

## **What Caused the Great Recession of 2008-2009?**

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*The current world recession brings back the perennial debate over the role of financial instability as a cause of cyclical fluctuations in economic output and employment. The consensus that banks took on excessive risk leaves unanswered key questions. First, how should government regulate risk taking by banks? Should it extend and enhance the existing regulatory apparatus? Alternatively, should it introduce market discipline by limiting the financial safety net? Second, to what extent have bank portfolio losses caused the recession and to what extent are they symptoms? This essay highlights the issues confronting the policymakers who will reform the existing bank regulatory apparatus and offers some views on the fundamental issue of whether the recession reflects an inherent instability in private markets or failures of monetary and regulatory policy.*

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The current crisis highlights the relationship between economic and financial instability. The imperative of understanding the relationship between these twin phenomena and of using that understanding to design policy to prevent future recurrences of world recession is transcendently important. A person (*Financial Times*, 6/6-7/2009) speaking for Angela Merkel, Germany's chancellor, said "Another crisis like this one and the west will be wiped out." Unfortunately, understanding the cause of any individual episode of financial and economic instability, no matter how severe the episode, is inherently problematic because of the complexity of the forces involved and because of the simultaneous occurrence of these forces. Economists talk about the "identification problem" of disentangling causation from common correlation. Unfortunately, competing models cause economists to disentangle causation in ways that yield different implications for government policy.

When policymakers institute reform, they implicitly chose between these alternative models. The wise choice of a model to guide policy necessitates looking across long historical experience, identifying common patterns (correlations) of financial and economic behavior, constructing alternative models that can assign causation to these common correlations, and then asking how well the alternative models predict. Essential to this exercise is the kind of historical knowledge particular to particular episodes of instability that allow economists to identify "shocks" in the form of changes in government policies and in various external economic events. The economist then asks whether these shocks possess different implications for the way that different models explain instability. As daunting as this task appears, the alternative is sobering. If economists do not engage in this exercise, inevitably the public will look for scapegoats. Those scapegoats will be individuals not the incentives created by different institutional arrangements that governments put into place to "regulate" economic activity.

The following excerpt captures the public debate generated by the current crisis

(*Financial Times*, 5/2-3/2009):

The onset of the worst global recession since the 1930s has led many to suppose the era of liberal economics and light-touch financial regulation ushered in by Thatcher and Ronald Reagan is over. Failures of untrammelled capitalism are blamed for the crisis. Discredited “socialist” solutions are back: banks are nationalized or rescued with taxpayers’ funds; borrowed money is pumped into economies in a Keynesian effort to boost demand.

The remainder of this essay attempts to clarify the fundamental issues with which policymakers must grapple in their efforts at reform.

### **I. Rules vs. discretion**

The current world recession and accompanying financial instability has reopened the most fundamental issues of economics. How should societies provide for the regulation of the economy and the financial system? The interventionist tradition that springs both from popular lore and from numerous academic schools such as Keynesianism holds that markets are inherently unstable. Financial fragility and real instability interact to produce swings in economic activity. Stability requires the regulation of markets through government intervention. In contrast, the free-market tradition, which takes Adam Smith as its founding father, holds that markets are self-regulating provided that government allows the price system to allocate resources and gives individuals an incentive to monitor the use of their resources, physical and financial, through the protection of property rights. The ongoing debate carries the moniker of rules versus discretion. Should government provide for economic stability by shaping behavior through the establishment of rules or by discretionary intervention in markets?

Protagonists in this debate choose their own language. The interventionist tradition speaks of “unfettered” capitalism meaning that the “greed” of powerful individuals is

unconstrained by the market. The implication is that markets unrestrained by government regulation allow powerful actors to exploit the weak and allow the excesses of those actors to destabilize economic activity. There is a need for government to monitor and to control. With respect to financial markets, the government needs to provide a financial safety net to prevent the excesses of bankers from creating a general depositor panic that can bring down the entire financial system. Government regulation must limit the risk taking of bankers.

The free-market tradition speaks of “self-interest” disciplined by the market place. The price system determines market-clearing prices and those prices coordinate the actions of individuals to produce an efficient allocation of resources. Another person’s greed and one’s own self-interest redound to the creation of national wealth because of the protection of property rights. Property rights protect free entry, that is, the ability of any individual to bring his/her resources into competition with anyone else. The other side of free entry is free exit, that is, market-determined bankruptcy.

The market always exists regardless of institutions: individuals always trade in pursuit of their own self-interest. However, a competitive market shaped by the protection of property rights is extraordinarily difficult to achieve and to protect. In financial markets, a financial safety net prevents the creditors (depositors and debt holders) of banks from incurring losses and eliminates the incentive of those creditors to monitor and to limit bank risk taking. The financial safety net erodes the protection of property rights through forced transfers from taxpayers to bank creditors when the risky investments of bankers turn out badly (Hetzel 1997). The resulting limitation on free exit (bankruptcy) encourages excessive risk taking.

According to the interventionist view, the excesses of powerful actors produce destabilizing swings in aggregate economic activity. Government must intervene directly in the

economy to offset this instability. In recession, spending falls short of the spending consistent with full employment; therefore, government should spend an additional amount to compensate for the shortfall. Also, in recession, lending by banks falls short of the lending consistent with full employment; therefore, government (the treasury and the central bank) should lend so as to compensate for the shortfall.

At present, the interventionist view is in the ascendance. Just as in the Depression, popular opinion blames the “unfettered” greed of Wall Street for world recession. Did not the concentrated power of Wall Street bankers bring down the economy? How can one escape the conclusion that the free-market system failed? Surely Adam Smith was wrong that market discipline channels greed into constructive innovation and wealth creation? Surely, the price system failed to disperse the power of producers and give it over to the numerous buyers in the market place. The example discussed in the following section makes clear that such assertions regularly recur at times of crisis, but also that they merit careful scrutiny.

## **II. Do speculative manias drive the business cycle?**

An eternally popular explanation of the business cycle is the alternation in financial markets of periods of greed and fear. Speculative mania starts a boom phase, followed inevitably by bust and deflation. Washington Irving (1819-1820 [2008, 4]) wrote:

Every now and then the world is visited by one of these delusive seasons, when the ‘credit system’... expands to full luxuriance: everybody trusts everybody; a bad debt is a thing unheard of; the broad way to certain and sudden wealth lies plain and open.... Banks... become so many mints to coin words into cash; and as the supply of words is inexhaustible, it may readily be supposed that a vast amount of promissory capital is soon in circulation.... Nothing is heard but gigantic operations in trade; great purchases and sales of real property, and immense sums made at every transfer. All, to be sure, as yet exists in promise; but the believer in promises calculates the aggregate as solid capital.... Now is the time for speculative and dreaming of designing men. They relate their dreams and projects to the ignorant and credulous, [and] dazzle them with golden visions.... The

example of one stimulates another; speculation rises on speculation; bubble rises on bubble.... No 'operation' is thought worthy of attention, that does not double or treble the investment.... Could this delusion always last, the life of a merchant would indeed be a golden dream; but it is as short as it is brilliant.

Commenting on the same event, William Graham Sumner (1874, cited in Wood 2006, 4)

quoted from a report of the Pennsylvania legislature that attributed the distress of the 1819 recession to the prior excesses of an expansion in bank credit begun during the War of 1812.

In consequence ..., the inclination of a large part of the people, created by past prosperity, to live by speculation and not by labor, was greatly increased. A spirit in all respects akin to gambling prevailed. A fictitious value was given to all kinds of property. Specie was driven from circulation as if by common consent, and all efforts to restore society to its natural condition were treated with undisguised contempt.

Timberlake (1993, Ch. 2) provides a different analysis of this episode. With the War of 1812, the government began to run fiscal deficits, which it financed with the issuance of treasury notes. These notes constituted legal tender and served as a medium of exchange. Banks used them as clearing balances. As high-powered money, they allowed banks to expand their note issue, which the public used as currency. This expansion in the money stock fueled inflation. With inflation, the paper money price of gold rose and banks suspended the convertibility of their notes into gold.

With the end of the war, in 1816, the government began to run surpluses. In order to achieve resumption of the gold standard, that is, the reestablishment of convertibility between bank notes and gold at the pre-war parity, Treasury Secretary Crawford used these surpluses to retire the treasury notes. Now, high-powered money contracted, and deflation replaced inflation. The monetary contraction that began in 1816 led to declines in the price level starting in 1817. By 1818, the country was in severe recession.

Timberlake (1893, 25) wrote, "The price level decline in 1818-1820 that resulted in full-scale resumption was accompanied by the usual symptoms of failing banks and business

hardships.... The banks then found they were forced [in the language from an 1818 *Treasury Report* written by Treasury Secretary Crawford] “to contract their discounts for the purpose of withdrawing from circulation a large proportion of their notes. This operation, so oppressive to their debtors, but indispensably necessary to the existence of specie payments, must be continued until gold and silver shall form a just proportion of the circulating medium.”

Although the Treasury forced the monetary contraction, the Second Bank of the United States received the blame. Wood (2005, 131) wrote, quoting the historian Bray Hammond:

There was a scramble for liquidity, and failures almost included the United States Bank, whose “grim efforts” to collect its debts aroused a popular hatred that “was never extinguished.” ... Andrew Jackson’s bank-hating adviser, William Gouge, wrote of this episode that “The Bank was saved and the people were ruined.”

Of course, what is interesting in this episode is the way in which one generalizes across such episodes in order to predict the consequences of alternative policies relevant to the present. Both of the above interpretations stress different correlations with real instability, one financial and one monetary. But which is symptom and which is cause? Consider first the fundamental issue, namely, how well does the price system work to assure macroeconomic stability?

The credit-cycle view, represented in the popular view that recurrent bouts of speculative mania drive the business cycle, implies that periodically the concentrated power and greed in financial markets overwhelm the self-equilibrating properties of markets. Of course, in reality, the calculating, optimizing agents in economists’ models are human beings with emotions. During cyclical expansions, they feel optimistic about the future. During cyclical contractions, they feel pessimistic about the future. Over the cycle, exuberance gives way to gloom and greed gives way to fear. However, implicit in these credit-cycle explanations of the business cycle is the assumption that this alternation in human emotions between greed and fear overwhelms the incentive effects of the price system.

The opposing quantity-theory tradition concentrates on whether monetary disorder prevents the price system from working. In this tradition, the central price is the real interest rate: the intertemporal price of resources, that is, the price of obtaining resources today measured in terms of resources that must be delivered tomorrow. It serves as a fly wheel to moderate fluctuations in real GDP around its longer-run trend. When individuals are pessimistic about their future job and income prospects, a low real interest rate increases real aggregate demand sufficiently to absorb full-employment output. Conversely, when individuals are optimistic about the future, a high real interest rate constrains real aggregate demand to the level of full-employment output. In the tradition of Wicksell (1898 [1962]), the real economy produces a unique real interest rate (the natural rate) consistent with maintaining output at potential. As a condition for the monetary control required to maintain price stability, the central bank must have procedures that cause its interest rate target to track the natural rate and, by implication, allow the real economy to determine real variables.

Do waves of optimism and pessimism overwhelm the working of the price system and prevent the real interest rate from serving its equilibrating role? Monetary history reveals that prolonged, significant downturns in economic activity require that monetary disorder interfere with the market determination of the real interest rate. During downturns, money destruction limits declines in the real interest rate. Similarly, during expansions, money creation limits increases (Friedman and Schwartz 1963a; Hetzel 2008a). As Wood (2006, 6) noted:

Irving Fisher (1911, 66) also attributed a great part of financial fluctuations to slowly adjusting interest rates. Expansions are characterized by rising credit, commodity prices, and profits, and end with the “loss of confidence” that “is the essential fact of every crisis” and “is a consequence of a belated adjustment in the interest rate.”

With this background, it is now possible to illustrate how historical narrative allows for the identification of shocks with different implications for different theories. According to the

credit-cycle view of the business cycle, speculative activity drives booms and then busts follow inevitably. The fall in asset prices from their boom-driven unsustainable level and the need to work off excessive debt leverage through forced liquidation produces deflation and recession. As pointed out by Friedman (1964 [1969]), if this view were correct, the magnitude of the preceding boom would predict the magnitude of the following bust.

However, Friedman found that the magnitude of cyclical expansions in output fails to forecast the magnitude of subsequent cyclical declines in output. This fact contradicts the implication of credit-cycle explanations of the business cycle that recessions manifest the working out of prior speculative excess. Using data on cyclical expansions and contractions from 1879 through 1961, Friedman (1964 [1969], 272) concluded that “[T]here appears to be no systematic connection between the size of an expansion and of the succeeding contraction....This phenomenon...[casts] grave doubts on those theories that see as the source of a deep depression the excesses of the prior expansion. At the same time, the magnitude of an economic contraction predicts the magnitude of the subsequent expansion.” Morley (2009, 3) reconfirmed Friedman’s results using quarterly data from 1947Q2 through 2008Q4: [E]xpansions imply little or no serial correlation for output growth in the immediate future, while recessions imply negative serial correlation in the near term.”

The empirical finding that the magnitude of recessions does predict the magnitude of recoveries finds expression in the description of recoveries as V-shaped. If there is a natural rate of interest, and the Fed puts considerable inertia in real interest rates relative to the cyclical behavior of the economy, then the real rate either exceeds or falls short of the natural rate. In recovery phases, when the Fed has pushed the funds rate down below the natural rate, the economy recovers quickly. Therefore, one gets a V shaped recovery. This pattern characterizes

the stop-go period of monetary policy. However, if instead, powerful nonmonetary forces are causing the recession and overwhelming the working of the price system then there is no reason for a V shape to recession/recovery phases. In the case of a boom-bust credit cycle, there should be a slow recovery if it takes a long time to work through debt defaults so that the magnitude of the bust depends upon the magnitude of the prior boom.

How is this review of past cyclical fluctuations relevant to current experience? The reason is that if the Friedman-Morley analysis is correct, it is hard to find convincing evidence that past recessions arose from dysfunction in credit markets. The implication is that credit markets work well to transfer funds from savers to investors. In the jargon of finance, no-arbitrage conditions are a useful characterization of financial markets. Of course, there may be something special about the current recession that explains a failure of financial markets, but the general presumption that financial markets have worked well in the past raises the hurdle that a special explanation must satisfy. What about the common perception that the Great Depression arose from the collapse of the banking system? Perhaps the current recession is a replay of the Great Depression.

### **III. The cause of the Great Depression: monetary or credit-market instability?**

At present, during the current crisis, one often hears that central banks have learned the lessons of the Great Depression. But what are these lessons? Learning requires the testing over numerous historical episodes of models that allow assignment of causation to correlations given an identification of shocks. In the Depression, what was the shock and what kind of model translates that shock into a decline in output?

Just as at present, during the Depression, the most common answers to this question appealed to the credit-cycle view of a speculative financial boom followed by a debt-liquidation

bust. Just as at present, commentators pointed to an easy money policy of the Fed as the factor initiating the speculative boom. The following quotation is a random sample of credit-cycle views currently espoused to explain the 2008-2009 recession. In a review of Robert J. Samuelson's book, *The Great Inflation and Its Aftermath*, Scheiber (2008) wrote:

In 1998, after a global financial crisis threatened the expansion he'd so carefully cultivated, Greenspan flooded the economy with cash (not crazy), and kept interest rates low for more than a year (highly questionable). The extra money led to the tech frenzy that ended so badly in 2000. Beginning in 2001, Greenspan aggressively lowered interest rates and kept them low into 2004. Once again, all the excess cash resulted in a bubble—this one in real estate—the bursting of which we are now struggling through.... The prices of stocks and homes are every bit as vulnerable to inflation as the prices of toothpaste and sandwich bread, even if government statistics properly account only for the latter pair. And as we are discovering, the consequences of that inflation are every bit as damaging.

In the Great Recession, policymakers held that the view that in 1927 Governor Strong of the New York Fed had violated the real bills doctrine. According to this doctrine, the Fed should lend only on real bills (short-term, self-liquidating loans to finance goods in the process of production). Conversely, it should avoid open market purchases that would provide funds in excess of what was needed to finance trade and thus would spill over into speculation in financial markets. In 1927, Strong had lowered interest rates in the United States to provide financial conditions conducive to Britain's resumption of the gold standard. Meltzer (2003, 289) quotes San Francisco Fed president Calkins who stated that "the 1927 experiment [is] now quite generally...admitted to have been *disastrous*" [italics in original]. Starting in 1928, the Fed raised interest rates in a deliberate attempt to deflate what it saw as a speculative bubble in equities on the New York Stock Exchange.

After the August 1929 peak in the business cycle, the Fed lowered the discount rate and market rates only very reluctantly out of fear that ease in credit markets would reignite the speculation it held responsible for the boom-bust cycle. Meltzer (2003, 294) quotes a policy

statement of the Fed's Open Market Committee in January 1930:

[It] is inexpedient [to] attempt to stimulate business when it is perhaps on a downward curve...in a vain attempt to stem an inevitable recession.... The majority of the Committee is not in favor of any radical reduction in the bill rate or radical buying of bills which would create an artificial ease or necessitate a reduction in the discount rate.

In expressing opposition to open-market purchases, in a memo for the September 25, 1930 Open Market Policy Conference, the Philadelphia Fed articulated majority sentiment among the regional Banks (Meltzer 2003, 318):

We have...found ourselves out of harmony with the policy [open-market purchases] recently followed of supplying unneeded additions to credit in a time of business recession.... We have been putting out credit in a period of depression, when it is not wanted and cannot be used.

Understanding the Great Depression in a way that is useful for extrapolation of its lessons to the present crisis requires identification of the initiating shock and use of a model that explains how that shock propagated to the real sector. Did the shock originate in a speculative bubble followed by a forced liquidation of excessive debt acquired in the prior boom? Did runs on banks induced either by a fear that other depositors would run or by fears for the solvency of banks create another shock that exacerbated a breakdown in financial intermediation and in the financing of business? If the answer is affirmative and if the causes of the current recession mirror those of the Great Deflation, central banks should prevent any bank from failing and should intervene directly to correct the market failure that has kept financial intermediation from transferring funds from savers to investors.

The appropriate policy response changes if the Great Depression and the current recession both originated in a monetary policy shock propagated by monetary nonneutralities inherent in forcing down the price level in a way that renders impossible the coordination across firms of reductions in their dollar prices. In this case, the appropriate policy is to engineer a

large increase in the money stock through central bank purchases of illiquid assets such as long-term Treasury securities in order to induce portfolio rebalancing while avoiding credit market interventions and allowing banks to allocate credit.

Meltzer (2003), Friedman and Schwartz (1963a), and Hetzel (2008a) offer a monetary explanation for the Great Depression. Although the Fed lowered the discount rate from its high of 6% in 1929 to just above 1% in 1931, the Fed raised the discount rate sharply in fall 1931 in response to gold outflows triggered by Britain's departure from the gold standard. Hetzel (2008a, Ch. 3, Table 3.1) uses the measure of expected deflation from Hamilton (1992) to calculate the real short-term interest rate in this period. Throughout, expected deflation made the real rate extremely high and it reached 9.7% in 1931. Hetzel (2008a) argues that the Fed's attempt to prick the stock market bubble in 1928 and 1929 along with its reluctance to lower money market rates when recession developed and followed by interest rate hikes in response to gold outflows created a deflationary cycle. Monetary contraction led to deflation, which led to expected deflation, which led to increased real interest rates, which exacerbated monetary contraction, and so on.

Monetary contraction validated the high real interest rates engineered by the Fed. Given the unit-banking structure of the United States, the required fall in the money stock necessitated the failure of banks. While those failures occurred in waves, they did not involve an indiscriminate withdrawal of funds from the banking system. Depositors withdrew funds from the smaller, regional banks considered less sound and redeposited them in larger, urban banks considered safer (Calomiris and Mason 1997 and 2003; Kaufman 1994).

The identification of the original shock and its propagation is difficult because of the dual role of banks as providers of payments services through the creation of demand deposits and also

as providers of financial-intermediation services through lending. A bank failure induces both monetary and credit restriction. However, two sorts of evidence favor a monetary interpretation of the Great Depression. The first kind of evidence comes in the form of differences across countries in the timing of going off the gold standard. Countries that remained on the gold standard and suffered forced deflation from gold outflows experienced economic contraction while countries that left the gold standard and stabilized their money stocks experienced rapid economic recovery. (See Eichengreen and Sachs 1985; Eichengreen 1995; Hetzel 2002.)

The second kind of evidence comes from the timing relationships between the actions of the Fed and the business cycle. The first cyclical peak occurred in August 1929 after the Fed began increasing interest rates to deflate the stock market “bubble,” while the first bank runs did not occur until a year later in fall 1930. More significant, the timing of the first business-cycle trough and ensuing recovery appears explicable in terms of monetary shocks but not credit shocks. As evidenced in the National Industrial Recovery Act and in the Agricultural Adjustment Act passed in summer 1933, the Roosevelt administration pursued policies to raise wages and agricultural prices. As part of this broader policy, the administration took the United States off the gold standard and undertook purchases of gold to raise its dollar price. In April 1933, Roosevelt issued an order forbidding the private holding of gold and the export of gold. In June, the United States abrogated gold clauses in contracts. Because commodity prices were set internationally, dollar depreciation raised the domestic price of internationally traded commodities. By reversing the decline in the price level, these actions turned expected deflation into expected inflation and almost overnight changed the real interest rate from a high positive number to a negative number (Hetzel 2008a).

After March 1933, the economy began a vigorous recovery, which lasted until May 1937.

An implication of the credit-shock view of the Depression is that bank failures depress economic activity by destroying the specialized knowledge developed in bank lending. Counter intuitively from the perspective of this view, economic recovery followed shortly after the wave of bank failures in the last quarter of 1932 and the first quarter of 1933 and coincided with the large-scale closing of banks both in numerous state bank holidays and in the Bank Holiday that Roosevelt declared in March 1933. Meltzer (2003, 424) wrote:

Approximately 4,000 banks did not reopen [after the Bank Holiday]. This was nearly 40 percent of the banks that closed between June 1929 and June 1933. The Midwest was hit particular hard, losing 2,500 of the 4,000 banks.

After March 1933, the Fed withdrew as an active central bank and surrendered control of monetary policy to the Treasury. Concerned about runs and fearful of the stigma associated with use of the discount window to obtain reserves, banks accumulated excess reserves. By 1933, they had accumulated sufficient reserves to avoid recourse to the discount window to replace reserve outflows. The Fed's procedures for controlling market rates, which determined market rates as a markup over the discount rate that varied positively with member-bank borrowing, then became irrelevant. The Fed simply froze the size of its asset portfolio. Its attitude was that the high level of excess reserves indicated that nothing else could be done to ease monetary policy. This understanding of monetary policy had appeared in a letter written on July 17, 1930 by Governor Harrison of the New York Fed to the other governors (quoted in Meltzer 2003, 312):

The principal New York City banks have paid off all their discounts here and at present have a surplus of reserves. Thus, the condition which we have desired, and for the attainment of which we believed purchases of government securities might be necessary, has been achieved.... [T]he important thing to be achieved in present circumstances is that the money center banks should be substantially out of debt.

Consistent with the hypothesis in Hetzel (2008a) that the expected inflation created by

the dollar depreciation begun by the Roosevelt administration in March 1933 lowered the real interest below the natural rate and allowed the economy to recover, monetary contraction abated and then ended in the first half of 1933. M1 growth went from (an annualized rate of) -12.4% in 1933Q1, to -2.0% in 1933Q2, to 9.3% in 1933Q3 (Friedman and Schwartz 1970, Table 1).

Vigorous monetary expansion continued until 1937Q1. With a new Board chairman, Marriner Eccles, and with the centralization of authority in the Board of Governors provided for in the Banking Act of 1935, the Fed in 1936 decided to again become an active central bank.

Eccles held conventional views of the causes of the Depression. Meltzer (2003, 464) wrote, “He believed the depression was caused by an overexpansion of debt and investment; the maldistribution of wealth—too much wealth concentrated in too few hands; and underconsumption by low-income earners.” Meltzer (2003, 417) wrote of prevailing opinions:

[M]uch of society at the time [believed] that speculation was responsible for financial collapse and the Great Depression.... The Securities Exchange Act (1934) gave the Federal Reserve Board authority to set margin requirements in the belief that general monetary powers...cannot prevent a speculative boom in stock prices without harming the so-called legitimate needs of trade. Parts of the Banking Act of 1933, generally referred to as the Glass-Steagall Act, separated commercial banking from investment banking.

According to conventional views, monetary policy had no power to stimulate the economy because, as Eccles said in his 1935 congressional testimony, “you must have borrowers who are willing and able to borrow” (Meltzer 2003, 478). However, the Fed could forestall the ability of banks to resume speculative lending by neutralizing their excess reserves through an increase in reserve requirements. Without a cushion of excess reserves, a resumption of bank lending would again require recourse to the discount window, which would produce an increase in interest rates. As the Board’s research director, Emanuel Goldenweiser told the regional bank presidents, the “most effective time for action to prevent the development of unsound and

speculative situations is in the early stages of such a movement when the situation is still susceptible of control” (Meltzer 2003, 508).

Between August 15, 1936 and May 1, 1937, the Board raised reserve requirements on demand deposits by 100%. Moreover, the Treasury sterilized gold inflows. The vigorous, double-digit M1 growth that had accompanied economic recovery slowed starting in 1936Q3 and the level of M1 declined over the last three quarters of 1937. With the cyclical peak in May 1937, economic decline began anew. After FDIC deposit insurance effective January 1, 1934, banks practically ceased failing. There are then no grounds for arguing that a shock to financial intermediation as distinct from money creation ended the expansion.

#### **IV. Drawing parallels between past and present**

Friedman (1960, 9) hypothesized that monetary instability produced real instability:

The Great Depression did much to instill and reinforce the now widely held view that inherent instability of a private market economy has been responsible for the major periods of economic distress experienced by the United States. As I read the historical record, I draw almost the opposite conclusion. In almost every instance, major instability in the United States has been produced or, at the very least, greatly intensified by monetary instability. Monetary instability in its turn has generally arisen either from governmental intervention or from controversy about what governmental monetary policy should be.

Friedman used volatility in money growth (changes in a step function fitted to money growth rates) to measure monetary instability (Friedman and Schwartz 1963b). With the increased interest sensitivity and instability of money demand that has prevailed since 1981, money has largely lost its usefulness as a measure of the impact of monetary policy actions on the expenditure of the public. Nevertheless, the lack of information from the behavior of money about whether the central bank is introducing inertia into changes in the real interest rate does not diminish the quantity-theory insight that the central bank determines trend inflation through its

control over money creation. As explained by Wicksell (1898 [1962]), stability of the price level requires monetary control. With an interest-rate instrument, a prerequisite for monetary control becomes the implementation of systematic procedures that cause changes in the real funds rate to track changes in the natural rate. Procedures that allow the price system to work to determine the real interest rate imply allowing the marketplace to determine real variables like the unemployment rate.

Hetzel (2008a, 2008b, 2009a) characterizes the systematic procedures that provide for monetary control as “lean-against-the-wind-with credibility.” These procedures evolved pragmatically in the Volcker-Greenspan era, although they were adumbrated in the early years of the William McChesney Martin chairmanship. Using the terminology of FOMC chairman Martin, the FOMC follows a lean-against-the-wind procedure according to which it raises the funds rate in a measured, persistent way in response to sustained increases in resource utilization rates (decreases in the unemployment rate), and conversely for sustained decreases in resource utilization rates. Central to these procedures is the discipline imposed on the resulting period-by-period funds rate changes through the imperative that the changes be consistent with maintenance of the expectation of price stability read from the behavior of bond rates. That is, in response to real shocks, financial markets should believe that funds rate changes will cumulate to whatever extent necessary to maintain trend inflation unchanged. This belief is the nominal anchor. In the period known as stop-go, undisciplined by the imperative of maintaining the expectation of price stability, the Fed introduced cyclical lags into the behavior of short-term interest rates and as a result created procyclical money growth.

Within this framework, the current recession does not reflect the failure of a price system overwhelmed by the risk-taking of large banks but rather the failure of central banks to allow it

to work (Hetzel 2009a). In 2008, an ongoing increase in the prices of energy and food lowered real income and an ongoing fall in housing prices lowered real wealth. Initially, central banks lowered their interest-rate targets in response to the resulting mild recession. However, in late spring 2008, central banks became increasingly concerned that persistent headline inflation in excess of core inflation would destabilize expected inflation and compromise their inflation objectives. In summer 2008, the FOMC, along with other central banks, departed from its lean-against-the-wind procedures and recreated the stop phase of the stop-go monetary era by failing to lower the funds rate in response to weakening economic activity. In fall 2008, distracted by a focus on financial intermediation, central banks lowered their interest rate targets only slowly in response to the huge destruction in wealth and the sharp increase in pessimism about the future as it became clear that the recession would be worldwide. When central banks did lower their rate targets, they ran into the zero-lower-bound problem in which the natural interest rate is sufficiently negative that it lies below the real funds rate.

## **V. The financial safety net and subsidies to risk taking**

Beyond monetary stability, what about the other prerequisite for a free-market economy: the free entry into and exit from markets? Or, alternatively, what about the incentive to monitoring provided by the profit and loss associated with private property? Why did markets fail in their monitoring of bank risk taking? There is no doubt that the financial system that existed in summer 2007 was highly fragile as a result of the extensive use of leveraging: funding long-term, risky, illiquid assets with short-term borrowing in the form of commercial paper and repurchase agreements. No doubt, greed motivated the risk-taking represented by such leveraging, but what about the suppliers of the short-term funds that made the leverage possible? Were they not also greedy? Do they not mind losing money?

Common discourse places the origin of the current recession in the subprime crisis. The securitization of subprime mortgages and their placement in banks made these institutions vulnerable to the reversal of the run up in house prices that began in 2006. The resulting losses then reduced bank capital and banks' ability to finance productive investment. No doubt this story is descriptively accurate. Nevertheless, it leaves unanswered the fundamental question why the banks that held these securitized assets did not perform the due diligence, which is after all the primary activity for which they exist. The following attributes this excessive risk taking to the existence of the financial safety net. As background, the narrative reviews the role played by "affordable" housing programs in increasing house prices as a consequence of policies to increase the rate of homeownership. (For a more comprehensive discussion and for the sources of the statistics in this and the following section, see Hetzel 2009b.)

Understanding the subprime crisis requires understanding the role played by the GSEs (Fannie Mae and Freddie Mac). They increased the demand for the housing stock through subsidies that raised the homeownership rate to an unsustainable level, and, as a consequence of a relatively inelastic supply of housing due to land and local zoning constraints, contributed to a sustained rise in house prices. That rise in housing prices made the issuance of subprime and Alt-A loans appear relatively risk free.

In 1990, Freddie Mac and Fannie Mae owned 4.7% of U.S. residential mortgage debt and by 1997 11.4%. In 1998, that figure began to rise sharply and in 2002 it reached 20.4%. (The figure is 46% including mortgage debt guaranteed for payment of principal and interest). After 2003, as a result of portfolio caps placed on these companies by the Office of Federal Housing Enterprise Oversight (OFHEO) due to accounting irregularities at the GSEs, their market share declined. However, they continued to purchase significant amounts of subprime and ALT-A

loans.

Early in the 2000s, the GSEs channeled into the housing market the increased foreign demand for riskless dollar-denominated debt that arose after the Asia crisis. When the interest rate on U.S. government securities fell to low levels, the GSEs encouraged foreign investors to shift from Treasuries to their agency debt. In doing so, investors could take advantage of somewhat higher yields on debt still guaranteed by the government, albeit guaranteed implicitly. In March 2000, foreigners owned 7.3% of the total outstanding of GSE debt (\$261 billion) and, in June 2007, 21.4% of the total (\$1.3 trillion). Foreign central banks and other official institutions owned almost \$1 trillion of GSE debt in 2008.

The FHLBs (Federal Home Loan Banks) also encouraged the increase in home mortgage lending. FHLB advances, which are conditioned on real estate lending, grew from \$100 to \$200 billion from 1997 through 2000 and then accelerated. As of 2008Q3, the system had advanced \$911 billion to banks and thrifts. In addition, the FHLBs subsidize housing directly by borrowing at their government-guaranteed interest rate and purchasing mortgage backed securities (MBSs) for their own portfolio. As of 2007Q4, they held \$132 billion of residential mortgage backed securities.

Beyond subsidizing mortgage lending, government policies to increase home ownership work by encouraging a relaxation of (an increase in) the loan-to-value ratio required to borrow to own a home, say, by obtaining FHA (Federal Housing Administration) insurance. Highly leveraged borrowers with home mortgages rendered the financial system fragile. Robert J. Shiller commented (*Wall Street Journal*, 3/30/2009):

[W]e have a system that encourages homeowners to take leveraged, risky positions with all of their wealth in real estate in one city....How can it be optimal if you have all of your life savings in this one leveraged investment?

## **VI. TBTF and the absence of monitoring**

The analysis of Jensen and Meckling (1976) explains how markets undistorted by government socialization of risk restrain risk taking. Equity holders in corporations have an incentive to take risks that are excessive from the perspective of bond holders because of the way that limited liability limits equity holders' downside losses without limiting their upside returns. As a result, debt holders, who suffer losses from a firm's insolvency, demand a return that increases with leverage, covenants that limit risk taking, and accounting transparency. Because the financial safety net renders superfluous the need of creditors of banks to monitor, market mechanisms for limiting risk in banking are attenuated. There is no offset to the additional expected return that banks earn from holding riskier portfolios arising from a higher cost of funds.

The financial safety net works to limit the need for creditors (debt holders and depositors) to monitor the risk taking of banks in two broad ways. First, as supervisor of bank holding companies and as the source of liquidity to banks through the discount window, the Fed has always served as a systemic risk regulator interpreted as the party responsible for maintaining stability in money markets. It has attempted to maintain this stability in part by smoothing short-term fluctuations in interest rates. Such smoothing lessens the apparent risk in funding long-term investments with short-term debt. Also, since the Depression and until Lehman Brothers, the Fed has allowed troubled financial institutions to use the discount window to allow uninsured depositors and short-term debt holders to withdraw funds, effectively passing on losses in the event of closure to the FDIC (Hetzl 1991). In these ways, the Fed has encouraged short-term liquidity investors to fund long-term investments. Second, and more directly, deposit insurance and too-big-to-fail effectively guarantee all bank creditors from loss, apart from the occasional

losses suffered by uninsured depositors of small, community banks.

In an environment in which the financial safety net subsidizes risk taking, the low interest rates that prevailed in the first part of the 2000s naturally became the building block for using leverage to take advantage of the risk play offered by rising house prices. Of course, subprime brokers made loans to households with shaky finances and of course rating agencies provided unrealistic AAA ratings on the tranced securities packaging subprime mortgages, but the banks unconstrained by debtor monitoring demanded risky assets and the market provided them. After 2000, the exposure of banks to the real estate market increased significantly. Commercial bank assets held in real estate loans (residential and commercial) as a percentage of total loans and leases amounted to 40% in January 1991 and 41% in January 1999. This number rose moderately to 42.7% in January 2001 but then rose rapidly to 55% in January 2007. The large banks of more than a billion dollars in assets accounted for the increase. They held \$800 billion in residential loans in 2002 and \$1.8 trillion in 2007.

Bank exposure exceeded these numbers because of holdings of RMBSs (retail mortgage backed securities) and CDOs (collateralized debt obligations formed with tranches of MBSs) in off-balance-sheet conduits called qualified special purpose vehicles (QSPVs) or structured investment vehicles (SIVs). Although a weakness in the structured-finance model was the lack of incentive for credit analysis on the part of the mortgage originators who sold the mortgages to be packaged into RMBSs, the bank-sponsored QSPVs created the demand for the subprime and Alt-A loans packaged into these structured securities. Banks set up these off-balance-sheet entities for two reasons. First, they created a profitable spread between the rates on illiquid RMBSs or CDOs and the rates on the commercial paper used to leverage them. Second, they removed the mortgages from banks' books to reduce capital charges.

Large commercial banks drove the growth in structured finance after 2003 through the liquidity and credit enhancements that allowed the leveraging of QSPVs with commercial paper. Liquidity enhancements took the form of guarantees that the bank would extend credit if the commercial paper failed to roll over. Ratings agencies required these guarantees as a condition for rating the paper triple-A. Banks incurred the risk by not using the alternative liquidity enhancement provided by issuing extendible paper. Credit enhancements also took the form of bank-held subordinated debt, that is, that is, debt junior to the commercial paper.

## **VII. The ongoing debate**

The founders of the Fed established it to deal with the periodic recessions associated with bank panics. According to the prevailing real bills views, recessions followed inevitably from prior excessive risk taking by banks through forced liquidation of the resulting bad debt. In 1919, the Fed raised the discount rate to bring down the high level of commodity prices it attributed to a speculative bubble in world commodity markets. A business cycle peak followed in January 1920. In 1928, a consensus again formed over the occurrence of an asset price bubble in real estate in places like Florida and in equity prices on the New York Stock Exchange. A debate ensued over how to prick the bubble. The Board of Governors wanted to use quantitative measures to restrict credit used for speculative purposes. The New York Fed argued that credit is fungible and that the banks would circumvent quantitative restrictions. The New York Fed won the debate and raised the discount rate to engineer asset price deflation. The Great Depression ensued.

In the environment of the Depression, sentiment again turned to quantitative control of risk taking. The Fed received the power to regulate the extension of credit to purchase stocks through margin requirements. The Glass-Steagall Act of 1933 separated commercial and

investment banking. The debate between proponents of unit banking and interstate branch banking concluded with the former victorious. The United States enforced rigorous limitations on bank entry and the competition held responsible for excessive risk taking. (On regulatory reform in this period, see Calomiris and White 1994, Fischer and Golembe 1976, Flood 1992, Mengle 1990, and Todd 1996.)

At present, with its discussion of creation of a systemic risk regulator, the U.S. political system is repeating the earlier debate. Perhaps it will be possible to solve the incentive and information problems encountered by central planners and create a systemic risk regulator with the omniscience and prescience to limit risk taking while allowing innovation in the financial sector (Hayek 1945). If not, the political system will need to restore market incentives to limit risk taking. It will need to address the issue of commitment required to end too-big-to-fail and to limit deposit insurance.

### **VIII. Recession: failure of the price system or failure of central banks to allow it to work?**

At present, popular explanations for the current recession hark back to earlier explanations highlighting how a combination of easy money and speculative greed leads to asset bubbles, which when deflated require a purgative cleansing of debt that leads to deflation and recession. James Grant (12/20-21/2008) recalled the attack in 1913 on the law establishing the Federal Reserve System by Elihu Root, senator from New York, who believed that a central bank would be lured into creating easy money:

Little by little, business is enlarged with easy money. With the exhaustless reservoir of the government of the United States furnishing easy money, the sales increase, the businesses enlarge, more new enterprises are started, the spirit of optimism pervades the community. Bankers are not free from it. They are human. The members of the Federal Reserve board will not be free of it. They are human.... Everyone is making money. Everyone is growing rich. It goes up and up, the margin between costs and sales continually growing smaller as a result of the operation of inevitable laws, until finally

someone whose judgment was bad, someone whose capacity for business was small, breaks; and as he falls he hits the next brick in the row, and then another, and then another, and down comes the whole structure. That, sir, is no dream. That is the history of every movement of inflation since the world's business began, and it is the history of many a period in our own country. That is what happened to greater or less degree before the panic of 1837, 1857, of 1873, of 1893 and of 1907.

Or, as Mackay (1841 [2009, 1]) said earlier, "Men think in herds...[and] they go mad in herds."

Paul Krugman generalized from the experience with the Great Depression to place the blame for the current recession on the excesses of unregulated large banks. Krugman (3/21/08) wrote with reference to the Great Depression, "What turned an ordinary recession into a civilization-threatening slump was the wave of bank runs that swept across America in 1930 and 1931. This banking crisis of the 1930s showed that unregulated, unsupervised financial markets can all too easily suffer catastrophic failure." More succinctly, Krugman (4/10/09) wrote of the current recession, "[F]inance turned into the monster that ate the world economy." More generally, the pro-free market management consulting firm McKinsey (June 10, 2009) wrote in a recent newsletter, "The parallels between financial crises and natural disasters...suggest that the economy, just like complex natural systems, is inherently unstable and prone to occasional huge failures that are very hard or impossible to foresee."

Government stimulus packages and government intervention in the market place and in financial markets undertaken in response to the recession create the impression that the government is intervening to fix a problem created in the private economy. Just as in the Great Depression, the natural response is to look for scapegoats in the financial markets. However, if the shock that turned mild recession into deep recession came from central banks and if a financial safety net that subsidizes bank risk taking provided the incentive for a highly-leveraged and fragile financial system, then the appropriate response is to evaluate the fundamental monetary and regulatory framework. Sorting out cause and symptom and designing appropriate

policies are difficult. The issues are complex and require the study of history to provide context for the present.

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