Hetzel 10/17/08*

A General Critique of Monetary Policy

Milton Friedman said that the test of an institution is how well it does with poor leadership. A major reason why the Fed does poorly with poor leadership is the absence of institutional knowledge of its own history, that is, the absence of vigorous debate over which monetary policies in the past have worked and which have not. To engage in such debate, policymakers would have to accept the Lucas critique, which argues for thinking about policy as a set of systematic procedures for responding to the economy. They would then have to ask what is systematic about their behavior, how has that systematic behavior evolved over time, and what kinds of models predict the associated differing behavior of economic activity and inflation?

Chairman Bernanke has resurrected the conventional views of policymakers from the Depression. Without knowledge of Fed history, no one on the FOMC can challenge the lessons he has taken from the Depression. Moreover, no one can challenge the current departure from the Volcker-Greenspan policy procedures because these procedures have remained unarticulated.

Section I reviews the analytical distinctions that any policymaker concerned about transparent communication will make in public discussions of Fed policy. Section II makes the case that monetary policy is contractionary. Section III reviews the Fed's current reliance on its traditional view of the monetary transmission mechanism as influencing conditions in credit markets. Section IV provides an overview of recent developments in financial markets. Section V recommends that the FOMC adopt a target for growth in nominal expenditure with a bank reserves instrument. The first appendix summarizes lessons that policymakers should have learned from the Depression. The second appendix makes an argument for reviving the debate over the zero-lower bound problem that would arise if Fed

procedures pushed the funds rate to zero.

I. Three analytical distinctions required for thinking about monetary policy

Three analytical distinctions provide the necessary basis for useful debate of central bank actions. It is important to distinguish among liquidity policy, credit policy, and monetary policy. Liquidity policy concerns the increases in the monetary base desired by banks (in the form of deposits with the central bank) and the public (in the form of currency) during periods of heightened uncertainty in financial markets. Credit policy involves central bank allocation of credit through changes in the composition of its asset portfolio. Monetary policy concerns the way in which the central bank uses its ability to control monetary base growth to determine aggregate nominal expenditure and inflation. It is important to critique central bank actions keeping these distinctions in mind. Since last summer, Fed actions have concentrated on liquidity and credit policy not monetary policy.

With respect to liquidity policy, central banks have accommodated the increased demand for the monetary base simply as a consequence of maintaining a target for the federal funds rate. Given an increased reluctance of banks to lend in the interbank market, banks that would have relied upon such borrowing to make up reserve deficiencies produced by reserve outflows have begun to hold large amounts of excess reserves. Unfortunately, the language used in newspapers to characterize the reserve creation required to meet this demand obscures the fact that there are no implications for monetary policy, that is, for the impact of reserve creation on aggregate nominal expenditure. Misleadingly, newspapers talk about "flooding" the market with reserves, "pumping" reserves into markets, reserve "injections," and so on. However, such reserve creation simply accommodates additional demand without increasing the supply of reserves relative to demand. Only the latter reserve creation stimulates bank asset acquisition and money creation.[1] When combined with contractionary monetary policy, this confusion creates an impression among the public of the impotence of

monetary policy and correspondingly creates a demand for fiscal and regulatory policy interventions to stimulate aggregate demand.

Credit policy involves changes in the composition of the Fed's asset portfolio undertaken in an attempt to allocate credit extension among particular issuers. Given the funds rate target, the market not the Fed determines the aggregate dollar amount of credit that banks extend. The panoply of programs set up by the Fed does not affect this aggregate amount but rather offsets the influence of the capital position of banks as a determinant of which banks extend credit. That is, the Fed uses the composition of its own balance sheet to offset the market's punishment of undercapitalized firms to the detriment of relatively well-capitalized firms.[2] At least through fall 2008, the Fed has concentrated on the allocation of credit as opposed to the overall extension of credit.

A useful analogy for understanding the Fed's credit policies is sterilized foreign exchange intervention. In the context of an unchanged funds rate, consider Fed purchases of dollars with Eurodollars in the foreign exchange market to prevent dollar depreciation. To prevent an increase in the funds rate, the Fed must then buy Treasury securities to offset the resulting decrease in the dollar reserves of banks. The result is to leave investors with more Eurodollar-denominated assets relative to dollar-denominated assets while interest rates and the monetary base remain unchanged. Experience shows that such sterilized foreign exchange intervention exercises only a transitory influence on the dollar exchange rate. It is effective only if it signals a future increase in the funds rate.

Similarly, Fed programs like TAF change the composition of the Fed's asset portfolio without increasing its size. The Fed is substituting the IOUs of the government (Treasury debt) for private debt (the IOUs of financial and nonfinancial institutions) in portfolio. In effect, the Fed is attempting to undo the deleveraging of the financial system in which the market directs credit away from highly leveraged financial institutions with illiquid, opaque

asset portfolios and toward financial institutions that have been more conservatively managed. The problem comes if market forces overwhelm the Fed's attempt to undo this deleveraging. The Fed then appears powerless even though nothing in its actions is conducive to stimulative monetary policy. Indeed, despite the increase in bank reserves and currency due to increased liquidity demand and despite the portfolio redistribution with the public in which the Fed trades its government IOUs for private IOUs, monetary policy is at present contractionary.

II. Monetary policy is contractionary

Measured either by the slow growth rate of the monetary and credit aggregates or by the departure from the systematic procedures that broadly characterized the Volcker-Greenspan era, monetary policy in the United States has been contractionary since early summer 2008.[3] No amount of liquidity provision or credit allocation will stimulate the economy until monetary policy stops being contractionary.

As in the Depression, policymakers instinctively fear "low" short-term interest rates. The FOMC lowered the funds rate to 2% on April 30, but then despite steady deterioration in the economic outlook left it unchanged until the 50 basis point reduction on October 8. The Fed effectively tightened monetary policy in June by pushing up the expected path of the Fed funds rate through hawkish statements. Chairman Bernanke (6/9/08) stated that the FOMC "will strongly resist" increases in expected inflation, and Governors Kohn and Mishkin then reiterated that sentiment. Bernanke (6/3/08, 3-4) stated:

> Inflation has remained high, largely reflecting continued sharp increases in the prices of globally traded commodities. Thus far, the pass-through of higher raw materials costs to domestic labor costs and the prices of most other products has been limited, in part because of softening domestic demand. However, the continuation of this pattern is not guaranteed and will bear close attention…. The possibility that commodity prices will continue to rise is an important risks to the inflation forecast. Another significant upside risk to inflation is that high headline inflation, if sustained, might lead the public to expect higher long-term inflation rates, an expectation that could ultimately become self-confirming…. We are attentive to the implications of

changes in the value of the dollar for inflation and inflation expectations….

In May, Fed funds futures had been predicting a basically unchanged funds rate for the remainder of 2008. However, by June 18, Fed funds futures markets were predicting a funds rate of 2.5% for November 2008.

The Fed was not alone in encouraging the expectation of higher rates. The *Financial Times* (7/1/08) in a story with the headlines, "BIS calls for world interest rate rises," reported:

> Malcolm Knight, outgoing general manager, and William White, outgoing chief economist, concluded in the report: "It is not fanciful, surely, to suggest that these low levels of interest rates might inadvertently have encouraged imprudent borrowing, as well as the eventual resurgence of inflation."

William McChesney Martin (FOMC chairman from 1951 until 1970) invented the policy procedures later resuscitated by Chairmen Volcker and Greenspan and that have defined modern central banking (Hetzel 2008). As encapsulated in his characterization of policy as "lean against the wind" (LAW), the Fed lowers the funds rate in a measured, persistent way in response to sustained decreases in resource utilization rates, and conversely for sustained increases in resource utilization rates. Martin disciplined the resulting period-by-period funds rate changes through a nominal anchor created by maintenance of the expectation of price stability read from the behavior of bond rates. Chairmen Burns and Miller retained LAW, but imparted procyclical inertia to funds rate changes in an attempt to control unemployment, and they destroyed the nominal anchor they inherited by allowing inflation to drift upward over the business cycle. Volcker re-created the Martin LAW with credibility procedures albeit with a nominal anchor in the form of the expectation of low, steady inflation rather than price stability. In doing so, he removed the procyclical bias of monetary policy characterized as "stop-go."

LAW is a search procedure for discovering the natural interest rate (the real interest rate consistent with the operation of the real economy with completely flexible prices). A hallmark of these procedures under Volcker and Greenspan has been the absence of any

attempt to judge the degree of stimulus of monetary policy based on the level of the real funds rate. For example, the Fed raised the funds rate in 1983 and 1984 when the real funds rate was at historically high levels. An implicit implication of the recent abandonment of these procedures has been the belief that policymakers possess the knowledge of the structure of the economy necessary to associate the level of the real funds rate with the impact of monetary policy on nominal expenditure.

The absence of a funds rate reduction between April 30 and October 8 despite steady deterioration in economic activity and stability and then moderation in inflation expectations read from nominal-TIPS yields represents a contractionary departure from LAW with credibility. If a "low" nominal and real funds rate represented expansionary monetary policy, one would have expected acceleration in bank credit and money growth. This acceleration would have been associated with portfolio rebalancing that would have raised prices of illiquid assets like equity and houses. Also, the intensification of economic weakness for 2008Q3, visible with the payroll employment report of October 3, is compatible with prior monetary restriction not with the intensification of financial market stress starting September 15.[4]

The US economy weakened steadily throughout 2008. Positive real GDP growth in 2008Q2 initially appeared reassuring, but the 2.8% real growth was more than accounted for by an unsustainable increase in net exports, which added 2.9 percentage points to GDP growth ("final" figures available end of September). By mid-July, it had become apparent that the temporary fillip to consumer expenditure offered by the tax rebate had run its course. Retail sales numbers for June, released July 15, increased only .1%. *USA Today* (7/16/08) ran a front-page headline, "Signs of a growing crisis: 'Relentless flow' of bad economic news suggests there's no easy way out." The steady weakening in economic activity appeared in payroll employment, which stopped growing in December 2007 and then turned consistently

negative. The unemployment rate rose steadily from 4.7% in November 2007 to 6.1% in September 2008.

The below trend growth in real GDP consistent with a sustained decrease in resource utilization appears in Figure 1, which plots annualized, three-month growth rates of payroll employment utilizing contemporaneously available numbers. Macroeconomic Advisers (10/6/08, 1), managed by former Fed governor Laurence Meyer, forecast below-trend growth for 2008Q3 from May onward (consistently below 2% and near zero starting in October). It forecast below 1% growth for 2008Q4 starting in August and -1% starting in October. Macroeconomic Advisers was among the most optimistic of forecasters. The consensus forecasts reported in *Blue-Chip Financial Forecasts* (2008) on July 1, 2008 for 2008Q3 and 2008Q4, respectively, were 1.2% and .9%. On August 1, they were 1% and .3%. Figures 2 and 3, which plot measures of inflation expectations utilizing the data from nominal-TIPS yields, show the absence of increased inflationary expectations in financial markets. With a weakening economy and stable and then declining expectations of inflation, what accounted for the more than five-month hiatus in lowering the funds rate between April 30 and October 8?

III. The credit view

Part of the answer to the preceding question must lie in the Fed's reversion to its traditional view of monetary policy in which the central bank affects spending through its influence on financial intermediation.[5] The chairman understands monetary policy in this conventional way, that is, in terms of the way that the Fed influences financial intermediation through its influence on the cost of credit. The cost of credit depends both upon the cost of funds to banks, which the Fed controls through the funds rate, and upon how risk premia and credit rationing affect how this cost translates into the interest rates faced by borrowers. Based on his belief that the severity of the Depression derived from the breakdown of

financial intermediation, Bernanke's distinctive emphasis has been on use of the composition of the Fed's balance sheet to influence which financial institutions extend credit. Programs like TAF work to undo the restriction of credit by institutions with impaired capital due to losses on subprime and Alt-A mortgage relative to better capitalized institutions. Figure 4 shows how the Fed has rearranged its portfolio over the last year.

From the perspective of this credit view, the Fed's intervention in credit markets has eased monetary policy through countering restrictive credit market conditions. Richard Fisher (2008), president of the Dallas Fed, expressed this emphasis on credit market conditions in his discussion of the September FOMC meeting:

> [T]he problem was clearly not the Fed funds rate target. A rate cut was not, and is not, the cure for an economy where many banks cannot expand their balance sheets, or must shrink their balance sheets, because of capital constraints…. I felt, as others at the table did, that holding the Fed funds rate steady at 2% was the right thing to do while our colleagues at the New York Fed and at the Treasury turned to dealing with the risk of AIG and other choke points in the markets.

James Bullard (2008), president of the St. Louis Fed, commented:

> I don't think lowering rates is the right tool for this environment…. [Y]ou're in the middle of this much volatility… [Y]ou lower rates. I don't think it has very much effect…. [O]ur policy right now is very accommodative. [Y]ou go to a low rate, you stay there, and you use other tools to address the problem. I think that is a very reasonable way to think about the current situation.

Frederic Mishkin (2008a) expressed the credit view:

> [T]he real interest rates on federal funds and Treasury bills are very low. But we are in the throes of major financial disruption that has led to a slowing economy and a substantial widening of credit spreads, so the interest rates that businesses and households must pay to finance their purchases are not low at all.

IV. An overview of financial markets

I take the Penn Central crisis of June 1970 as the template for how financial markets should work during times of extreme stress. During this episode, the nonfinancial commercial paper market dried up and corporations used their bank lines of credit to borrow. The Fed accommodated that borrowing through encouraging increased discount window borrowing. After the September 15 filing by Lehman for bankruptcy, the banking system

again fulfilled this function.

Figures 5 through 16 from the weekly St. Louis Fed publication *U.S. Financial Data* offer an overview of recent developments in money markets. Figure 5 shows the monetary base (adjusted for the distribution of reserves among banks with different reserve requirements). Of course, the September jump is striking. For the two-week reserve-settlement period ending September 10, reserves of depository institutions were $44.2 billion. For at the period ending October 8, reserves jumped to $179.5 billion (Table 2, Board of Governors statistical release H.3). (Because payment of interest on reserves began with the reserve maintenance period starting October 9, the jump must reflect the reintermediation through the banking system and away from money markets that occurred after the Lehman bankruptcy.) However, the steadiness of the adjusted monetary base displayed in Figure 5 until September is also striking.

This steadiness does not support the common newspaper characterization of financial markets before mid-September as displaying a "classic bank run," which given the Fed's funds rate target would appear as an increase in the monetary base. Although Figure 6 shows currency increasing by $20 billion between May and October 2008, there is no way of knowing how much of this increased demand reflects demand for dollars held abroad. For the week ending September 8, currency was $776 .9 billion, and, on September 29, only moderately higher at $783.7 billion. Moreover, the data do not reveal a failure in the interbank market for lending of US banks. In September 2007, the interbank loans consisting of Fed funds and RPs of US commercial banks amounted to $315.1 billion. In September 2008, that figure had risen to $387.9 billion. Interbank lending remained basically unchanged between the weeks ending September 10 and October 1 (Board of Governors statistical release H.8).[6]

After the Lehman bankruptcy on September 15, increased intermediation through

commercial banks offset disintermediation in the money market. Between the weeks ending September 8 and September 29, commercial bank demand deposits rose from $305.9 billion to $401.6 billion. This flight to banks reflected additional business demand as NOW accounts rose only from $312.3 billion to $319.3 billion (Board of Governors statistical release H.6). As shown in Figure 7, the Fed accommodated the associated increased demand for reserves through increased reserves provision from discount window lending. However, newspaper accounts exaggerated the extent to which the commercial paper market closed down.

Figure 8 displays the commercial paper outstanding of nonfinancial companies. The month-end data from the Board of Governors release on outstanding commercial paper reveals that nonfinancial commercial paper fell only by $8.7 billion from end-August to end-September (from $195.5 to $186.8 billion). Figure 9 shows a decline in asset-backed commercial paper, but the decline appears part of the longer run moderate decline that has persisted in all of 2008. According to the Board's H.15 statistical release, the interest rate on nonfinancial commercial paper rose from 2.04% on September 12 to 2.52% on September 16, but by September 19 it had fallen back to 2.16%. Newspaper commentary about the closing down of the commercial paper market appears to reflect both the market's preference for overnight as opposed to term lending and the increase in risk spreads. On October 15, the AA nonfinancial commercial paper rate was 1.65% on 30-day paper and 1.02% on 1-day paper. The respective 30-day and 1-day spreads of A2/P2 nonfinancial paper over AA nonfinancial paper were 4.4 percentage points and 3.8 percentage points, respectively (Board of Governors statistical release Commercial Paper). As shown in Figure 10, after the Lehman bankruptcy and after a large money fund "broke the buck," institutional investors but not individuals withdrew funds from money market funds. Corporations then turned to banks for funding. Figure 11 shows that banks have continued to fund themselves successfully by

issuing small time deposits.

For macroeconomic stability, the first-order effects of credit derive from aggregate credit extension rather than from the distribution of lending by individual banks. Figure 12 illustrates how the particular credit program, the TAF (Treasury Auction Facility), left the total of Reserve Bank credit (the asset side of the Fed's balance sheet) unchanged. As a result of its funds rate target, the Fed sold treasury securities from its portfolio to sterilize the increases in reserves resulting from the TAF auctions. Not until the recent reintermediation of credit through the banking system did Reserve Bank credit increase. However, that increase does not reflect purposeful expansion of credit to stimulate economic activity but rather the liquidity demand associated with disintermediation from the money market and reintermediation into the bank credit market.

Figure 14 shows the overall absence of growth and bank credit at commercial banks from the end of March until mid-September. Figure 15 shows the moderation in growth in commercial and industrial loans from March 2008 until mid-September 2008. In Figure 16, this behavior of bank credit appears in the lack of M2 growth between March and mid-September. Again, the spike in bank credit and in M2 in mid-September reflects the increased demand for liquidity and the reintermediation through the banking system rather than any purposeful action by the Fed to stimulate economic activity.

V. The central bank as creator of money

After the ¼ point funds rate reduction on April 30, the FOMC at least temporarily suspended its LAW procedures, which would have resulted in reductions in the funds rate in the summer. The FOMC has returned to an earlier understanding of monetary policy in terms of influencing credit market conditions and the allocation of credit. To make up for lost ground in lowering the funds rate, the FOMC could immediately reduce the funds rate by a significant amount, say, one percentage point (to .5%). However, once the economy enters

into recession LAW procedures work less well because the ability of these procedures to cause the real funds rate to track the natural rate declines as the latter falls sharply. Also, given the current low level of short-term rates and the extraordinary amount of uncertainty in financial markets, there is a significant probability that the Fed could run into the zero-lower-bound problem, in which the real funds rate required to stimulate aggregate demand would necessitate a funds rate less than zero.

A better alternative than lowering the funds rate would be for the Fed to adopt the monetarist principles lacking in its Depression policy. As illustrated by Friedman and Schwartz (1963), the Fed failed to maintain money and credit growth in the Depression. Monetarist principles, now incorporated into standard macroeconomic models, endow the central bank with control over nominal variables: nominal expenditure and inflation. As illustrated by the two recoveries in the Depression (with NBER cyclical troughs of March 1933 and June 1938), nominal and real expenditure grew strongly when money and bank credit grew strongly. In the Depression, when the Fed sat on the sidelines and allowed gold inflows to stimulate money and credit growth, the economy grew strongly. The counterpart for today would be for the Fed to abandon a funds rate target and to target nominal output growth using bank reserves as its instrument and bank credit and money as indicator variables (see McCallum 1987, 1988, and 1990). As inflation falls with the fall in energy and commodity prices, nominal expenditure growth will translate into strong real growth. Let the market allocate the increase in bank credit among banks. Money growth will induce the portfolio rebalancing by the public that will increase the price of relatively illiquid assets like stocks and houses.

In the Depression, the Fed appeared like a helpless giant and monetary policy appeared impotent. Just as at present, the political system turned to a wide variety of programs to restart financial intermediation. That interference with credit markets had long-

run baleful consequences. Rather than repeating that experience, the Fed should now learn from its failures in the Depression.

In 1934, Irving Fisher reported an earlier conversation in which he urged Gov. Strong to support a bill of Rep. Strong mandating that the Fed stabilize the price level (Hetzel 2008, 8):

> In talking with him [Gov. Strong], he said, "Don't compel me to do what I am doing. Let me alone and I will try to do it. If I am required by law to do it, I don't know whether I can, and I will resign. I will not take the responsibility." I said to him, "I would trust you to do it without a legislative mandate, but you will not live forever, and when you die I fear this will die with you." He said, "No, it will not."

Governor Strong died in 1928 as did any sense of responsibility within the Fed for maintaining the price level.

There is a natural reluctance for leaders to accept clear responsibility for fear of discrediting their institution in the event of failure. However, there is now a crisis of confidence and a need for leadership. The Fed can provide that leadership by clearly committing to a target for nominal expenditure growth and to whatever credit and money creation is needed to achieve that target.

Appendix: Learning the Lessons of the Depression

The economic illiteracy of the press appears in comments about lessons learned from the Depression. Consider the contradiction in the following citation:

> Boston University economic historian Robert Margo says Bernanke is now doing what he believes should have been done early in the Great Depression…. In a nutshell, that means doing everything possible to end the *credit crunch*…. This strategy was developed over decades by Milton Friedman, Bernanke and other economists. "There's still debate over what caused the Depression. But there's consensus over what should have been done," Margo says…. He [Bernanke] blamed the Depression's severity and length on poorly managed *money supply* worldwide. [italics added]

The Fed has focused on "the credit crunch" not the "money supply." With a funds rate target, the central bank forgoes management of the money supply and bank credit. Just as in the Depression, the Fed has not make the leap required to implement the monetarist strategy of Milton Friedman of controlling money and credit through control of the monetary base to control nominal expenditure. Fed policy makers have instead re-created the policy ethos of the Depression motivated by the belief that a dysfunctional financial system was prolonging economic contraction. Ex-Fed Governor Mishkin (2008b) expressed this interpretation of the Depression:

> In late 1930…a rolling series of bank panics began. Investments made by the banks were going bad…. Hundreds of banks eventually closed. Once a town's bank shut its doors, all the knowledge accumulated by the bank officers effectively disappeared…. Credit dried up…. And that's when the economy collapses.

In the Depression, policymakers believed that monetary policy was expansionary because interest rates were low. They drew the conclusion that monetary policy was impotent and, as a result, they concentrated their efforts on dealing with perceived dysfunction in financial intermediation. The Hoover administration created the Reconstruction Finance Corporation to recapitalize banks. The Roosevelt administration created numerous additional government entities to revive credit intermediation, for example,

Fannie Mae, the Federal Housing Administration, the Federal Homeland Bank System, and the Farm Credit Administration. Many states adopted laws preventing foreclosure of homes and farms.

Even a cursory overview of the Depression conflicts with this view.[7] The US economy began an extremely vigorous recovery after the March 1933 NBER business cycle trough just as the Roosevelt Administration closed down large numbers of banks with the Bank Holiday. This wholesale destruction of bank capital is inconsistent with the ensuing vigorous economic expansion.[8] With the establishment of deposit insurance in January 1934, banks ceased failing. The credit view then also has nothing to say about the second recession (NBER cyclical peak May 1937) and recovery, which together with the first economic contraction and recovery constituted the Great Depression. Just as important a lesson is the connection between the two vigorous economic recoveries during the Depression and the strong growth in the monetary base that occurred when the Fed abandoned control of interest rates and ceased sterilizing gold inflows.

The events leading to the Great Depression began when the Fed started raising interest rates in 1928 in order to bring down the value of the New York Stock Exchange. The Fed's free-reserves procedures set money market rates as the sum of the discount rate and a markup over the discount rate that varied positively with the amount of discount window borrowing. Despite the worsening recession, the Fed kept market rates at a level high enough to prevent reemergence of what it considered to be stock market speculation. It also wanted to maintain control of bank lending for the time when the economy and bank credit would revive and monetary policy could again become active. That meant maintaining positive discount window borrowing, which together with a positive discount rate meant keeping the interest rate relatively elevated. The monetary contraction that led initially to recession became depression when a self-reinforcing cycle set in of deflation, expected deflation, the

transformation of positive nominal rates into high real rates, and monetary contraction.

Contractionary monetary policy manifested itself in the contraction of the money stock. Contraction in the money stock in turn appeared in the failure of small banks as depositors withdrew their funds and redeposited them in larger banks. Although banks had to fail, not until early 1933 was there talk of panic as gold fled the country out of fear that Roosevelt would abandon the gold standard. One often hears in the popular press that policymakers have learned the lesson of the Depression. In fact, policymakers have re-created the policy ethos of the Depression, in which policy focused not on monetary policy, incorrectly assumed impotent because of the low level of money market interest rates, but rather on recapitalizing the banking system through Hoover's Reconstruction Finance Corporation.

Two events ended the first of the two recessions that defined the Great Depression. First, with the final wave of bank failures in the winter of 1933, banks began to accumulate excess reserves as a source of funds alternative to borrowing from the discount window. Fear of "inflationist" legislation in Congress checked sentiment within the Fed for open market sales to absorb the excess reserves. When banks had accumulated sufficient excess reserves, they no longer required access to the discount window to meet their marginal reserve needs and the Fed's free-reserves procedures no longer determined market rates. The Fed then basically withdrew as a central bank and confined itself to maintaining the size of its government securities holdings at a fixed level. With the Fed sidelined, the monetary base became exogenous.

Second, Roosevelt's attempt to raise the domestic price level by raising commodity prices initiated an expansionary monetary policy by stimulating growth of the monetary base. Gold purchases along with the prohibition on the export of gold increased wholesale prices and replaced the expectation of deflation with inflation. Positive real interest rates became

negative. Dollar devaluation in early 1934 combined with political unrest in Europe to create gold inflows that augmented the monetary base and money. The economy then grew vigorously until 1937.

In 1936 and 1937, the Fed acted on its desire to again control market interest rates to prevent speculation. Through a series of increases in required reserves, the Fed reduced banks' excess reserves with the intention of forcing them into the discount window and thus reviving its free-reserves procedures for controlling market interest rates. As banks attempted to offset their desired holdings of excess reserves, the money stock stopped growing and recession replaced recovery. The Fed's intent was only to resurrect its former free-reserves procedures so that when the demand for bank credit revived banks would have to obtain additional reserves from the discount window. Market rates would then rise and prevent a revival of the speculation that had supposedly caused an unsustainable bubble in stock prices in 1928.

When economic contraction returned in 1938, a chastened Fed once more withdrew as an active central bank by freezing its holdings of government securities. Monetary base growth continued with gold inflows and money growth resumed. With renewed recession in 1938, deflation and expected deflation returned. However, without an interest rate peg, expected deflation was stimulative not contractionary. Because monetary velocity was approximately constant, rapid money growth translated into rapid growth in aggregate nominal demand. With actual and expected deflation, growth in nominal demand appeared as growth in real output.

Appendix: Deflation and the Zero-Lower Bound Problem

Japanese deflation after 1998 revived concern for deflation within the Fed. Unfortunately, the Fed accepted the conventional credit-view that a dysfunctional financial system wounded by bad assets propagated a wealth shock in the form of a deflating real estate bubble. I have argued elsewhere that deflationary monetary policy produced the Japanese deflation of the 1990s (Hetzel 2003, 2004). (An explanation for the reduction in trend real growth is still lacking although an inability of the banking system to allocate capital efficient is probably part of the answer.)

The common misinterpretation of the sources of deflation in the Great Depression and in the more recent Japanese experience provides a warning about how central bank monetary policy could become deflationary. During its own recent encounter with a fear of deflation, the FOMC failed to deal satisfactorily with the issue of the zero-lower-bound problem. In 2003, rather than consider seriously a policy of pushing the funds rate to zero and then adopting the monetary basis as its policy instrument, the FOMC concentrated on policy pronouncements intended to bend down the yield curve without a reduction in the funds rate, then at 1%.

One can imagine now a moderately contractionary monetary policy becoming severely contractionary. With sharp reductions in headline inflation due to declines in energy and commodity prices combined with ongoing world-wide recession, financial markets could again anticipate deflation as they did in late 1998. An unwillingness to move the funds rate below 1% could exacerbate the misalignment between the real funds rate and the natural rate. Just as it did in the Depression, policy makers could interpret deflation and recession as confirmation of their credit views. A revived discussion of inflation targeting is necessary in the context of dealing with the zero-lower-bound problem and the radical departure in policy represented by management of the monetary base rather than the funds rate. Below, I

reproduce some of the Lucas-critique arguments I made in my August 5 (Hetzel, 7/31/08) memo relevant to the issue of characterizing monetary policy as a set of consistent procedures rather than a chaining of individual funds rate changes each of which is chosen as optimal in light of contemporary economic conditions.

> Disturbingly, indicators point to continued weakness rather than a rebound. The much hoped-for rebound continues to recede well into the future. As I indicated above, the regional information also points to a downward trend rather than temporary weakness. Not only is the Fifth District composite diffusion index for manufacturing in July well into negative territory, but also the 6-month-ahead expectation of manufacturing shipments and orders is, for the first time in 15 years, also negative. What has kept the economy out of recession has been the 1.1% annualized growth in consumption over the last three quarters. However, the most recent quarterly number of 1.5% was transitorily pushed up by the rebates. For all the reasons that everyone knows, consumption could well decline over the remainder of the year. Those reasons include both falling wealth due to a lackluster stock market and declining house prices plus declines in real disposable personal income due to a weak labor market and an inflation rate racing ahead of nominal wage growth.
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> [T]he temptation now is to muddle through. That is, keep the funds rate unchanged while hoping for a lucky break in oil prices that will reinvigorate financial markets and lower headline inflation. A more prudent course would be to plan ahead for the possibility that economic activity will continue to decline while inflation remains unacceptably high. It is true that the current real funds rate is somewhat negative measured by realized inflation. However, we do not know that the next funds rate move will be upward. Given the uncertainty in the economic outlook as well as the near-term pessimism about the economy, short-term real interest rates could still be too high and the next funds rate move could be down. How should the FOMC communicate in this environment?
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> The move toward transparency represented by more explicit forecasting has gone as far as possible. The next move must be toward more explicitness about the consistency in our procedures for making policy. We need to think of how to communicate more transparently….
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> The Richmond Fed should renew the arguments it make in spring 2003 for the

usefulness of an explicit inflation target in dealing with deflation and the zero-lower-bound problem. Chairman Bernanke will need to deal with the FOMC's ambivalence about an inflation target. In a speech delivered June 9, 2008 (p. 2) he stated, "The Federal Open Market Committee will strongly resist an erosion of longer-term inflation expectations, as an unanchoring of those expectations would be destabilizing for growth as well as for inflation."

However, Bernanke (6/9/08, 5) also said:

> It would be useful for policymakers to know more about how inflation expectations are influenced by monetary policy actions, monetary policy communication, and other economic developments such as oil price shocks. In a traditional model with rational expectations, a fixed economic structure, and stable policy objectives, there is no role for learning by the public. In such a model, there is generally a unique long-run equilibrium inflation rate which is fully anticipated; in particular, the public makes no inferences based on central bankers' words or deeds. But in fact, the public has only incomplete information about both the economy and policymakers' objectives, which themselves may change over time.

Governor Kohn (6/11/08, p. 4) reinforced the chairman's message while avoiding the obvious inference about the usefulness of an explicit inflation target:

> [I]t is very important to ensure that policy actions anchor inflation expectations. This anchoring is critical: As demonstrated by historical experiences around the world and in the United States during the 1970s and 1980s, efforts to bring inflation and inflation expectations back to desirable levels after they have risen appreciably involve costly and undesirable changes in resource utilization.

An explicit inflation target will assuage public concern that a zero or near-zero funds rate accompanied by robust expansion of the Fed's balance sheet will not lead to a long-term revival of inflation. Symmetrically, it will also assuage concern that world-wide recession might lead to world-wide deflation, thereby raising the real value of even a zero funds rate.

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*To my non-Fed friends who receive a copy of this memo, please do not cite without my permission. Need I add that these views are my own rather than those of the Federal Reserve Bank of Richmond?

[1] The same unfortunate confusion occurred with the increase in excess reserves in the Japanese banking system in the 1990s (Hetzel 2004).

[2] Credit policy is fiscal policy in that it involves off-budget transfers among financial institutions.

[3] The ECB has focused on higher wage settlements in Germany, Italy and the Netherlands (*Financial Times* 6/14-15/08) and in July 2008 raised the interbank rate to 4.25%. In the ECB, year-over-year M1 growth is zero and M3 growth has declined from a peak of 12% in late 2007 to 8.8% in August. In the UK, the Bank of England kept the bank rate at 5% through the summer, unchanged after a quarter-point reduction on April 10. In a coordinated move with the Fed, these banks lowered their bank rates by 50 basis points on October 8. The Bank of Japan, however, because of its focus on reestablishing a "normal" interbank rate, refused to join the move and left its interbank rate it .5%, unchanged from February 2007. In Japan, the level of M1 has declined since January 2008.

[4] Macroeconomic Advisers (10/7/08, 1) , which views monetary policy through the perspective of credit markets rather than money creation, took a similar position:

> Over the period that ended in April, the FOMC strategy was to ease aggressively in order to offset the tightening of financial conditions arising from wider credit spreads, more stringent lending standards, and falling equity prices. We said that the FOMC was "running to stand still," in that those actions did not create accommodative financial conditions but were needed to keep them from becoming significantly tighter. Since the last easing, however, the FOMC has abandoned that strategy. Financial conditions have arguably tightened more severely since April than during the earlier period, and yet there has been no policy offset. This pattern has contributed importantly to the severe weakening of the economic outlook in our forecast.

[5] Macroeconomic Advisers (10/7/08, 3) wrote:

> By abandoning its "offset" approach [of lowering the funds rate in response to tightening conditions in financial markets], the Federal Reserve has allowed financial conditions to tighten substantially…. Another reason why the Fed abandoned its approach is that it has focused primarily on expanding its liquidity policies in recent months. The FOMC believes that liquidity policies are more effective tools for providing assistance to market functioning…. But even if one accepts (as we do) that liquidity tools are better suited for helping market functioning, monetary policy still has to react to changes in the outlook.

[6] For European banks, many of which have a high proportion of wholesale deposits relative to consumer deposits and which have illiquid, opaque asset portfolios, interbank lending has dried up.

[7] I hope that economists will read Chapter 3 on the Great Depression in my book (Hetzel

2008). As an imperfect substitute, below, I offer a summary of the chapter.

[8] Friedman and Schwartz (1963, Table 16, 438) list "Losses to Depositors per $100 of Deposits Adjusted in All Commercial Banks." In 1930, 1931, and 1932, the numbers are .6%, 1.0%, and .6%. For 1933, the year in which cyclical recovery began, the number jumped to 2.2%. For 1937, the year of the second cyclical peak in the Depression, the number is zero.

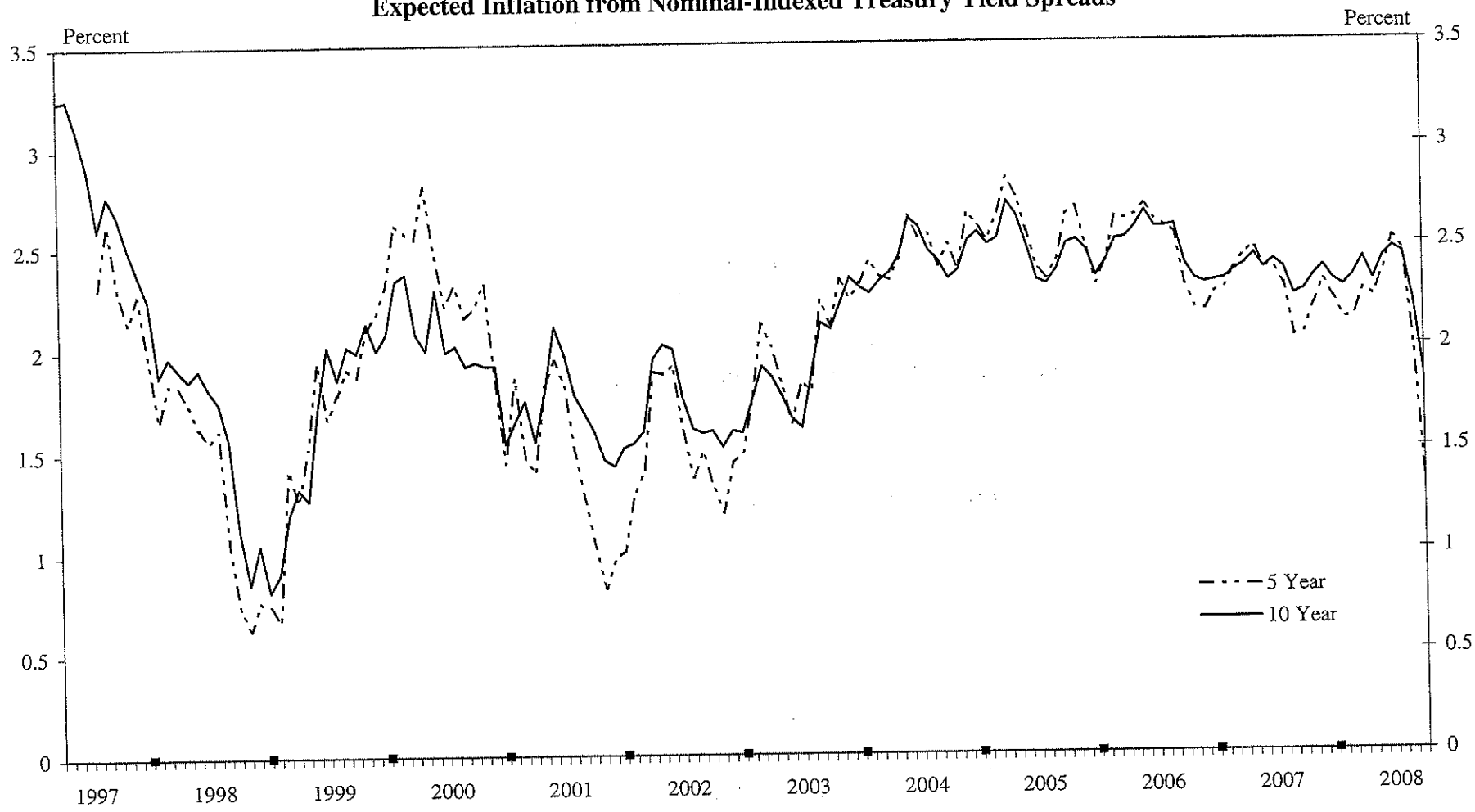
Figure 1

Contemporaneously Available 3-Month Growth Rate of Payroll Employment

Notes: Observations are annualized 3-month growth rates of total employees on nonagricultural payrolls (Establishment Survey) taken from the original releases from the BLS. Heavy tick marks indicate last month of year.

Figure 2

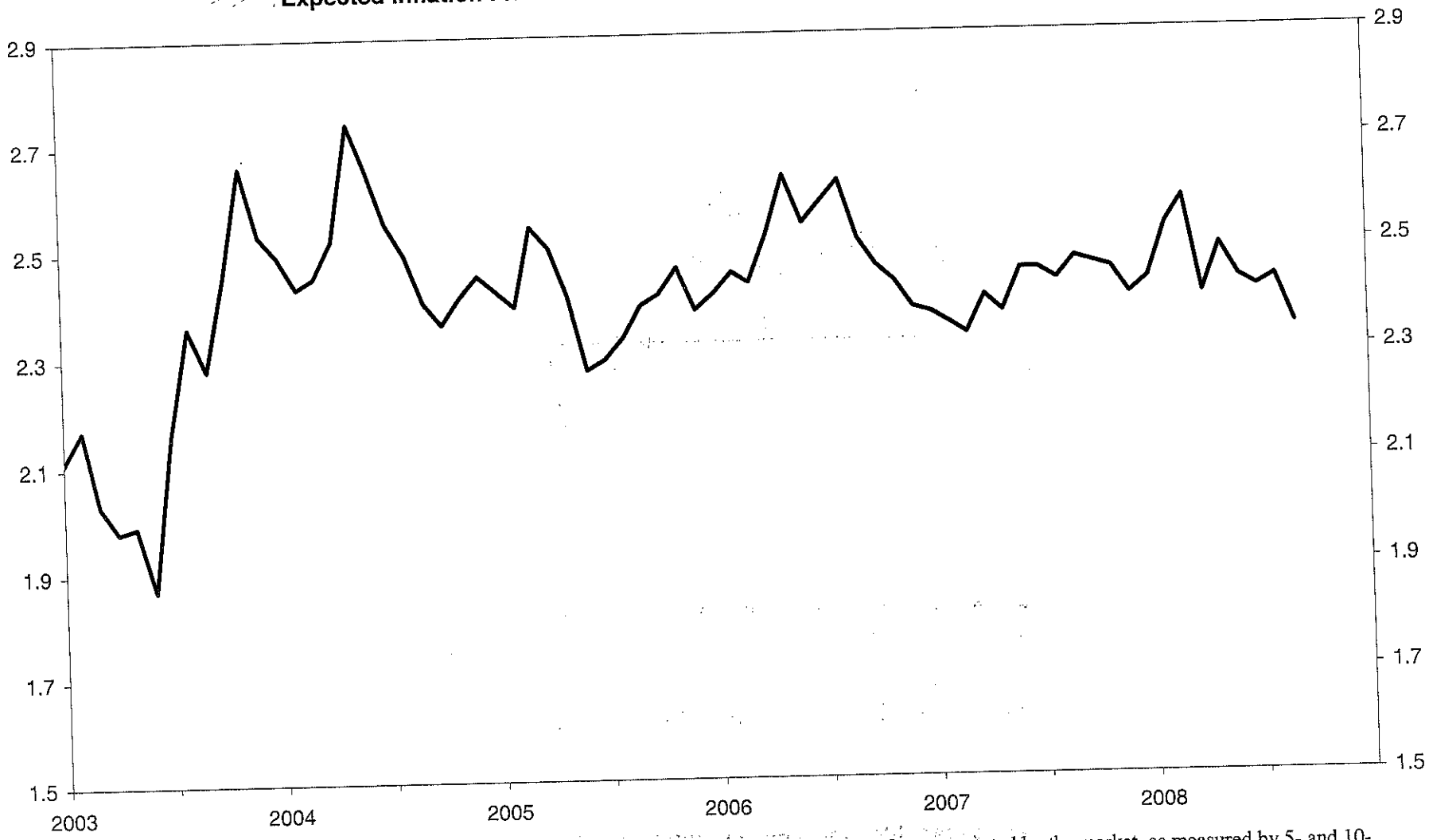
Expected Inflation from Nominal-Indexed Treasury Yield Spreads



Notes: Yield spreads are the difference between the yields on nominal and inflation-indexed securities of similar maturity. Data are monthly averages of daily data. Source: Haver Analytics.

Figure 3

Expected Inflation Five Years Forward from Nominal-Indexed Treasury Yield Spreads



Note: The implied five-year forward inflation rate is the average inflation rate 6-10 years in the future expected by the market, as measured by 5- and 10-year TIPS yields. Source: Haver Analytics

Figure 4

Factors Affecting Reserve Balances of Depository Institutions

Dollars in billions; weekly averages of daily figures; data to October 8, 2008.

[From Federal Reserve H.4.1 release, October 9, 2008]

Category	10/8/2008	8/7/2007
US Treasuries held outright	476.6	790.8
Federal agency securiites held outright	14.3	0
Repurchase agreements	81.1	18.6
Term Auction Facility credit	149	0
Other loans [discount window and other]	420.2	0.3
Bear Stearns/Maiden Lane LLC	29.5	0
Foreign exchange swaps	284	0
Other Fed assets[buildings, equipment, etc]	41	41.8
Total Reserve Bank credit	1,494.70	850.6
Off-balance sheet items:		
Securities loans to dealers	211.3	3.5
Overnight facility	20	3.5
Term facility	191.3	0
Reserve balances with Reserve Banks	119.7	5.4

created by Walker Todd

Figure 5

Adjusted Monetary Base

Averages of Daily Figures, Seasonally Adjusted

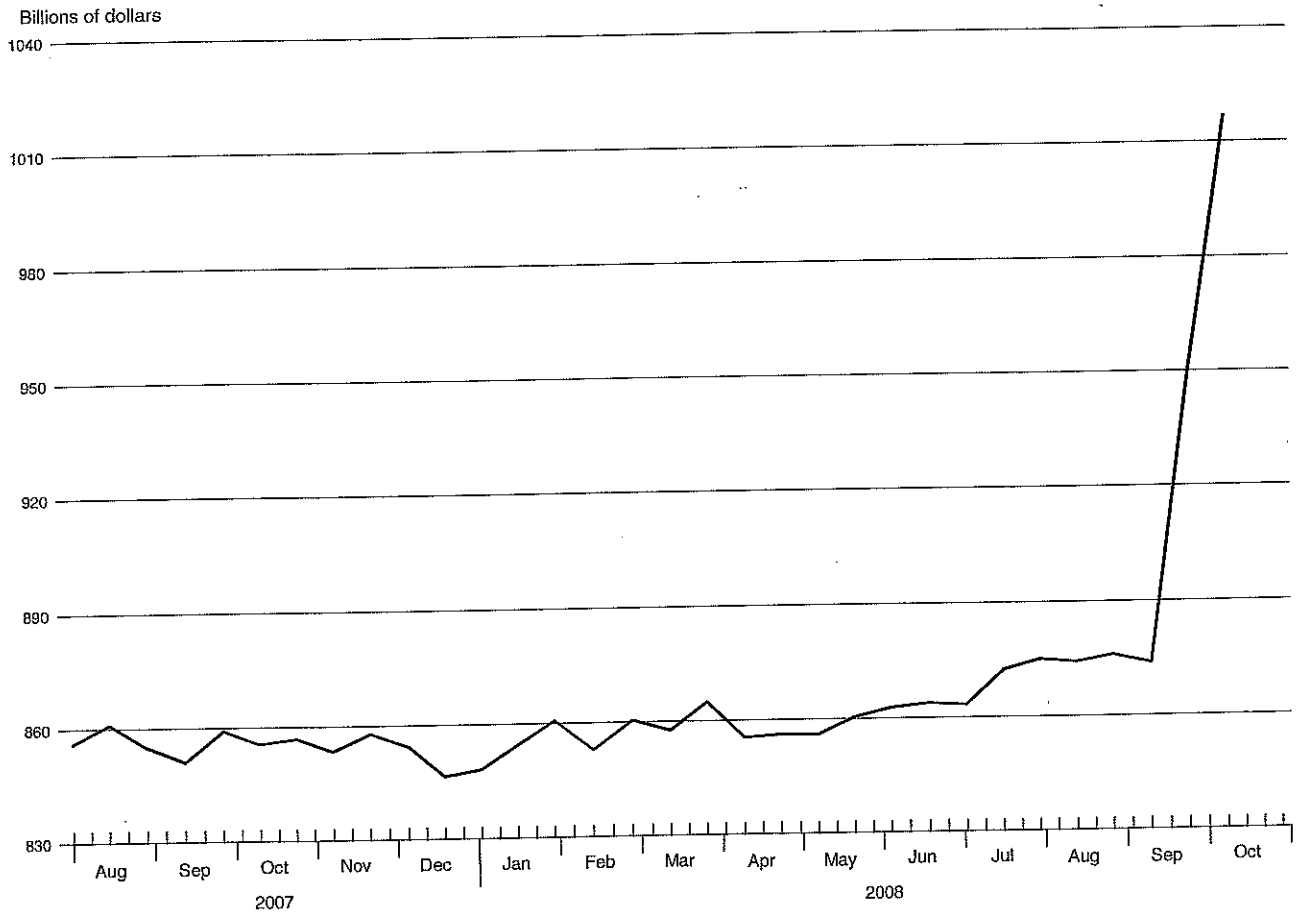


Figure 6

Currency Component of M1

Averages of Daily Figures, Seasonally Adjusted

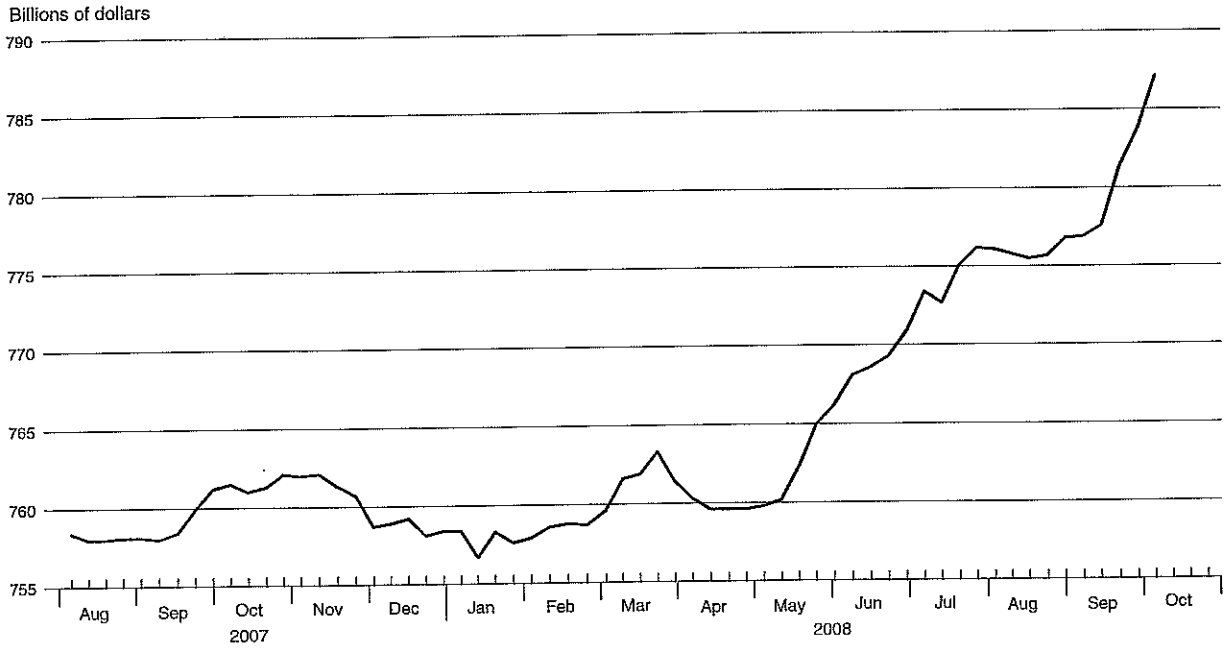
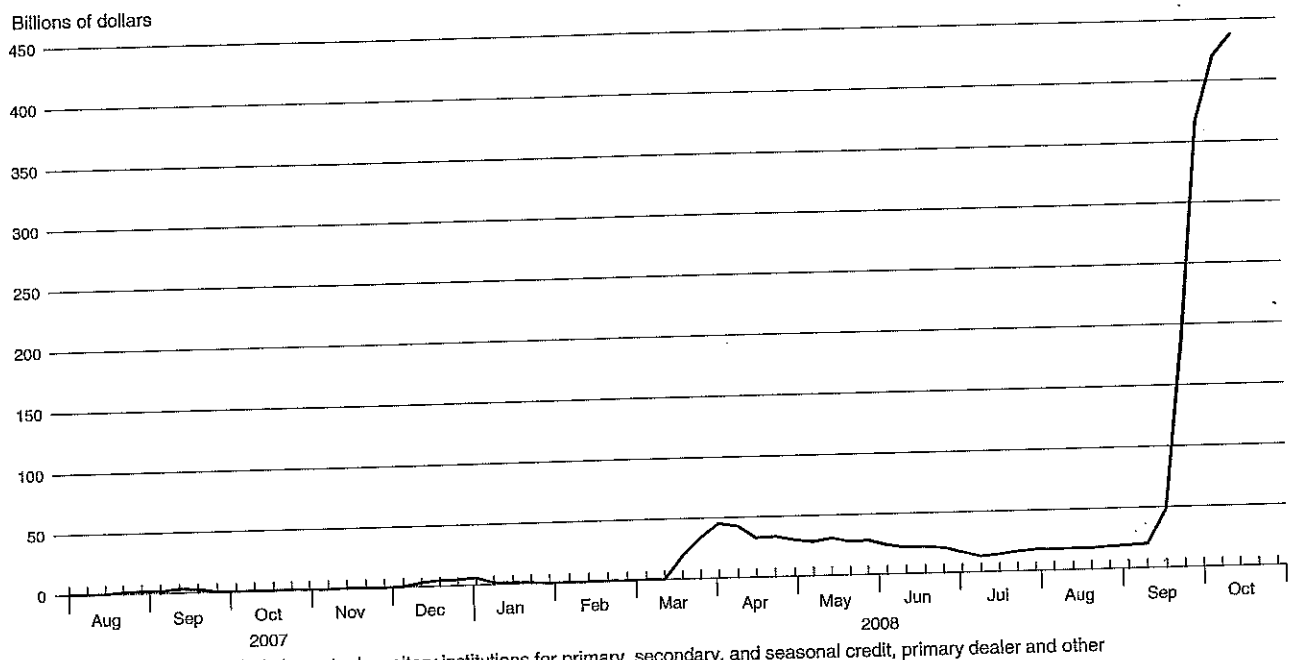


Figure 7

Total Borrowings from Federal Reserve Banks

Averages of Daily Figures



Note: Total borrowings include loans to depository institutions for primary, secondary, and seasonal credit, primary dealer and other broker-dealer credit, asset-backed commercial paper money market mutual fund liquidity facility, and other credit extensions, but exclude term auction credit.

Figure 8

Commercial Paper of Nonfinancial Companies

Seasonally Adjusted

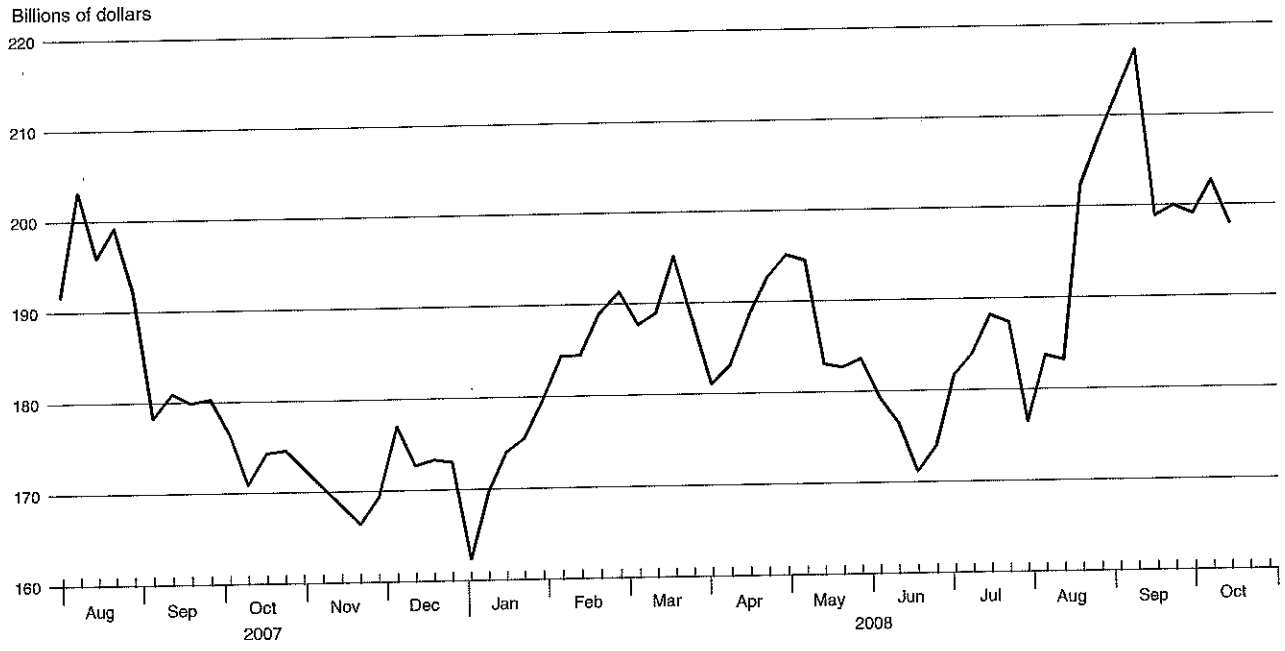


Figure 9

Commercial Paper: Financial and Asset-Backed

Seasonally Adjusted

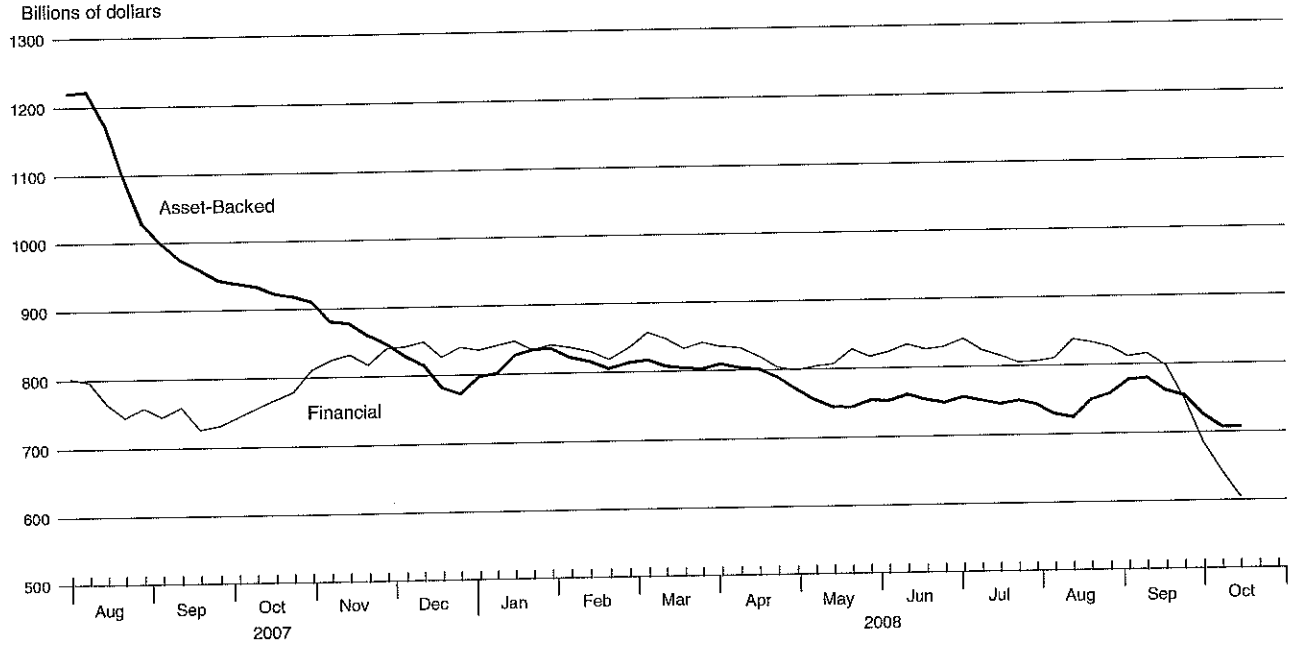


Figure 10

Institutional and Retail Money Funds

Averages of Daily Figures, Seasonally Adjusted

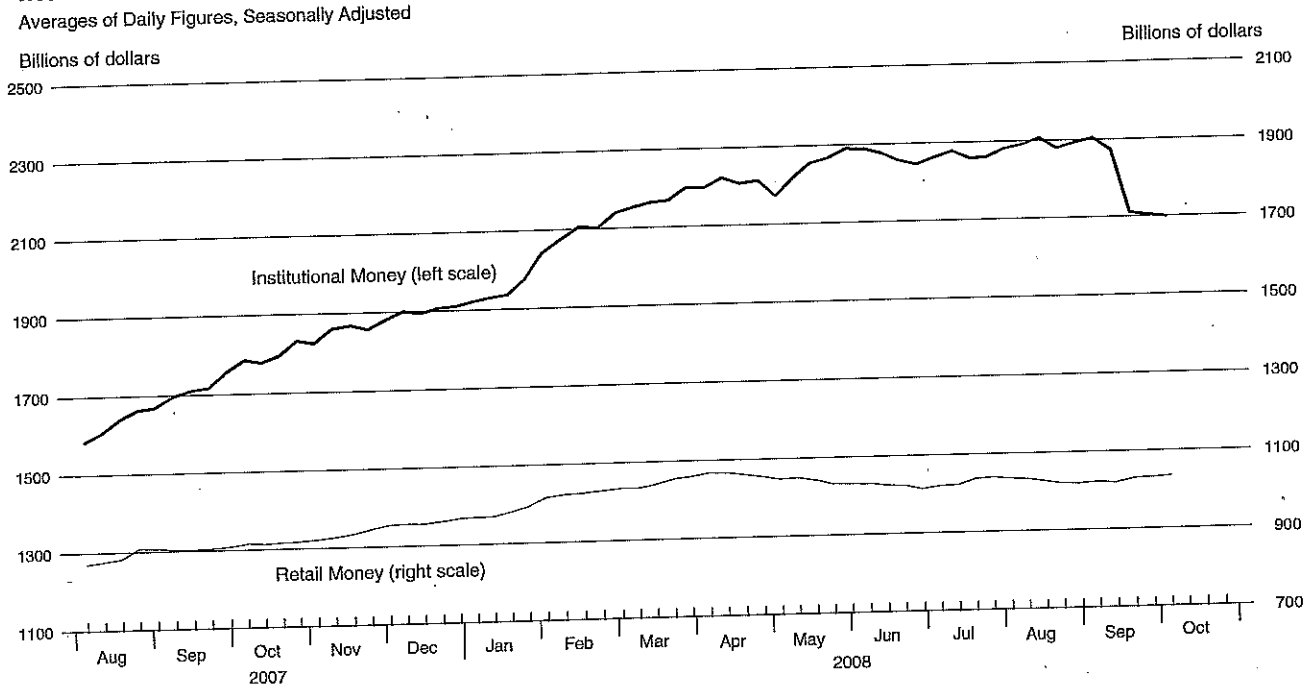


Figure 11

Savings and Small Time Deposits

Averages of Daily Figures, Seasonally Adjusted

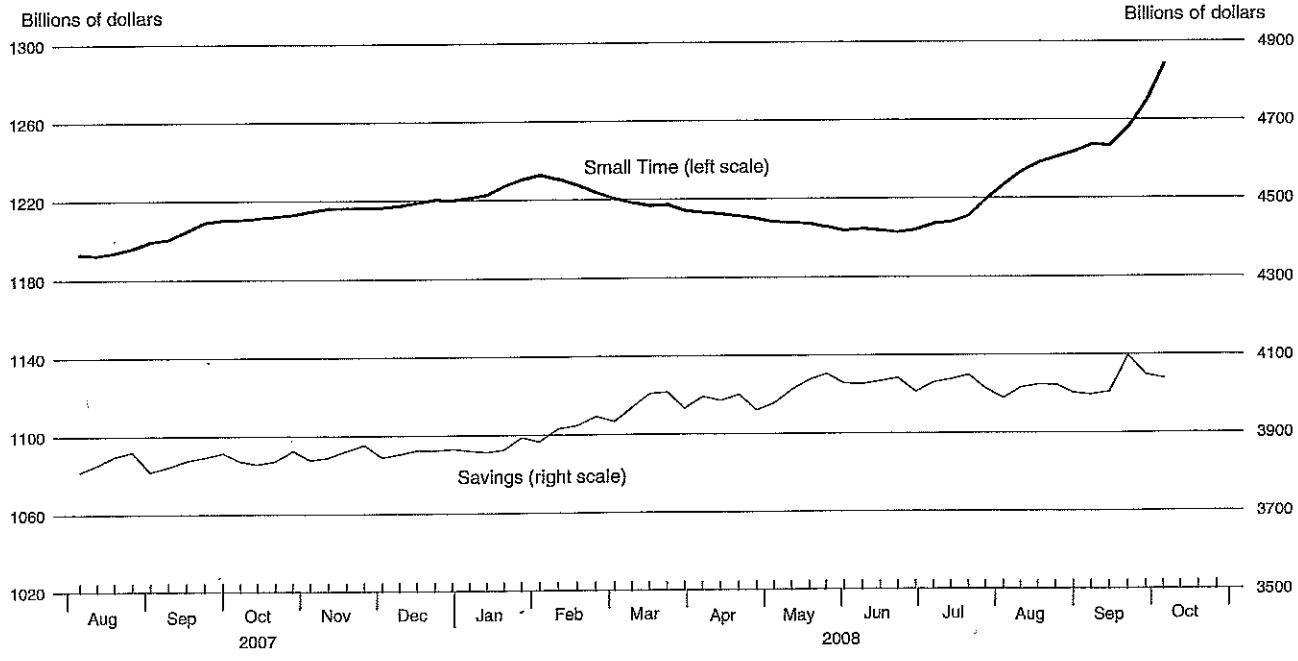


Figure 12

Reserve Bank Credit and Federal Reserve Holdings of U.S. Treasury Securities

Averages of Daily Figures

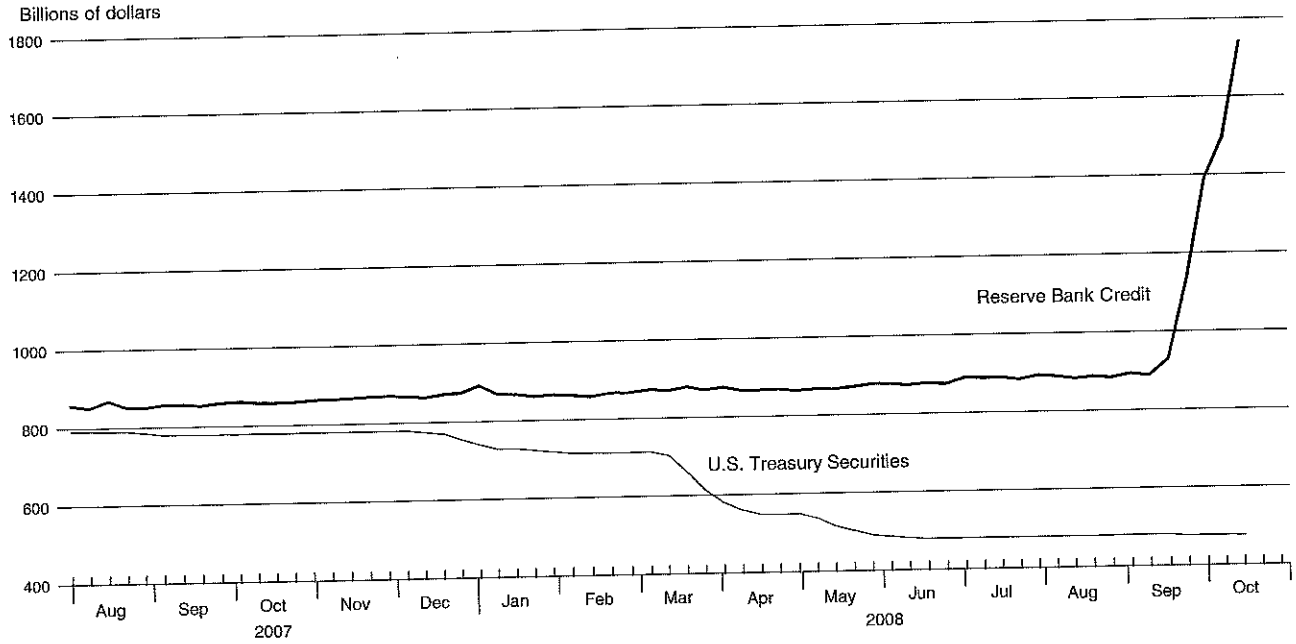


Figure 13

Term Auction Credit

Averages of Daily Figures

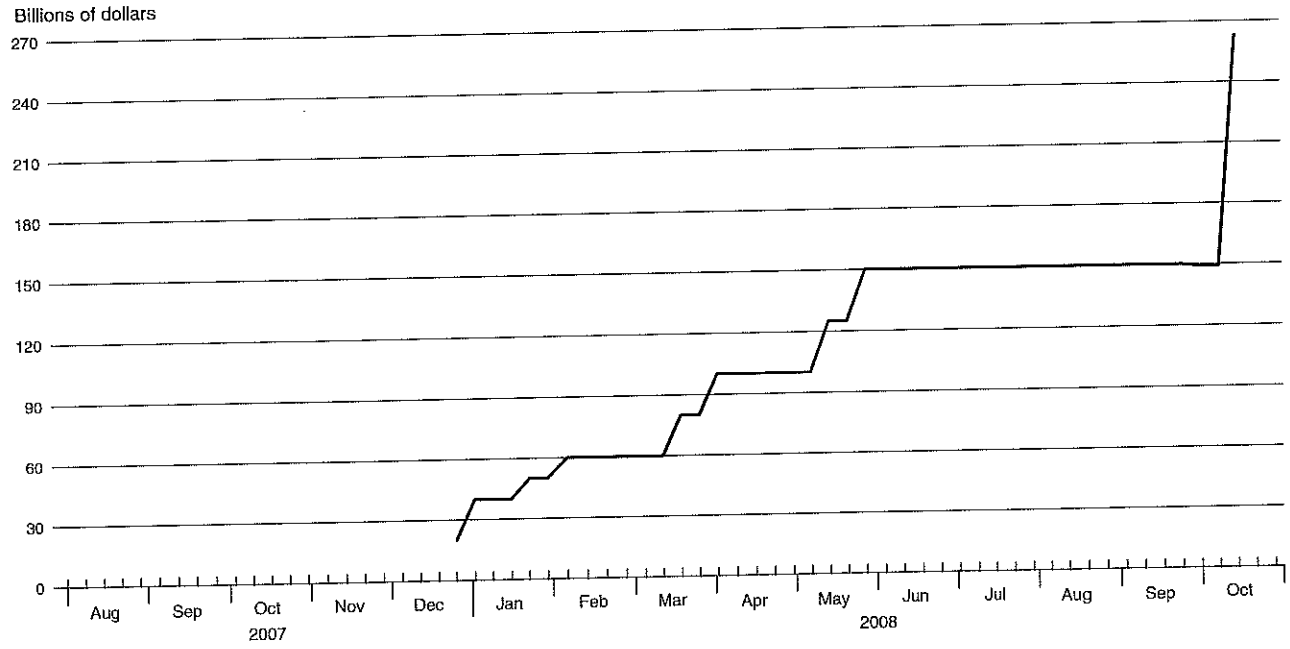


Figure 14

Bank Loans and Credit

All Commercial Banks in the United States, Seasonally Adjusted

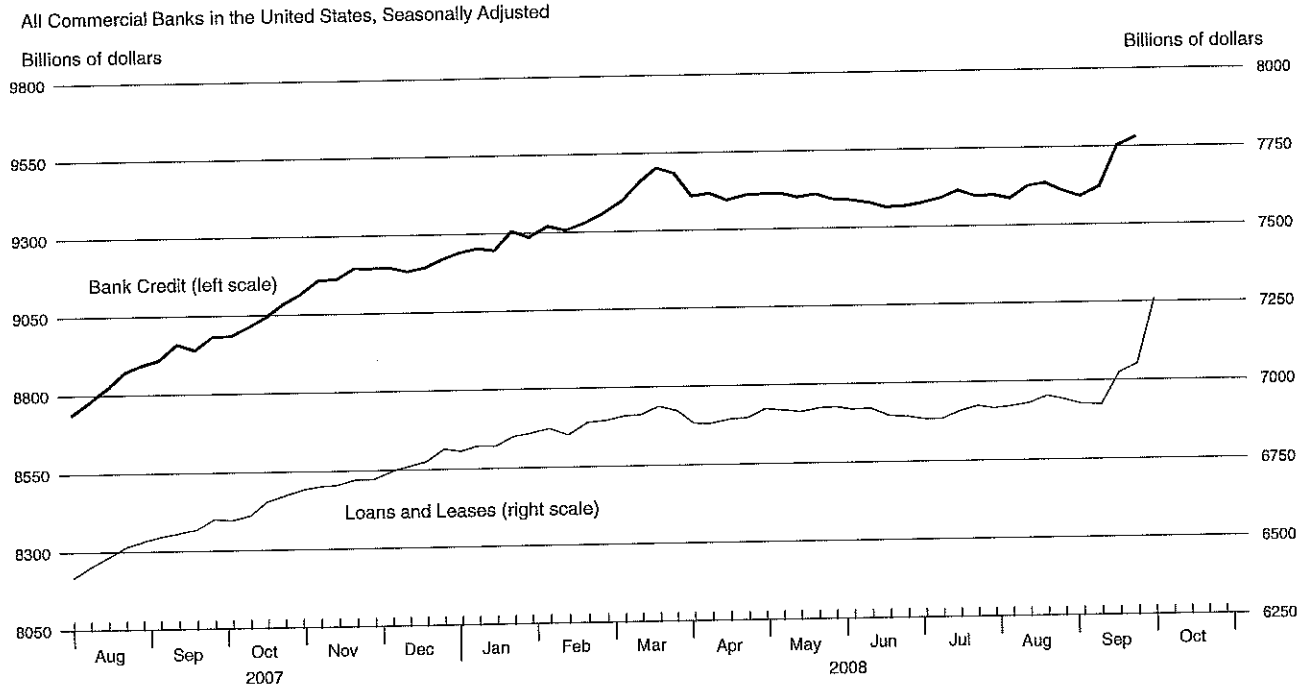
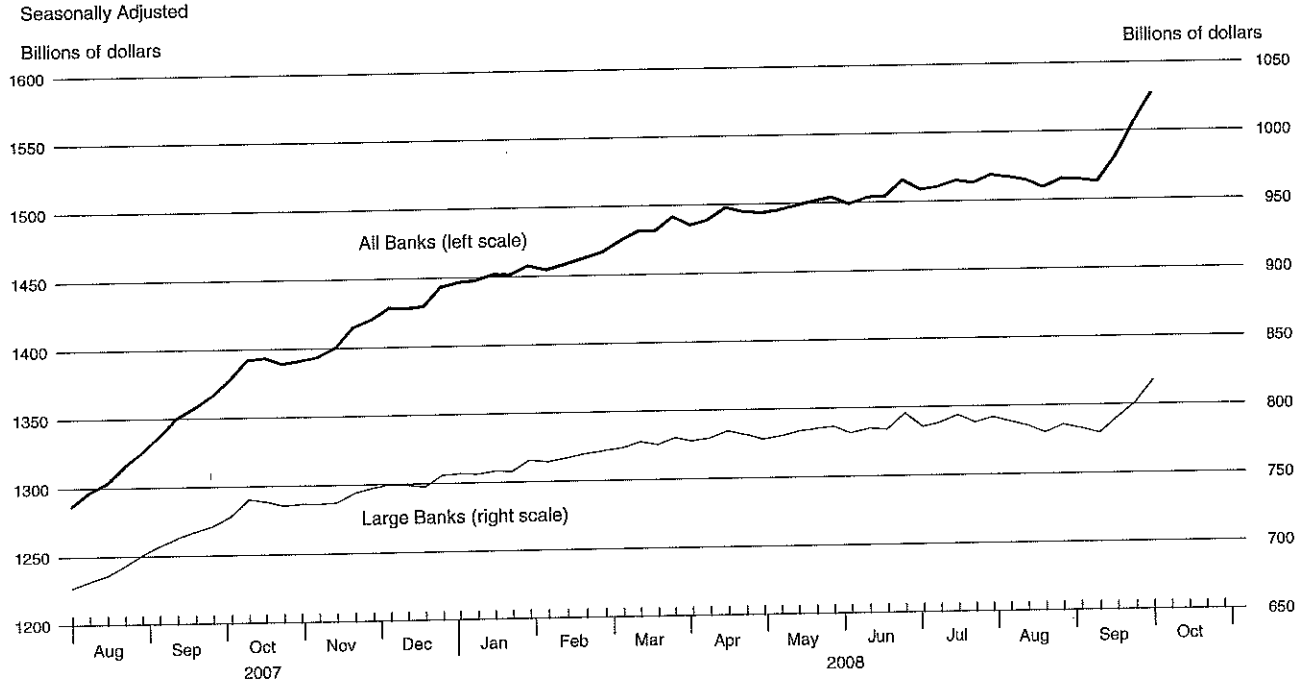


Figure 15

Commercial and Industrial Loans

Seasonally Adjusted



U.S. Financial Data

updated through
10/16/08

Figure 1b

M2

Averages of Daily Figures, Seasonally Adjusted

Billions of dollars