public scrutiny, and criticism – but, I believe, substantially mitigated problems that would have otherwise adversely affected employment and price stability. This was consistent with our mandate.

As I suggested earlier, we undertook many of the actions to support individual financial institutions because we lacked viable alternatives to prevent a full-scale meltdown of the financial sector, with its damaging impact on everyone. With no entity responsible for ensuring financial stability and no way to resolve systemically important non-bank financial firms (which is important because the non-bank "shadow" banking system played an expanding role in credit delivery to firms and individuals[4]), the Fed stepped in to prevent a series of financial failures that could and would have led to a much worse outcome for the economy – and thus for all "residents of Main Street."

I can assure you, the immediate inclination was to let these institutions fail as a consequence of their risk-management breakdowns. But when weighed against the resulting losses in employment throughout the economy that were likely to mount if they *had* failed, we "held our noses" and did what we felt we had to do to prevent the actions of Wall Street from inflicting *further* collateral damage on Main Street.

My hope is that the work being done by Congress will remedy these significant regulatory gaps. My hope is that the Federal Reserve will not be in a position of needing to choose the lesser of two or more evils and lend to a deeply troubled yet systemically important financial institution it does not supervise. Similarly, my hope is that the Fed will not be in a position of needing to try to put in place ad hoc emergency remedies to stem the adverse economic consequences of a disorderly failure of one or more of these systemically important institutions.

Many of our actions operated through financial institutions or financial markets, but were designed to help Main Street weather a crisis. While the crisis was not of Main Street's making, it took place within the financial infrastructure Main Street relies upon for credit, capital, and liquidity – an inherently frustrating scenario for citizens, to be sure.

However, measures like the Fed's mortgage-backed securities purchase program have improved mortgage-market conditions, making it more affordable to obtain a loan for a home purchase or to refinance an existing mortgage. Our AMLF program was intended to support money market mutual funds at a time of great stress and, ultimately, shore up the market for commercial paper – a market that makes credit cards, student loans, and home equity loans more affordable. Our Term Asset-Backed Securities Loan Facility or TALF program was designed to improve securitization, which makes credit more affordable, by facilitating the renewed issuance of consumer and small-business asset-backed securities – essentially providing a financing vehicle for credit instruments that had been disrupted by poor functioning in securitization markets. In doing this, the facility helps make credit more available for student loans, consumer credit, commercial real estate, and small business loans; leading to lower borrowing rates and improved access in the market for consumer and small business credit.

Altogether, our programs to support financial institutions and financial markets were intended to prevent a financial collapse – not to benefit financial institutions, but to avoid a dramatically higher unemployment rate across the economy.

The actions by the Federal Reserve, while out of the ordinary and out of our own comfort zone, were what were necessary during these trying times. Hopefully, we as a nation will take actions to ensure that many of these measures are not needed in the future.

Concluding Observations

I'm not sure if my three stories are told well enough to make it into the newspapers you all publish, but I thank you for listening.

I will conclude by noting that we are in a far better place than we were in the beginning of this year. I believe we are – appropriately – reading few if any articles that describe the nation as flirting with a second Great Depression. One reason we are hearing less about the risk of a second Great Depression is because of bold and creative actions taken by the Federal Reserve.

But let me acknowledge, without question, that the Federal Reserve, along with other regulators and parts of the government, did not accurately foresee and prevent all the problems that occurred over the past two years. We were far from perfect, but we are doing our best to learn from mistakes. We are partly responsible for the fact that we are coming out of a "great recession," and no policymaker can be happy about that.

But let me stress – in contrast to some recent pundits – that this was not just a Fed failure, or that of the public sector alone. Financial organizations and indeed many economic actors of all stripes did not properly explore, and manage, the risks they were taking on.

But in the absence of the actions taken once the problems were apparent, we would have seen outcomes far worse than those the nation experienced.

Also, importantly, we are doing a great deal to understand and apply the lessons of the crisis. As Chairman Bernanke and others have pointed out, we are for example reorienting the Fed's supervisory activities, in light of the lessons of the crisis, in areas like capital adequacy, risk-management practices, liquidity management, and the effects on risk-taking of compensation structures. And we are augmenting traditional firm-specific oversight with a more macroprudential[5] approach to anticipating and addressing threats to financial stability – that is, one that goes beyond a focus on the safety and soundness of individual institutions to also focus on risks to the financial system as a whole.[6]

In particular, I would point to the fact that avoiding a much more damaging wholesale financial collapse hinged in no small part on key parties like the Federal Reserve having the ability to obtain accurate assessments of financial firms' conditions, and having the ability to influence the actions of key financial institutions and financial markets. Again, this was critical to avoiding an even more damaging financial collapse.

One response to the crisis would be to limit the central bank's activities solely to monetary policy, curtailing the Fed's supervisory and lender-of-last-resort roles. My view – built on careful research, my experience as a bank supervisor and Discount Window lender, and my time as a member of the FOMC – is that supervisory and lender-of-last-resort responsibilities currently in place at the Fed were critical to preventing far worse outcomes for the economy and the country.

It is obviously appropriate, and important, for the public and the Congress to ask how we got into such a mess, why it was so hard to foresee, and how we can avoid such problems in the future. They should insist on getting the "straight story" – and on vigorously exploring what public policies would best prevent future crises.

I firmly believe the narratives I have shared today, and I hope they help shape understanding of this important episode – and what can prevent its recurrence.

Thank you.

NOTES:

[1] In addition, there is no legal framework for forcing so-called "haircuts" to existing contracts (that is, paying out less than 100 cents on the dollar), so AIG paid them in full.

[2] There was a significant decrease in asset-backed commercial paper (ABCP) outstanding. ABCP was frequently sold to money market funds and other intermediaries interested in holding short-term, high-quality paper. ABCP usually was sponsored by commercial banks that provided liquidity, credit support, or both. With the onset of the crisis it became increasingly difficult for such sponsors to place their commercial paper, as potential investors became concerned about both the credit quality of the assets and the credit quality of some sponsors. In addition, changes in accounting rules for off-balance-sheet conduits made this type of financing less economical. As a result, ABCP issuance has significantly decreased.

[3] Residential investment is the housing component of Gross Domestic Product (GDP). GDP is essentially the value of goods and services put in place during a time period. "The main indicator of the quantity of new housing supplied to the economy is the residential fixed investment series from the national income and product accounts. Residential investment is made up of new construction put in place, expenditures on maintenance and home improvement, equipment purchased for use in residential structures (e.g., washers and dryers purchased by landlords and rented out to tenants), and brokerage commissions." (Source: "Residential Investment over the Real Estate Cycle" by John Krainer, in the Federal Reserve Bank of San Francisco's *Economic Letter* #2006-15; June 30, 2006).

[4] See, for context, "More Lessons from the Crisis," a talk by New York Federal Reserve Bank president William C. Dudley, available at http://www.newyorkfed.org/newsevents/speeches/2009/dud091113.html.

[5] The IMF and OECD define macroeprudential analysis as "The assessment and monitoring of the strengths and vulnerabilities of financial systems. It encompasses quantitative information from both FSIs and macroeconomic indicators that provide (1) a broader picture of economic and financial circumstances such as GDP growth and inflation, along with information on the structure of the financial system, and (2) qualitative information on the institutional and regulatory framework—particularly through assessments of compliance with international financial sector standards and codes—and the outcome of stress tests." (http://stats.oecd.org/glossary/detail.asp?ID=6214)

[6] For additional perspective see, for example, "Financial Regulation and Supervision after the Crisis: The Role of the Federal Reserve," a speech by Fed Chairman Ben Bernanke, available at http://www.federalreserve.gov/newsevents/speech/bernanke20091023a.htm; or my talk on "The Roles and Responsibilities of a Systemic Regulator" available at http://www.bos.frb.org/news/speeches/rosengren/2009/062909.htm

Figure 1
Events from September 7, 2008 - October 14, 2008
Financial Turmoil Timeline

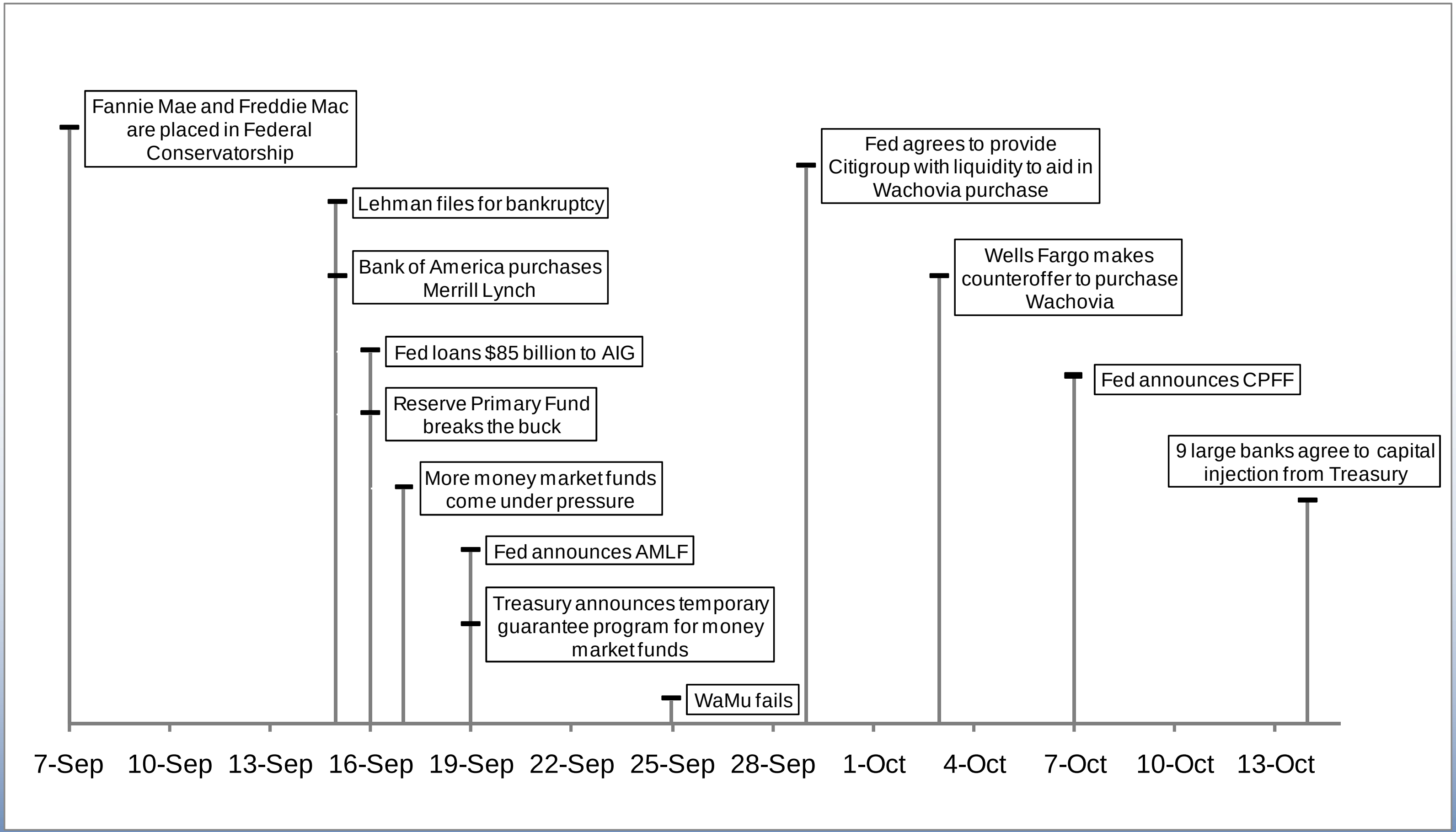
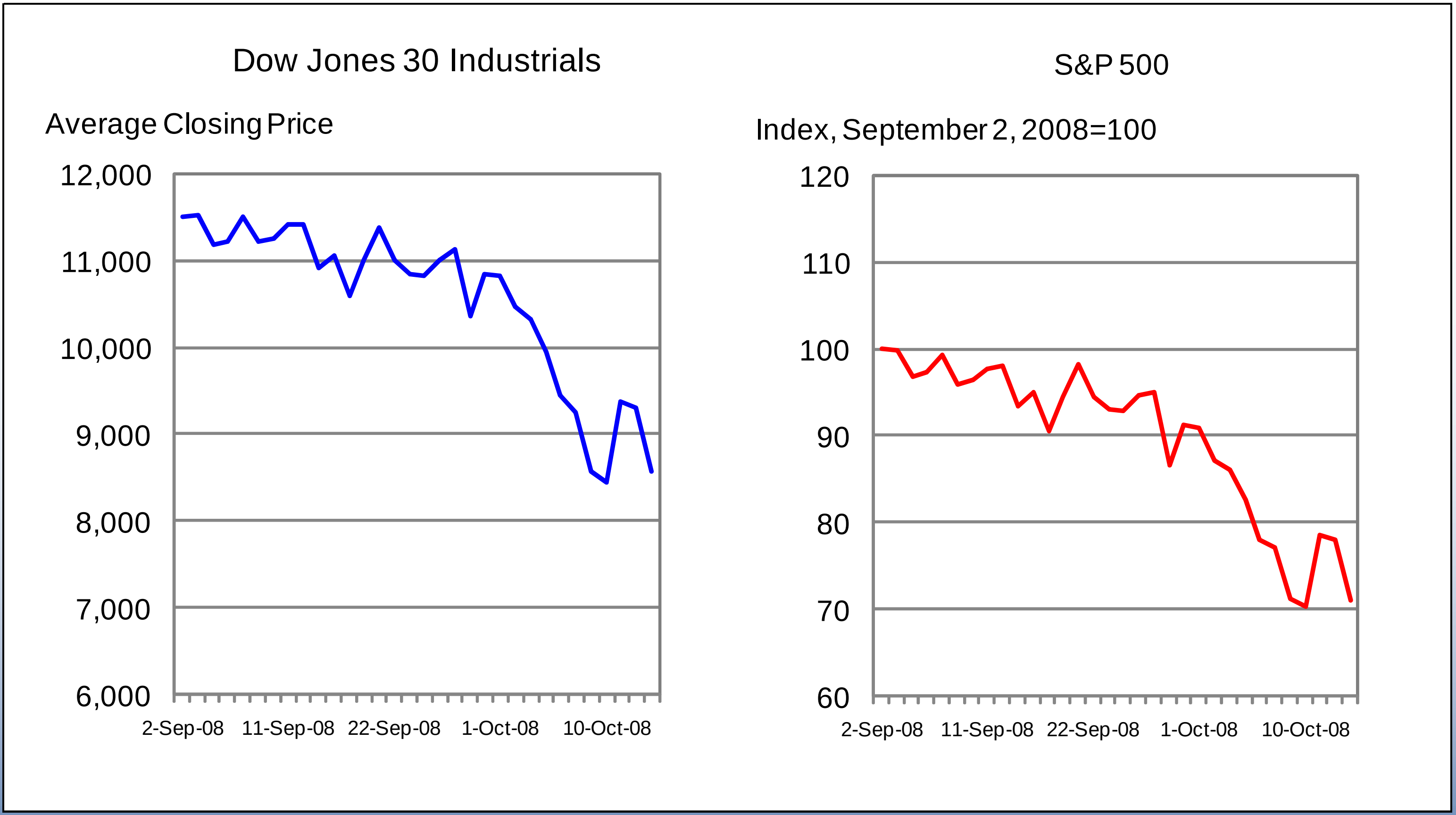


Figure 2
US Stock Market Indexes

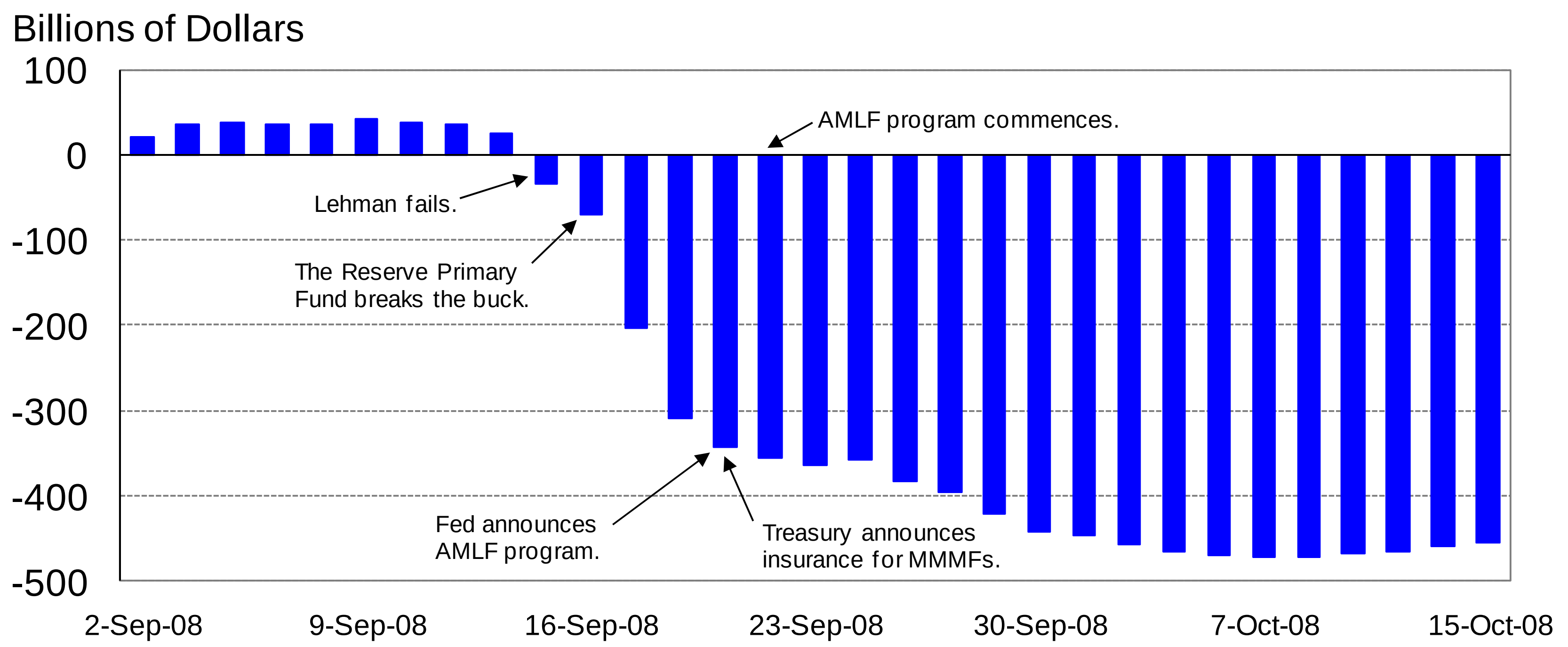
September 2, 2008 - October 15, 2008



Source: Dow Jones, New York Times / Haver Analytics

Figure 3
Cumulative Change in Money Market Fund Assets in Prime Funds

September 2, 2008 - October 15, 2008



Note: Prime funds include both retail and institutional funds.

Source: iMoneyNet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AIG, Lehman Shock Hits World Markets

Focus Moves to Fate of Giant Insurer After U.S. Allows Investment Bank to Fail; Barclays in Talks to Buy Core Lehman Unit

By Susanne Craig, Jeffrey McCracken, Jon Hilsenrath and Deborah Solomon

AIG Faces Cash Crisis As Stock Dives 61%


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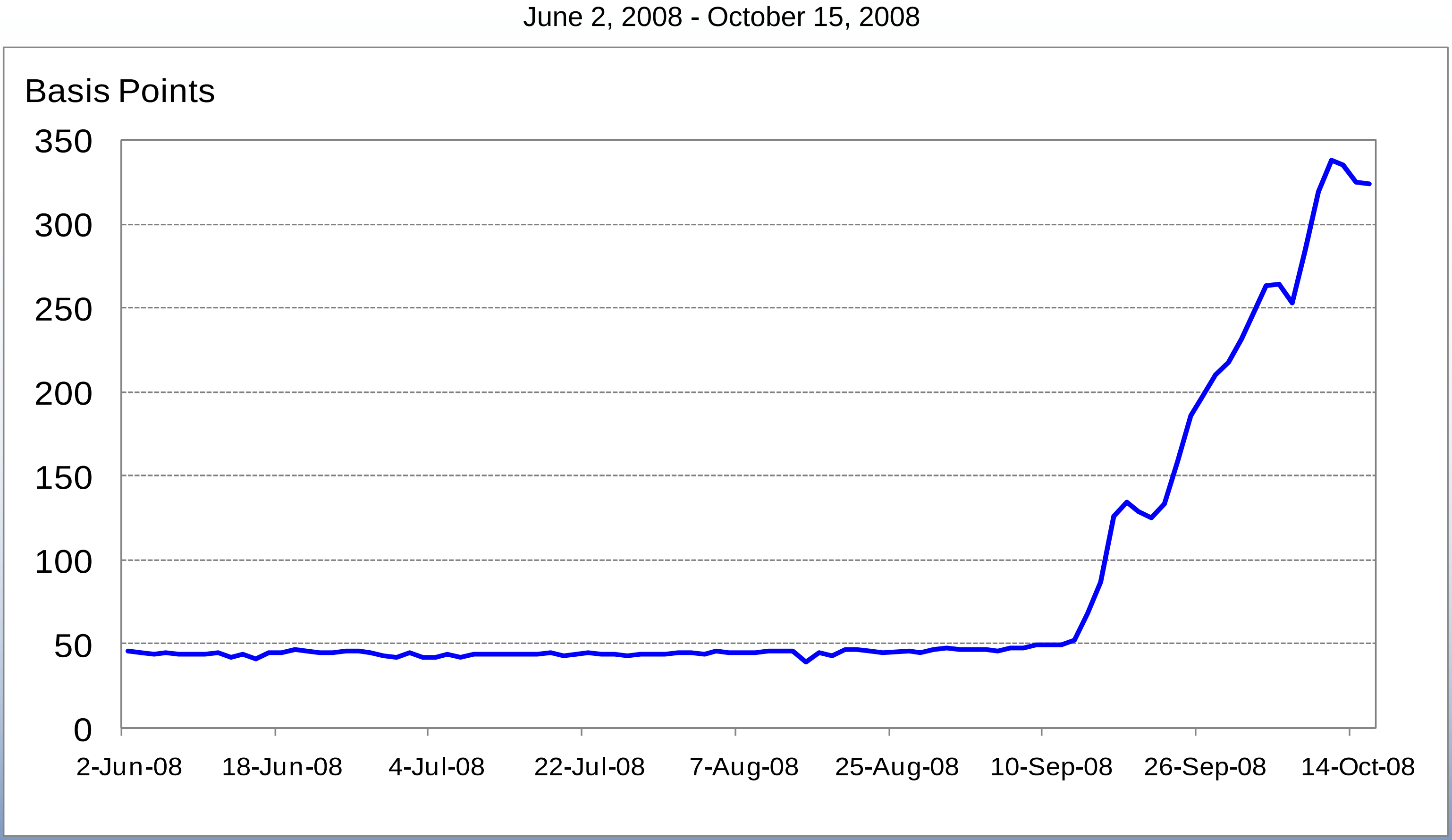
IN THIS SECTION, 6

WALL STREET REELS

ECONOMY ROCKED AS MORE GIANTS FALL IN BANKING SHAKEOUT

Fig. 4

Figure 5
Spread: One-Month London Interbank Offered Rate (LIBOR) to Overnight Index Swap (OIS) Rate



Source: Financial Times, Bloomberg / Haver Analytics

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THURSDAY, SEPTEMBER 18, 2008 - VOL. CCLII NO. 67

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Mounting Fears Shake World Markets As Banking Giants Rush to Raise Capital

By Tom Lauricella, Liz Rappaport And Annelena Lobb

Fear coursed through the U.S. financial system on Wednesday, as hope for a resolution to the year-old credit crisis faded.

Stocks tumbled, concern grew about which financial firm would fall next, and investors rushed to

Joseph Balestrino, a portfolio manager at Federated Investors. "It's just crazy."

A 449-point selloff took the Dow Jones Industrial Average to its lowest level in almost three years, leaving it 23% below where it stood a year ago. Volume on the New York Stock Exchange was the second highest in history, falling just shy of the

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By Aaron Lucchetti, Randall Smith And Jenny Strasburg

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Downward Dow

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Tuesday

Tuesday close 11,059.02

Monday

Wednesday

Monday close 10,917.51

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Volume CLXXIII No. 182

RESEARCH LIBRARY SEP 19 2008

AmericanBanker.com

Discount Window Shatters Record

AIG bailout adds $28B to tally; investment bank demand surges

Momentum Builds for

VOLUME 274 NUMBER 82

Suggested retail price 75 cents $1.00 outside of Greater Boston

The Boston Globe

BLUE REVIVAL

TODAY: Milder with lots of sunshine. High 66-71. Low 50-55.

TOMORROW: Sunshine mixed with clouds. High 73-78. Low 50-55.

HIGH TIDE: 3:16 a.m. 3:31 p.m.

SUNRISE: 6:30 SUNSET: 6:45

FULL REPORT: PAGE C12

SATURDAY, SEPTEMBER 20, 2008

RESEARCH LIBRARY SEP 22 2008 FEDERAL RESERVE BANK OF BOSTON

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- Treasury provides $50 billion in insurance protection for money market mutual funds
- Securities regulators impose a two-week ban on short-selling of stocks of 799 financial firms
- Government funding will allow Freddie Mac and Fannie Mae to buy new housing loans
- Bush, Congress developing broader plan this weekend to shore up banking firms

Rally, aftershocks end brutal week

Fig. 6

VOLUME 274 NUMBER 99

75 cents

The Boston Globe

TUESDAY, OCTOBER 7, 2008

BRISK OR FALLING

Worldwide worry

STEVEN SYRE

Boston Capital

Ominous signs in pullback by businesses

JAPAN

The Nikkei fell to its lowest close since February 2004.

Friday's close 10,938.14

Yesterday 10,473.09

GERMANY

Banking concerns sent the DAX Index plunging 7 percent.

5,797.03

5,387.01

BRITAIN

The FTSE had its biggest-ever one-day point drop.

4,980.25

4,589.19

RUSSIA

FRANCE

BRAZIL

Markets tumble amid doubts on US stability

By Robert Gavin

GLOBE STAFF

Waves of panic selling swamped stock markets around the world yesterday as a spreading crisis in confidence battered investors from Tokyo to Brazil

Lehman defense

Chief executive Richard Fuld told angry lawmakers the firm was hit by a "financial tsunami" before the bankruptcy filing. A8.

Disenchantment

BOSTON Herald

SOX VS RAYS

See Sports for full coverage of the ALCS

HORROR ON WALL ST.

CAPE COD TIMES

capecodONLINE.com

BOOT UP. PLUG IN. TALK ON.

BUSINESS B1

Sox beat Angels

SPORTS C1

TUESDAY, OCTOBER 7, 2008

75 cents

Financial shocks go global

U.S., foreign markets plunge on fears of worldwide recession

WHO'S IN CHARGE OF THE $700

KENNEBEC JOURNAL

Maine's Oldest Newspaper | Founded in 1825

kjonline.com

TUESDAY, OCTOBER 7, 2008

A BLETHEN MAINE NEWSPAPER | Copyright 2008

PANIC ENGULFS MARKETS

Trading chaotic worldwide; Dow drops below 10,000

LONDON (AP) — Stock markets slumped worldwide Monday, some marking record one-day drops, on fears the global financial crisis will worsen and hit the wider economy despite bank bailouts in the U.S. and Europe.

Stocks began their nosedive in Asia, where investors found little comfort from Washington's approval on Friday of a $700 billion bank rescue plan. Doubts over the degree to which the plan could help thaw frozen lending markets and recapitalize banks caused financial stocks to plummet and drag

Ange ouste by So

Jed Lowrie's n inning hit give Boston series

INTERVIEW

AUTHOR DETAILS RISE OF 'NEW KIDS'

EDGE, PAGE 40

BOSTON Herald

RAY FLYNN RECOVERS

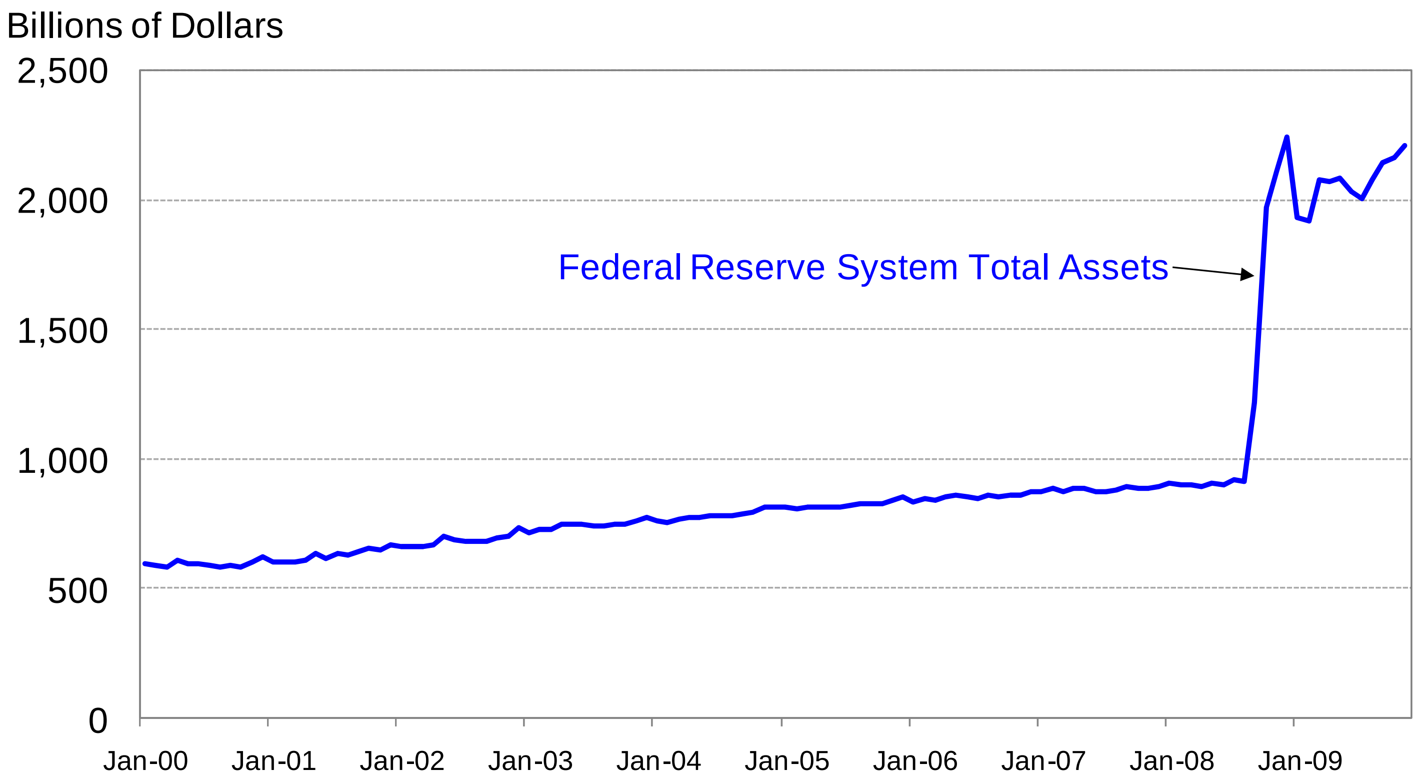
The former Hub mayor pours his heart out to our Peter Gelzinis. See Page 4.

$TRE$$ED OUT

Fig. 7

Figure 8
Federal Reserve System Assets

January 2000 - November 2009

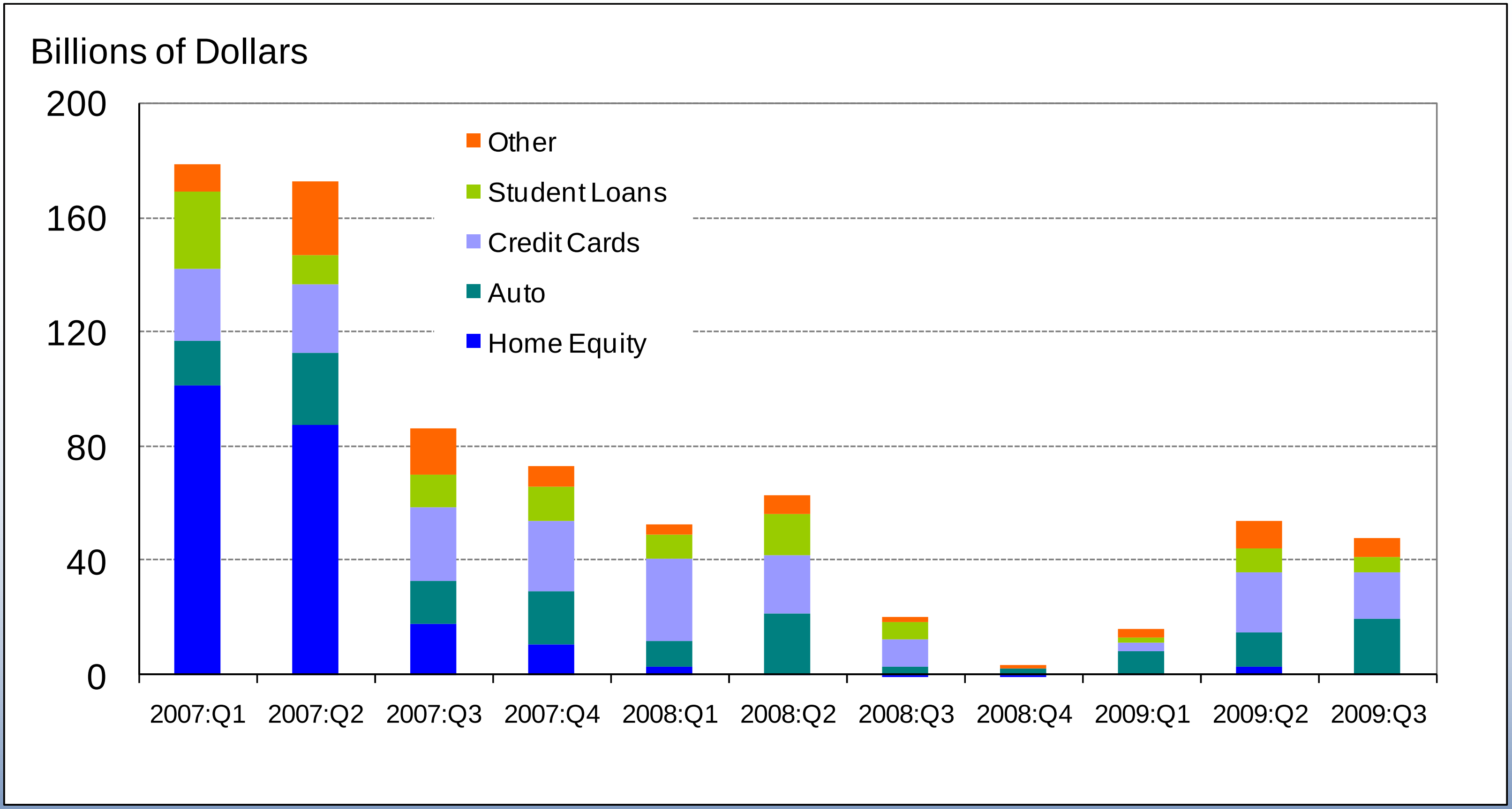


Note: Assets as of last Wednesday of each month.

Source: Federal Reserve Statistical Release H.4.1

Figure 9
Asset-Backed Securities Issuance by Type

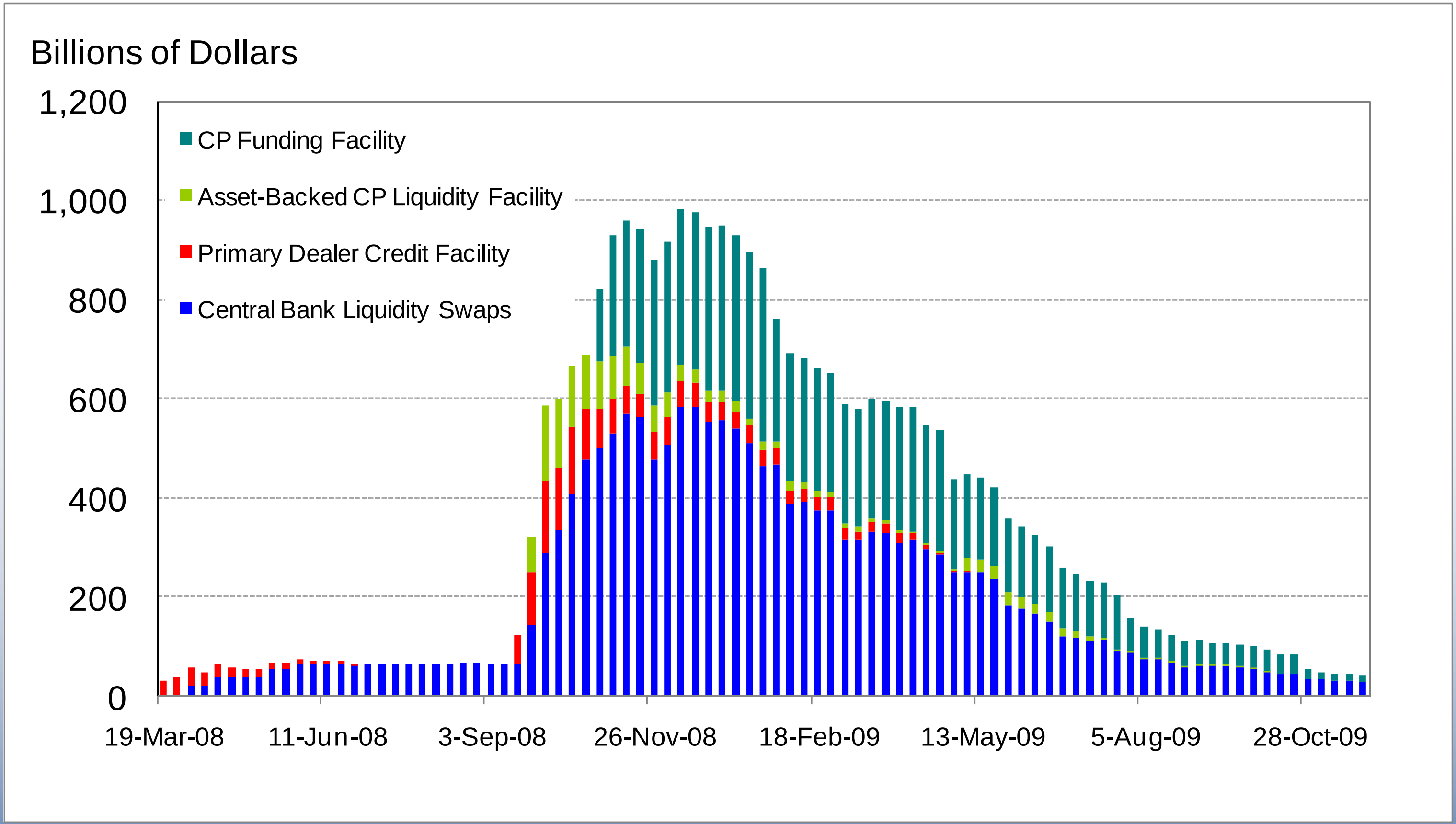
2007:Q1 - 2009:Q3



Source: SIFMA, Thomson Reuters

Figure 10
Federal Reserve System Assets: Selected Temporary Lending Facilities

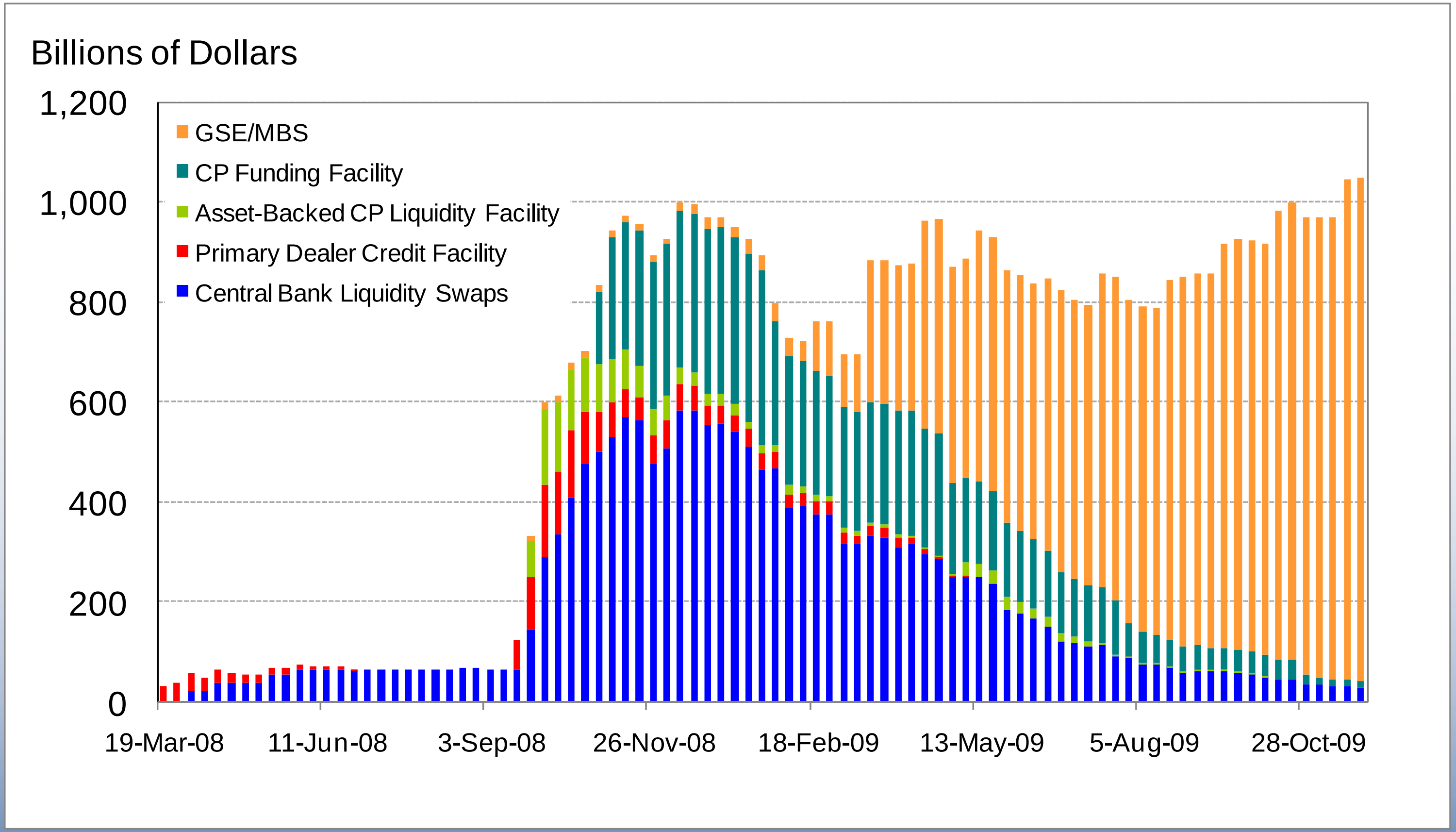
March 19, 2008 - November 25, 2009



Source: Federal Reserve Statistical Release H.4.1

Figure 11
Federal Reserve System Assets: Selected Temporary Operations

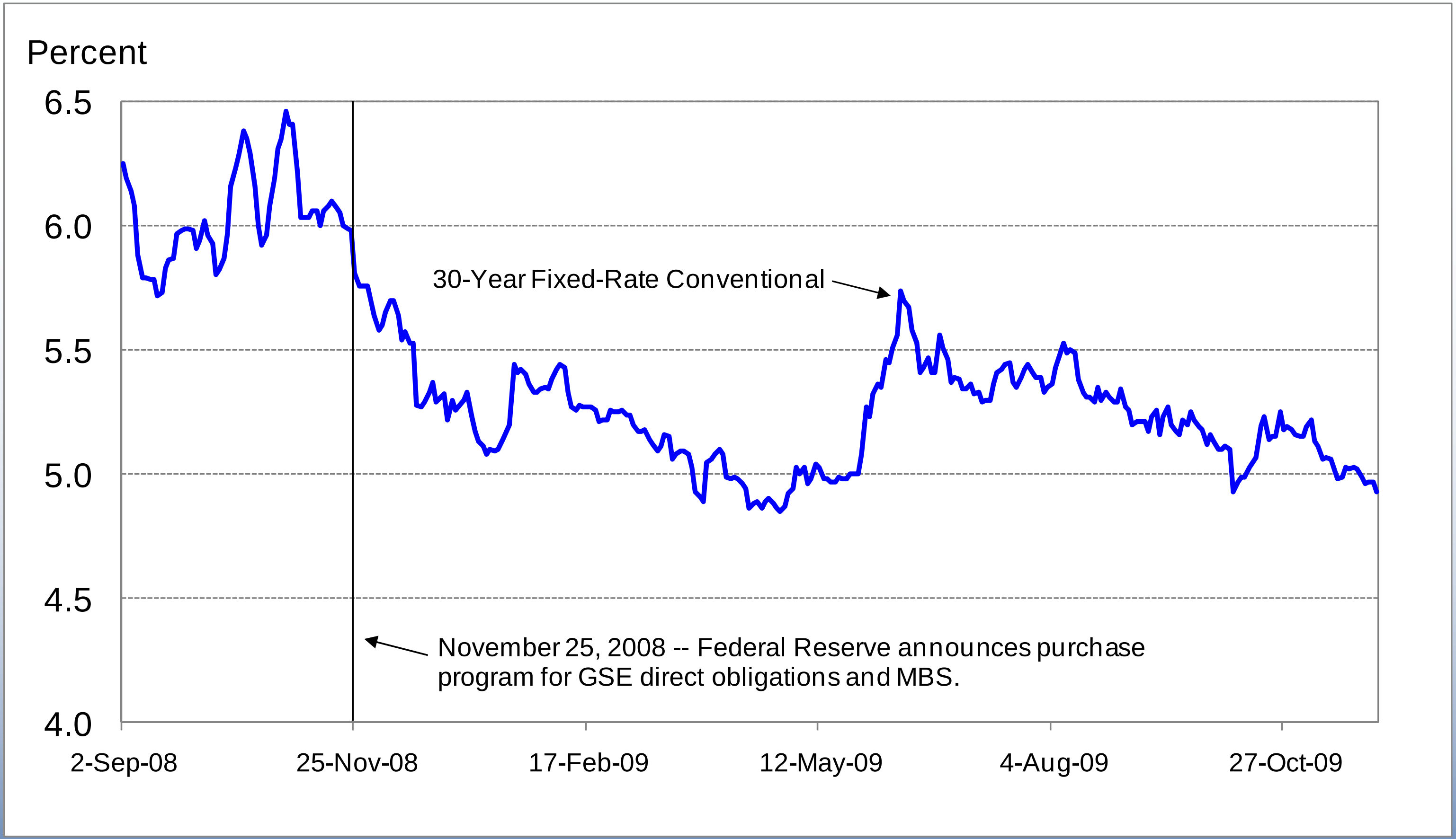
March 19, 2008 - November 25, 2009



Source: Federal Reserve Statistical Release H.4.1

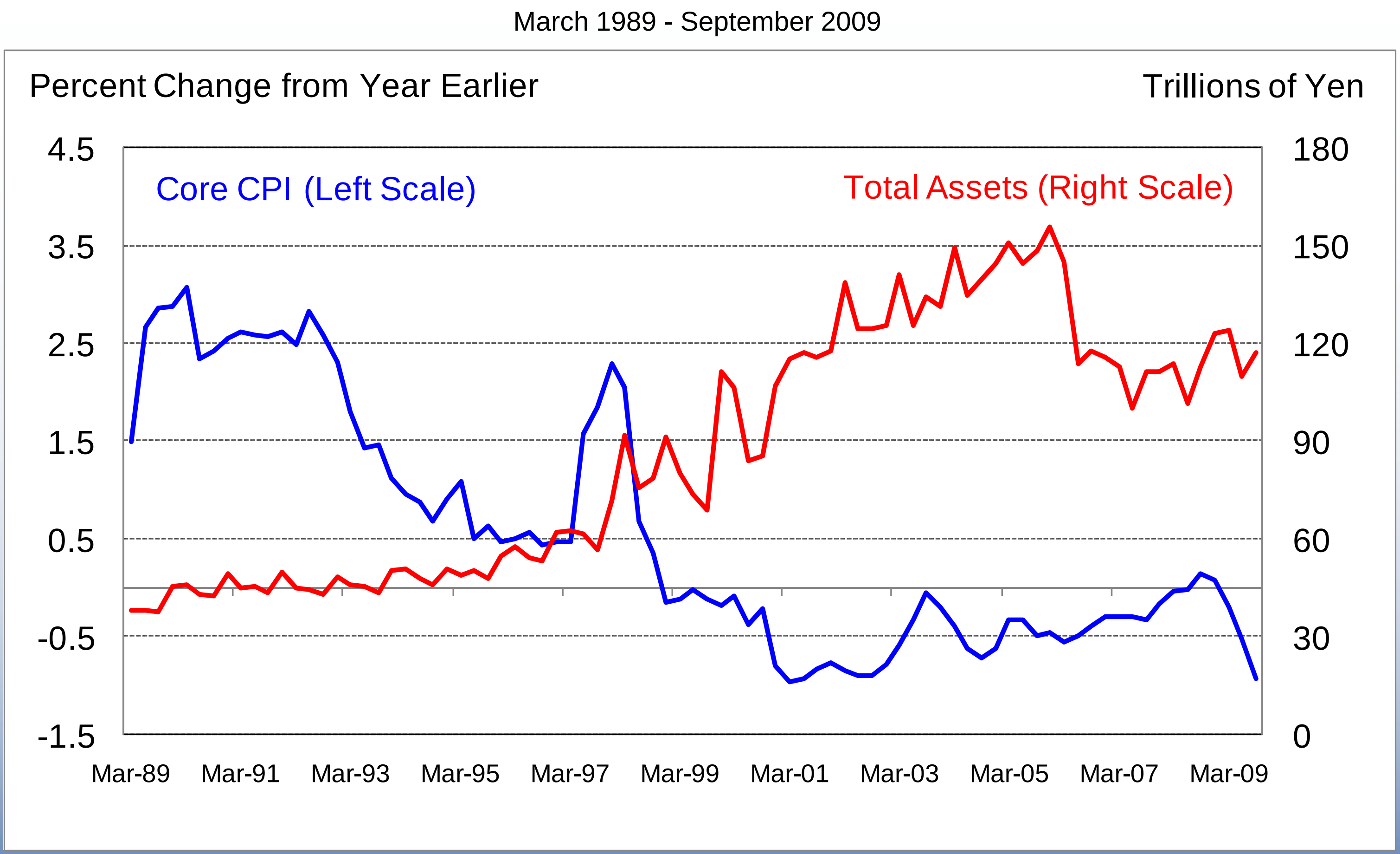
Figure 12
National Average Mortgage Rates

September 2, 2008 – November 30, 2009



Source: Bloomberg

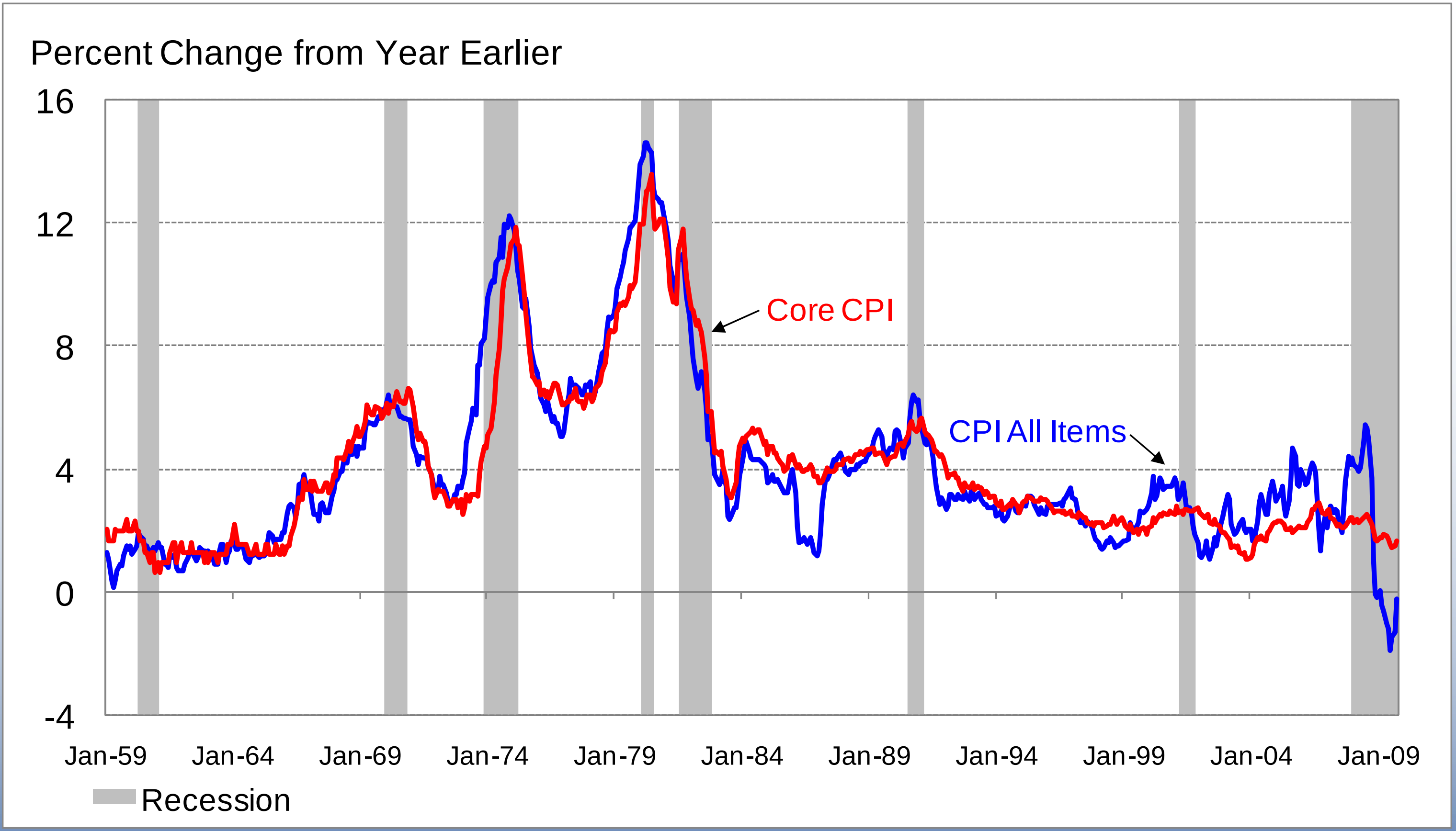
Figure 13
Japan: Core Consumer Price Index and Bank of Japan Total Assets



Source: Bank of Japan, Ministry of Internal Affairs and Communications / Haver Analytics

Figure 14
Inflation Rate: Core and All-Items Consumer Price Index

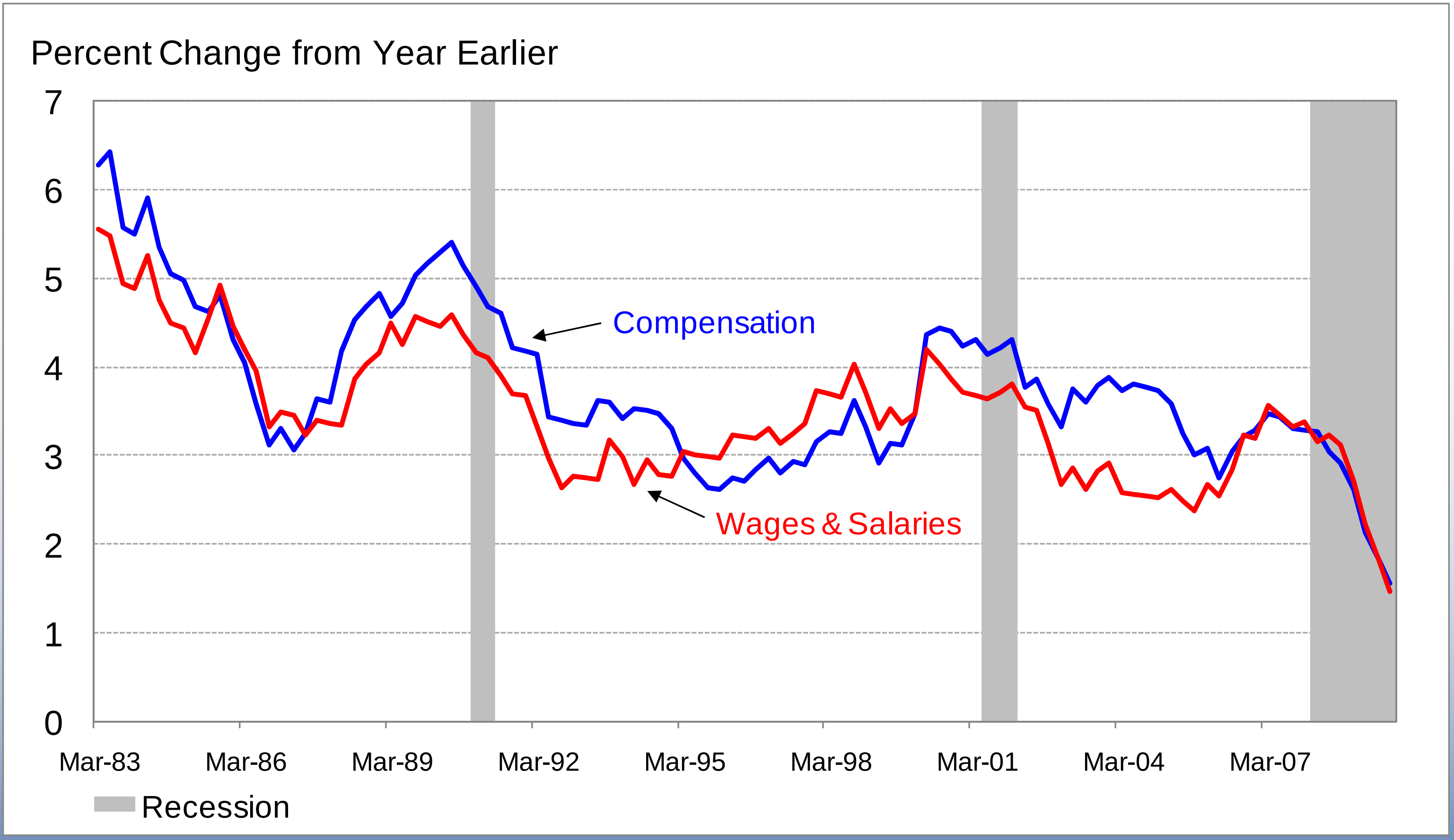
January 1959 - October 2009



Source: BLS / Haver Analytics

Figure 15
Employment Cost Indexes for Civilian Workers

March 1983 – September 2009



Source: BLS / Haver Analytics