An Overview of the Great Depression

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This article provides an overview of selected events and economic explanations of the interwar era. What follows is not intended to be a detailed and exhaustive review of the literature on the Great Depression, or of any one theory in particular. Rather, it will attempt to describe the "big picture" events and topics of interest. For the reader who wishes more extensive analysis and detail, references to additional materials are also included.

The 1920s

The Great Depression, and the economic catastrophe that it was, is perhaps properly scaled in reference to the decade that preceded it, the 1920s. By conventional macroeconomic measures, this was a decade of brisk economic growth in the United States. Perhaps the moniker "the roaring twenties" summarizes this period most succinctly. The disruptions and shocking nature of World War I had been survived and it was felt the United States was entering a "new era." In January 1920, the Federal Reserve seasonally adjusted index of industrial production, a standard measure of aggregate economic activity, stood at 81 (1935–39 = 100). When the index peaked in July 1929 it was at 114, for a growth rate of 40.6 percent over this period. Similar rates of growth over the 1920–29 period equal to 47.3 percent and 42.4 percent are computed using annual real gross national product data from Balke and Gordon (1986) and Romer (1988), respectively. Further computations using the Balke and Gordon (1986) data indicate an average annual growth rate of real GNP over the 1920–29 period equal to 4.6 percent. In addition, the relative international economic strength of this country was clearly displayed by the fact that nearly one-half of world industrial output in 1925–29 was produced in the United States (Bernanke, 1983).

Consumer Durables Market

The decade of the 1920s also saw major innovations in the consumption behavior of households. The development of installment credit over this period led to substantial growth in the consumer durables market (Bernanke, 1983). Purchases of automobiles, refrigerators, radios and other such durable goods all experienced explosive growth during the 1920s as small borrowers, particularly households and unincorporated businesses, utilized their access to available credit (Persons, 1930; Bernanke, 1983; Soule, 1947).

Economic Growth in the 1920s

Economic growth during this period was mitigated only somewhat by three recessions. According to the National Bureau of Economic Research (NBER) business cycle chronology, two of these recessions were from May 1923 through July 1924 and October 1926 through November 1927. Both of these recessions were very mild and unremarkable. In contrast, the 1920s began with a recession lasting 18 months from the peak in January 1920 until the trough of July 1921. Original estimates of real GNP from the Commerce Department showed that real GNP fell 8 percent between 1919 and 1920 and another 7 percent between 1920 and 1921 (Romer, 1988). The behavior of prices contributed to the naming of this recession "the Depression of 1921," as the implicit price deflator for

GNP fell 16 percent and the Bureau of Labor Statistics wholesale price index fell 46 percent between 1920 and 1921. Although thought to be severe, Romer (1988) has argued that the so-called "postwar depression" was not as severe as once thought. While the deflation from war-time prices was substantial, revised estimates of real GNP show falls in output of only 1 percent between 1919 and 1920 and 2 percent between 1920 and 1921. Romer (1988) also argues that the behaviors of output and prices are inconsistent with the conventional explanation of the Depression of 1921 being primarily driven by a decline in aggregate demand. Rather, the deflation and the mild recession are better understood as resulting from a decline in aggregate demand together with a series of positive supply shocks, particularly in the production of agricultural goods, and significant decreases in the prices of imported primary commodities. Overall, the upshot is that the growth path of output was hardly impeded by the three minor downturns, so that the decade of the 1920s can properly be viewed economically as a very healthy period.

Fed Policies in the 1920s

Friedman and Schwartz (1963) label the 1920s "the high tide of the Reserve System." As they explain, the Federal Reserve became increasingly confident in the tools of policy and in its knowledge of how to use them properly. The synchronous movements of economic activity and explicit policy actions by the Federal Reserve did not go unnoticed. Taking the next step and concluding there was cause and effect, the Federal Reserve in the 1920s began to use monetary policy as an implement to stabilize business cycle fluctuations. "In retrospect, we can see that this was a major step toward the assumption by government of explicit continuous responsibility for economic stability. As the decade wore on, the System took – and perhaps even more was given – credit for the generally stable conditions that prevailed, and high hopes were placed in the potency of monetary policy as then administered" (Friedman and Schwartz, 1963).

The giving/taking of credit to/by the Federal Reserve has particular value pertaining to the recession of 1920–21. Although suggesting the Federal Reserve probably tightened too much, too late, Friedman and Schwartz (1963) call this episode "the first real trial of the new system of monetary control introduced by the Federal Reserve Act." It is clear from the history of the time that the Federal Reserve felt as though it had successfully passed this test. The data showed that the economy had quickly recovered and brisk growth followed the recession of 1920–21 for the remainder of the decade.

Questionable Lessons "Learned" by the Fed

Moreover, Eichengreen (1992) suggests that the episode of 1920–21 led the Federal Reserve System to believe that the economy could be successfully deflated or "liquidated" without paying a severe penalty in terms of reduced output. This conclusion, however, proved to be mistaken at the onset of the Depression. As argued by Eichengreen (1992), the Federal Reserve did not appreciate the extent to which the successful deflation could be attributed to the unique circumstances that prevailed during 1920–21. The European economies were still devastated after World War I, so the demand for United States' exports remained strong many years after the War. Moreover, the gold standard was not in operation at the time. Therefore, European countries were not forced to match the deflation initiated in the United States by the Federal Reserve (explained below pertaining to the gold standard hypothesis). The implication is that the Federal Reserve thought that deflation could be generated with little effect on real economic activity. Therefore, the Federal Reserve was not vigorous in fighting the Great Depression in its initial stages. It viewed the early years of the Depression as another opportunity to successfully liquidate the economy, especially after the perceived speculative excesses of the 1920s. However, the state of the economic world in 1929 was not a duplicate of 1920–21. By 1929, the European economies had recovered and the interwar gold standard was a vehicle for the international transmission of deflation. Deflation in 1929 would not operate as it did in 1920–21. The Federal Reserve failed to understand the economic implications of this change in the international standing of the United States' economy. The result was that the Depression was permitted to spiral out of control and was made much worse than it otherwise would have been had the Federal Reserve not considered it to be a repeat of the 1920–21 recession.

The Beginnings of the Great Depression

In January 1928 the seeds of the Great Depression, whenever they were planted, began to germinate. For it is around this time that two of the most prominent explanations for the depth, length, and worldwide spread of the Depression first came to be manifest. Without any doubt, the economics profession would come to a firm consensus around the idea that the economic events of the Great Depression cannot be properly understood without a solid linkage to both the behavior of the supply of money together with Federal Reserve actions on the one hand and the flawed structure of the interwar gold standard on the other.

It is well documented that many public officials, such as President Herbert Hoover and members of the Federal Reserve System in the latter 1920s, were intent on ending what they perceived to be the speculative excesses that were driving the stock market boom. Moreover, as explained by Hamilton (1987), despite plentiful denials to the contrary, the Federal Reserve assumed the role of "arbiter of security prices." Although there continues to be debate as to whether or not the stock market was overvalued at the time (White, 1990; DeLong and Schleifer, 1991), the main point is that the Federal Reserve believed there to be a speculative bubble in equity values. Hamilton (1987) describes how the Federal Reserve, intending to "pop" the bubble, embarked on a highly contractionary monetary policy in January 1928. Between December 1927 and July 1928 the Federal Reserve conducted \$393 million of open market sales of securities so that only \$80 million remained in the Open Market account. Buying rates on bankers' acceptances¹ were raised from 3 percent in January 1928 to 4.5 percent by July, reducing Federal Reserve holdings of such bills by \$193 million, leaving a total of only \$185 million of these bills on balance. Further, the discount rate was increased from 3.5 percent to 5 percent, the highest level since the recession of 1920–21. "In short, in terms of the magnitudes consciously controlled by the Fed, it would be difficult to design a more contractionary policy than that initiated in January 1928" (Hamilton, 1987).

The pressure did not stop there, however. The death of Federal Reserve Bank President Benjamin Strong and the subsequent control of policy ascribed to Adolph Miller of the Federal Reserve Board insured that the fall in the stock market was going to be made a reality. Miller believed the speculative excesses of the stock market were hurting the economy, and the Federal Reserve continued attempting to put an end to this perceived harm (Cecchetti, 1998). The amount of Federal Reserve credit that was being extended to market participants in the form of broker loans became an issue in 1929. The Federal Reserve adamantly discouraged lending that was collateralized by equities. The intentions of the Board of Governors of the Federal Reserve were made clear in a letter dated February 2, 1929 sent to Federal Reserve banks. In part the letter read:

The board has no disposition to assume authority to interfere with the loan practices of member banks so long as they do not involve the Federal reserve banks. It has, however, a grave responsibility whenever there is evidence that member banks are maintaining speculative security loans with the aid of Federal reserve credit. When such is the case the Federal reserve bank becomes either a contributing or a sustaining factor in the current volume of speculative security credit. This is not in harmony with the intent of the Federal Reserve Act, nor is it conducive to the wholesome operation of the banking and credit system of the country. (Board of Governors of the Federal Reserve 1929: 93–94, quoted from Cecchetti, 1998)

The deflationary pressure to stock prices had been applied. It was now a question of when the market would break. Although the effects were not immediate, the wait was not long.

The Economy Stumbles

The NBER business cycle chronology dates the start of the Great Depression in August 1929. For this reason many have said that the Depression started on Main Street and not Wall Street. Be that as it may, the stock market plummeted in October of 1929. The bursting of the speculative bubble had been achieved and the economy was now headed in an ominous direction. The Federal Reserve's seasonally adjusted index of industrial production stood at 114 (1935–39 = 100) in August 1929. By October it had fallen to 110 for a decline of 3.5 percent (annualized percentage decline = 14.7 percent). After the crash, the incipient recession intensified, with the industrial production index falling from 110 in October to 100 in December 1929, or 9 percent (annualized percentage decline = 41 percent). In 1930, the index fell further from 100 in January to 79 in December, or an additional 21percent.

Links between the Crash and the Depression?

While popular history treats the crash and the Depression as one and the same event, economists know that they were not. But there is no doubt that the crash was one of the things that got the ball rolling. Several authors have offered explanations for the linkage between the crash and the recession of 1929–30. Mishkin (1978) argues that the crash and an increase in liabilities led to a deterioration in households' balance sheets. The reduced liquidity² led consumers to defer consumption of durable goods and housing and thus contributed to a fall in consumption. Temin (1976) suggests that the fall in stock prices had a negative wealth effect on consumption, but attributes only a minor role to this given that stocks were not a large fraction of total wealth; the stock market in 1929, although falling dramatically, remained above the value it had achieved in early 1928, and the propensity to consume from wealth was small during this period. Romer (1990) provides evidence suggesting that if the stock market were thought to be a predictor of future economic activity, then the crash can rightly be viewed as a source of increased consumer uncertainty that depressed spending on consumer durables and accelerated the decline that had begun in August 1929. Flacco and Parker (1992) confirm Romer's findings using different data and alternative estimation techniques.

Looking back on the behavior of the economy during the year of 1930, industrial production declined 21 percent, the consumer price index fell 2.6 percent, the supply of high-powered money (that is, the liabilities of the Federal Reserve that are usable as money, consisting of currency in circulation and

bank reserves; also called the monetary base) fell 2.8 percent, the nominal supply of money as measured by M1 (the product of the monetary base³ multiplied by the money multiplier⁴) dipped 3.5 percent and the ex post real interest rate turned out to be 11.3 percent, the highest it had been since the recession of 1920–21 (Hamilton, 1987). In spite of this, when put into historical context, there was no reason to view the downturn of 1929–30 as historically unprecedented. Its magnitude was comparable to that of many recessions that had previously occurred. Perhaps there was justifiable optimism in December 1930 that the economy might even shake off the negative movement and embark on the path to recovery, rather like what had occurred after the recession of 1920–21 (Bernanke, 1983). As we know, the bottom would not come for another 27 months.

The Economy Crumbles

Banking Failures

During 1931, there was a "change in the character of the contraction" (Friedman and Schwartz, 1963). Beginning in October 1930 and lasting until December 1930, the first of a series of banking panics now accompanied the downward spasms of the business cycle. Although bank failures had occurred throughout the 1920s, the magnitude of the failures that occurred in the early 1930s was of a different order altogether (Bernanke, 1983). The absence of any type of deposit insurance resulted in the contagion of the panics being spread to sound financial institutions and not just those on the margin.

Traditional Methods of Combating Bank Runs Not Used

Moreover, institutional arrangements that had existed in the private banking system designed to provide liquidity – to convert assets into cash – to fight bank runs before 1913 were not exercised after the creation of the Federal Reserve System. For example, during the panic of 1907, the effects of the financial upheaval had been contained through a combination of lending activities by private banks, called clearinghouses, and the suspension of deposit convertibility into currency. While not preventing bank runs and the financial panic, their economic impact was lessened to a significant extent by these countermeasures enacted by private banks, as the economy quickly recovered in 1908. The aftermath of the panic of 1907 and the desire to have a central authority to combat the contagion of financial disruptions was one of the factors that led to the establishment of the Federal Reserve System. After the creation of the Federal Reserve, clearinghouse lending and suspension of deposit convertibility by private banks were not undertaken. Believing the Federal Reserve to be the "lender of last resort," it was apparently thought that the responsibility to fight bank runs was the domain of the central bank (Friedman and Schwartz, 1963; Bernanke, 1983). Unfortunately, when the banking panics came in waves and the financial system was collapsing, being the "lender of last resort" was a responsibility that the Federal Reserve either could not or would not assume.

Money Supply Contracts

The economic effects of the banking panics were devastating. Aside from the obvious impact of the closing of failed banks and the subsequent loss of deposits by bank customers, the money supply accelerated its downward spiral. Although the economy had flattened out after the first wave of bank failures in October–December 1930, with the industrial production index steadying from 79 in December 1930 to 80 in April 1931, the remainder of 1931 brought a series of shocks from which the economy was not to recover for some time.

Second Wave of Banking Failure

In May, the failure of Austria's largest bank, the Kredit-anstalt, touched off financial panics in Europe. In September 1931, having had enough of the distress associated with the international transmission of economic depression, Britain abandoned its participation in the gold standard. Further, just as the United States' economy appeared to be trying to begin recovery, the second wave of bank failures hit the financial system in June and did not abate until December. In addition, the Hoover administration in December 1931, adhering to its principles of limited government, embarked on a campaign to balance the federal budget. Tax increases resulted the following June, just as the economy was to hit the first low point of its so-called "double bottom" (Hoover, 1952).

The results of these events are now evident. Between January and December 1931 the industrial production index declined from 78 to 66, or 15.4 percent, the consumer price index fell 9.4 percent, the nominal supply of M1 dipped 5.7 percent, the ex post real interest rate⁵ remained at 11.3 percent, and although the supply of high-powered money⁶ actually increased 5.5 percent, the currency–deposit and reserve–deposit ratios began their upward ascent, and thus the money multiplier started its downward plunge (Hamilton, 1987). If the economy had flattened out in the spring of 1931, then by December output, the money supply, and the price level were all on negative growth paths that were dragging the economy deeper into depression.

Third Wave of Banking Failure

The economic difficulties were far from over. The economy displayed some evidence of recovery in late summer/early fall of 1932. However, in December 1932 the third, and largest, wave of banking panics hit the financial markets and the collapse of the economy arrived with the business cycle hitting bottom in March 1933. Industrial production between January 1932 and March 1933 fell an additional 15.6 percent. For the combined years of 1932 and 1933, the consumer price index fell a cumulative 16.2 percent, the nominal supply of M1 dropped 21.6 percent, the nominal M2 money supply fell 34.7 percent, and although the supply of high-powered money increased 8.4 percent, the currency–deposit and reserve–deposit ratios accelerated their upward ascent. Thus the money multiplier continued on a downward plunge that was not arrested until March 1933. Similar behaviors for real GDP, prices, money supplies and other key macroeconomic variables occurred in many European economies as well (Snowdon and Vane, 1999; Temin, 1989).

An examination of the macroeconomic data in August 1929 compared to March 1933 provides a stark contrast. The unemployment rate of 3 percent in August 1929 was at 25 percent in March 1933. The industrial production index of 114 in August 1929 was at 54 in March 1933, or a 52.6 percent decrease. The money supply had fallen 35 percent, prices plummeted by about 33 percent, and more than one-third of banks in the United States were either closed or taken over by other banks. The "new era" ushered in by "the roaring twenties" was over. Roosevelt took office in March 1933, a nationwide bank holiday was declared from March 6 until March 13, and the United States abandoned the international gold standard in April 1933. Recovery commenced immediately and the economy began its long path back to the pre-1929 secular growth trend.

Table 1 summarizes the drop in industrial production in the major economies of Western Europe and North America. Table 2 gives gross national product estimates for the United States from 1928 to 1941. The constant price series adjusts for inflation and deflation.

Table 1Indices of Total Industrial Production, 1927 to 1935 (1929 = 100)

	1927	1928	1929	1930	1931	1932	1933	1934	1935
Britain	95	94	100	94	86	89	95	105	114
Canada	85	94	100	91	78	68	69	82	90
France	84	94	100	99	85	74	83	79	77
Germany	95	100	100	86	72	59	68	83	96
Italy	87	99	100	93	84	77	83	85	99
Netherlands	87	94	100	109	101	90	90	93	95
Sweden	85	88	100	102	97	89	93	111	125
U.S.	85	90	100	83	69	55	63	69	79

Source: Industrial Statistics, 1900-57 (Paris, OEEC, 1958), Table 2.

Table 2
U.S. GNP at Constant (1929) and Current Prices, 1928-1941

Year	GNP at constant (1929) prices (billions of \$)	GNP at current prices (billions of \$)
1928	98.5	98.7
1929	104.4	104.6
1930	95.1	91.2
1931	89.5	78.5
1932	76.4	58.6
1933	74.2	56.1
1934	80.8	65.5
1935	91.4	76.5
1936	100.9	83.1

1937	109.1	91.2
1938	103.2	85.4
1939	111.0	91.2
1940	121.0	100.5
1941	131.7	124.7

Contemporary Explanations

The economics profession during the 1930s was at a loss to explain the Depression. The most prominent conventional explanations were of two types. First, some observers at the time firmly grounded their explanations on the two pillars of classical macroeconomic thought, Say's Law and the belief in the self-equilibrating powers of the market. Many argued that it was simply a question of time before wages and prices adjusted fully enough for the economy to return to full employment and achieve the realization of the putative axiom that "supply creates its own demand." Second, the Austrian school of thought argued that the Depression was the inevitable result of overinvestment during the 1920s. The best remedy for the situation was to let the Depression run its course so that the economy could be purified from the negative effects of the false expansion. Government intervention was viewed by the Austrian school as a mechanism that would simply prolong the agony and make any subsequent depression worse than it would ordinarily be (Hayek, 1966; Hayek, 1967).

Liquidationist Theory

The Hoover administration and the Federal Reserve Board also contained several so-called "liquidationists." These individuals basically believed that economic agents should be forced to rearrange their spending proclivities and alter their alleged profligate use of resources. If it took mass bankruptcies to produce this result and wipe the slate clean so that everyone could have a fresh start, then so be it. The liquidationists viewed the events of the Depression as an economic penance for the speculative excesses of the 1920s. Thus, the Depression was the price that was being paid for the misdeeds of the previous decade. This is perhaps best exemplified in the well-known quotation of Treasury Secretary Andrew Mellon, who advised President Hoover to "Liquidate labor, liquidate stocks, liquidate the farmers, liquidate real estate." Mellon continued, "It will purge the rottenness out of the system. High costs of living and high living will come down. People will work harder, live a more moral life. Values will be adjusted, and enterprising people will pick up the wrecks from less competent people" (Hoover, 1952). Hoover apparently followed this advice as the Depression wore on. He continued to reassure the public that if the principles of orthodox finance were faithfully followed, recovery would surely be the result.

The business press at the time was not immune from such liquidationist prescriptions either. The Commercial and Financial Chronicle, in an August 3, 1929 editorial entitled "Is Not Group Speculating Conspiracy, Fostering Sham Prosperity?" complained of the economy being replete with profligate spending including:

(a) The luxurious diversification of diet advantageous to dairy men ... and fruit growers ...; (b) luxurious dressing ... more silk and rayon ...; (c) free spending for automobiles and their accessories, gasoline, house furnishings and equipment, radios, travel, amusements and sports; (d) the displacement from the farms by tractors and autos of produce-consuming horses and mules to a number aggregating 3,700,000 for the period 1918–1928 ... (e) the frills of education to thousands for whom places might better be reserved at bench or counter or on the farm. (Quoted from Nelson, 1991)

Persons, in a paper which appeared in the November 1930 Quarterly Journal of Economics, demonstrates that some academic economists also held similar liquidationist views.

Although certainly not universal, the descriptions above suggest that no small part of the conventional wisdom at the time believed the Depression to be a penitence for past sins. In addition, it was thought that the economy would be restored to full employment equilibrium once wages and prices adjusted sufficiently. Say's Law will ensure the economy will return to health, and supply will create its own demand sufficient to return to prosperity, if we simply let the system work its way through. In his memoirs published in 1952, 20 years after his election defeat, Herbert Hoover continued to steadfastly maintain that if Roosevelt and the New Dealers would have stuck to the policies his administration put in place, the economy would have made a full recovery within 18 months after the election of 1932. We have to intensify our resolve to "stay the course." All will be well in time if we just "take our medicine." In hindsight, it challenges the imagination to think up worse policy prescriptions for the events of 1929–33.

Modern Explanations

There remains considerable debate regarding the economic explanations for the behavior of the business cycle between August 1929 and March 1933. This section describes the main hypotheses that have been presented in the literature attempting to explain the causes for the depth, protracted length, and worldwide propagation of the Great Depression.

The United States' experience, considering the preponderance of empirical results and historical simulations contained in the economic literature, can largely be accounted for by the monetary hypothesis of Friedman and Schwartz (1963) together with the nonmonetary/financial hypotheses of Bernanke (1983) and Fisher (1933). That is, most, but not all, of the characteristic phases of the business cycle and depth to which output fell from 1929 to 1933 can be accounted for by the monetary and nonmonetary/financial hypotheses. The international experience, well documented in Choudri and Kochin (1980), Hamilton (1988), Temin (1989), Bernanke and James (1991), and Eichengreen (1992), can be properly understood as resulting from a flawed interwar gold standard. Each of these hypotheses is explained in greater detail below.

Nonmonetary/Nonfinancial Theories

It should be noted that I do not include a section covering the nonmonetary/nonfinancial theories of the Great Depression. These theories, including Temin's (1976) focus on autonomous consumption decline, the collapse of housing construction contained in Anderson and Butkiewicz (1980), the effects of the stock market crash, the uncertainty hypothesis of Romer (1990), and the Smoot– Hawley Tariff Act of 1930, are all worthy of mention and can rightly be apportioned some of the responsibility for initiating the Depression. However, any theory of the Depression must be able to account for the protracted problems associated with the punishing deflation imposed on the United States and the world during that era. While the nonmonetary/nonfinancial theories go a long way accounting for the *impetus* for, and *first year* of the Depression, my reading of the empirical results of the economic literature indicates that they do not have the explanatory power of the three other theories mentioned above to account for the depths to which the economy plunged.

Moreover, recent research by Olney (1999) argues convincingly that the decline in consumption was not autonomous at all. Rather, the decline resulted because high consumer indebtedness threatened future consumption spending because default was expensive. Olney shows that households were shouldering an unprecedented burden of installment debt – especially for automobiles. In addition, down payments were large and contracts were short. Missed installment payments triggered repossession, reducing consumer wealth in 1930 because households lost all acquired equity. Cutting consumption was the only viable strategy in 1930 for avoiding default.

The Monetary Hypothesis

In reviewing the economic history of the Depression above, it was mentioned that the supply of money fell by 35 percent, prices dropped by about 33 percent, and one-third of all banks vanished. Milton Friedman and Anna Schwartz, in their 1963 book *A Monetary History of the United States, 1867–1960*, call this massive drop in the supply of money "The Great Contraction."

Friedman and Schwartz (1963) discuss and painstakingly document the synchronous movements of the real economy with the disruptions that occurred in the financial sector. They point out that the series of bank failures that occurred beginning in October 1930 worsened economic conditions in two ways. First, bank shareholder wealth was reduced as banks failed. Second, and most importantly, the bank failures were exogenous shocks and led to the drastic decline in the money supply. The persistent deflation of the 1930s follows directly from this "great contraction."

Criticisms of Fed Policy

However, this raises an important question: Where was the Federal Reserve while the money supply and the financial system were collapsing? If the Federal Reserve was created in 1913 primarily to be the "lender of last resort" for troubled financial institutions, it was failing miserably. Friedman and Schwartz pin the blame squarely on the Federal Reserve and the failure of monetary policy to offset the contractions in the money supply. As the money multiplier continued on its downward path, the monetary base, rather than being aggressively increased, simply progressed slightly upwards on a gently positive sloping time path. As banks were failing in waves, was the Federal Reserve attempting to contain the panics by aggressively lending to banks scrambling for liquidity? The unfortunate answer is "no." When the panics were occurring, was there discussion of suspending deposit convertibility or suspension of the gold standard, both of which had been successfully employed in the past? Again the unfortunate answer is "no." Did the Federal Reserve consider the fact that it had an abundant supply of free gold, and therefore that monetary expansion was feasible? Once again the unfortunate answer is "no." The argument can be summarized by the following quotation:

At all times throughout the 1929–33 contraction, alternative policies were available to the System by which it could have kept the stock of money from falling, and indeed could have increased it at almost any desired rate. Those policies did not involve radical innovations. They involved measures of a kind the System had taken in earlier years, of a kind explicitly contemplated by the founders of the System to meet precisely the kind of banking crisis that

developed in late 1930 and persisted thereafter. They involved measures that were actually proposed and very likely would have been adopted under a slightly different bureaucratic structure or distribution of power, or even if the men in power had had somewhat different personalities. Until late 1931 – and we believe not even then – the alternative policies involved no conflict with the maintenance of the gold standard. Until September 1931, the problem that recurrently troubled the System was how to keep the gold inflows under control, not the reverse. (Friedman and Schwartz, 1963)

The inescapable conclusion is that it was a failure of the policies of the Federal Reserve System in responding to the crises of the time that made the Depression as bad as it was. If monetary policy had responded differently, the economic events of 1929–33 need not have been as they occurred. This assertion is supported by the results of Fackler and Parker (1994). Using counterfactual historical simulations, they show that if the Federal Reserve had kept the M1 money supply growing along its pre-October 1929 trend of 3.3 percent annually, most of the Depression would have been averted. McCallum (1990) also reaches similar conclusions employing a monetary base feedback policy in his counterfactual simulations.

Lack of Leadership at the Fed

Friedman and Schwartz trace the seeds of these regrettable events to the death of Federal Reserve Bank of New York President Benjamin Strong in 1928. Strong's death altered the locus of power in the Federal Reserve System and left it without effective leadership. Friedman and Schwartz maintain that Strong had the personality, confidence and reputation in the financial community to lead monetary policy and sway policy makers to his point of view. Friedman and Schwartz believe that Strong would not have permitted the financial panics and liquidity crises to persist and affect the real economy. Instead, after Governor Strong died, the conduct of open market operations changed from a five-man committee dominated by the New York Federal Reserve to that of a 12-man committee of Federal Reserve Bank governors. Decisiveness in leadership was replaced by inaction and drift. Others (Temin, 1989; Wicker, 1965) reject this point, claiming the policies of the Federal Reserve in the 1930s were not inconsistent with the policies pursued in the decade of the 1920s.

The Fed's Failure to Distinguish between Nominal and Real Interest Rates

Meltzer (1976) also points out errors made by the Federal Reserve. His argument is that the Federal Reserve failed to distinguish between nominal and real interest rates. That is, while nominal rates were falling, the Federal Reserve did virtually nothing, since it construed this to be a sign of an "easy" credit market. However, in the face of deflation, real rates were rising and there was in fact a "tight" credit market. Failure to make this distinction led money to be a contributing factor to the initial decline of 1929.

Deflation

Cecchetti (1992) and Nelson (1991) bolster the monetary hypothesis by demonstrating that the deflation during the Depression was anticipated at short horizons, once it was under way. The result, using the Fisher equation, is that high ex ante real interest rates were the transmission mechanism that led from falling prices to falling output. In addition, Cecchetti (1998) and Cecchetti and Karras (1994) argue that if the lower bound of the nominal interest rate is reached, then continued deflation renders the opportunity cost of holding money negative. In this instance the nature of money

changes. Now the rate of deflation places a floor on the real return nonmoney assets must provide to make them attractive to hold. If they cannot exceed the rate on money holdings, then agents will move their assets into cash and the result will be negative net investment and a decapitalization of the economy.

Critics of the Monetary Hypothesis

The monetary hypothesis, however, is not without its detractors. Paul Samuelson observes that the monetary base did not fall during the Depression. Moreover, expecting the Federal Reserve to have aggressively increased the monetary base by whatever amount was necessary to stop the decline in the money supply is hindsight. A course of action for monetary policy such as this was beyond the scope of discussion prevailing at the time. In addition, others, like Moses Abramovitz, point out that the money supply had endogenous components that were beyond the Federal Reserve's ability to control. Namely, the money supply may have been falling as a result of declining economic activity, or so-called "reverse causation." Moreover the gold standard, to which the United States continued to adhere until March 1933, also tied the hands of the Federal Reserve in so far as gold outflows that occurred required the Federal Reserve to contract the supply of money. These views are also contained in Temin (1989) and Eichengreen (1992), as discussed below.

Bernanke (1983) argues that the monetary hypothesis: (i) is not a complete explanation of the link between the financial sector and aggregate output in the 1930s; (ii) does not explain how it was that decreases in the money supply caused output to keep falling over many years, especially since it is widely believed that changes in the money supply only change prices and other nominal economic values in the long run, not real economic values like output ; and (iii) is quantitatively insufficient to explain the depth of the decline in output. Bernanke (1983) not only resurrected and sharpened Fisher's (1933) debt deflation hypothesis, but also made further contributions to what has come to be known as the nonmonetary/financial hypothesis.

The Nonmonetary/Financial Hypothesis

Bernanke (1983), building on the monetary hypothesis of Friedman and Schwartz (1963), presents an alternative interpretation of the way in which the financial crises may have affected output. The argument involves both the effects of debt deflation and the impact that bank panics had on the ability of financial markets to efficiently allocate funds from lenders to borrowers. These nonmonetary/financial theories hold that events in financial markets other than shocks to the money supply can help to account for the paths of output and prices during the Great Depression.

Fisher (1933) asserted that the dominant forces that account for "great" depressions are (nominal) over-indebtedness and deflation. Specifically, he argued that real debt burdens were substantially increased when there were dramatic declines in the price level and nominal incomes. The combination of deflation, falling nominal income and increasing real debt burdens led to debtor insolvency, lowered aggregate demand, and thereby contributed to a continuing decline in the price level and thus further increases in the real burden of debt.

The "Credit View"

Bernanke (1983), in what is now called the "credit view," provided additional details to help explain Fisher's debt deflation hypothesis. He argued that in normal circumstances, an initial decline in prices merely reallocates wealth from debtors to creditors, such as banks. Usually, such wealth

redistributions are minor in magnitude and have no first-order impact on the economy. However, in the face of large shocks, deflation in the prices of assets forfeited to banks by debtor bankruptcies leads to a decline in the nominal value of assets on bank balance sheets. For a given value of bank liabilities, also denominated in nominal terms, this deterioration in bank assets threatens insolvency. As banks reallocate away from loans to safer government securities, some borrowers, particularly small ones, are unable to obtain funds, often at any price. Further, if this reallocation is long-lived, the shortage of credit for these borrowers helps to explain the persistence of the downturn. As the disappearance of bank financing forces lower expenditure plans, aggregate demand declines, which again contributes to the downward deflationary spiral. For debt deflation to be operative, it is necessary to demonstrate that there was a substantial build-up of debt prior to the onset of the Depression and that the deflation of the 1930s was at least partially unanticipated at medium- and long-term horizons at the time that the debt was being incurred. Both of these conditions appear to have been in place (Fackler and Parker, 2001; Hamilton, 1992; Evans and Wachtel, 1993).

The Breakdown in Credit Markets

In addition, the financial panics which occurred hindered the credit allocation mechanism. Bernanke (1983) explains that the process of credit intermediation requires substantial information gathering and non-trivial market-making activities. The financial disruptions of 1930-33 are correctly viewed as substantial impediments to the performance of these services and thus impaired the efficient allocation of credit between lenders and borrowers. That is, financial panics and debtor and business bankruptcies resulted in a increase in the real cost of credit intermediation. As the cost of credit intermediation increased, sources of credit for many borrowers (especially households, farmers and small firms) became expensive or even unobtainable at any price. This tightening of credit put downward pressure on aggregate demand and helped turn the recession of 1929-30 into the Great Depression. The empirical support for the validity of the nonmonetary/financial hypothesis during the Depression is substantial (Bernanke, 1983; Fackler and Parker, 1994, 2001; Hamilton, 1987, 1992), although support for the "credit view" for the transmission mechanism of monetary policy in post-World War II economic activity is substantially weaker. In combination, considering the preponderance of empirical results and historical simulations contained in the economic literature, the monetary hypothesis and the nonmonetary/financial hypothesis go a substantial distance toward accounting for the economic experiences of the United States during the Great Depression.

The Role of Pessimistic Expectations

To this combination, the behavior of expectations should also be added. As explained by James Tobin, there was another reason for a "change in the character of the contraction" in 1931. Although Friedman and Schwartz attribute this "change" to the bank panics that occurred, Tobin points out that change also took place because of the emergence of pessimistic expectations. If it was thought that the early stages of the Depression were symptomatic of a recession that was not different in kind from similar episodes in our economic history, and that recovery was a real possibility, the public need not have had pessimistic expectations. Instead the public may have anticipated things would get better. However, after the British left the gold standard, expectations changed in a very pessimistic way. The public may very well have believed that the business cycle downturn was not going to be reversed, but rather was going to get worse than it was. When households and business investors begin to make plans based on the economy getting worse instead of making plans based on anticipations of recovery, the depressing economic effects on consumption and investment of this

switch in expectations are common knowledge in the modern macroeconomic literature. For the literature on the Great Depression, the empirical research conducted on the expectations hypothesis focuses almost exclusively on uncertainty (which is not the same thing as pessimistic/optimistic expectations) and its contribution to the onset of the Depression (Romer, 1990; Flacco and Parker, 1992). Although Keynes (1936) writes extensively about the state of expectations and their economic influence, the literature is silent regarding the empirical validity of the expectations hypothesis in 1931–33. Yet, in spite of this, the continued shocks that the United States' economy received demonstrated that the business cycle downturn of 1931–33 was of a different kind than had previously been known. Once the public believed this to be so and made their plans accordingly, the results had to have been economically devastating. There is no formal empirical confirmation and I have not segregated the expectations hypothesis as a separate hypothesis in the overview. However, the logic of the above argument compels me to be of the opinion that the expectations hypothesis provides an impressive addition to the monetary hypothesis and the nonmonetary/financial hypothesis in accounting for the economic experiences of the United States during the Great Depression.

The Gold Standard Hypothesis

Recent research on the operation of the interwar gold standard has deepened our understanding of the Depression and its international character. The way and manner in which the interwar gold standard was structured and operated provide a convincing explanation of the international transmission of deflation and depression that occurred in the 1930s.

The story has its beginning in the 1870–1914 period. During this time the gold standard functioned as a pegged exchange rate system where certain rules were observed. Namely, it was necessary for countries to permit their money supplies to be altered in response to gold flows in order for the price-specie flow mechanism to function properly. It operated successfully because countries that were gaining gold allowed their money supply to increase and raise the domestic price level to restore equilibrium and maintain the fixed exchange rate of their currency. Countries that were losing gold were obligated to permit their money supply to decrease and generate a decline in their domestic price level to restore equilibrium and maintain the fixed exchange rate of their currency. Eichengreen (1992) discusses and extensively documents that the gold standard of this period functioned as smoothly as it did because of the international commitment countries had to the gold standard and the level of international cooperation exhibited during this time. "What rendered the commitment to the gold standard credible, then, was that the commitment was international, not merely national. That commitment was activated through international cooperation" (Eichengreen, 1992).

The gold standard was suspended when the hostilities of World War I broke out. By the end of 1928, major countries such as the United States, the United Kingdom, France and Germany had reestablished ties to a functioning fixed exchange rate gold standard. However, Eichengreen (1992) points out that the world in which the gold standard functioned before World War I was not the same world in which the gold standard was being re-established. A credible commitment to the gold standard, as Hamilton (1988) explains, required that a country maintain fiscal soundness and political objectives that insured the monetary authority could pursue a monetary policy consistent with long-run price stability and continuous convertibility of the currency. Successful operation required these conditions to be in place before re-establishment of the gold standard was operational. However, many governments during the interwar period went back on the gold standard in the opposite set of circumstances. They re-established ties to the gold standard because they were incapable, due to the political chaos generated after World War I, of fiscal soundness and did not have political objectives conducive to reforming monetary policy such that it could insure long-run price stability. "By this criterion, returning to the gold standard could not have come at a worse time or for poorer reasons" (Hamilton, 1988). Kindleberger (1973) stresses the fact that the pre-World War I gold standard functioned as well as it did because of the unquestioned leadership exercised by Great Britain. After World War I and the relative decline of Britain, the United States did not exhibit the same strength of leadership Britain had shown before. The upshot is that it was an unsuitable environment in which to re-establish the gold standard after World War I and the interwar gold standard was destined to drift in a state of malperformance as no one took responsibility for its proper functioning. However, the problems did not end there.

Flaws in the Interwar International Gold Standard

Lack of Symmetry in the Response of Gold-Gaining and Gold-Losing Countries

The interwar gold standard operated with four structural/technical flaws that almost certainly doomed it to failure (Eichengreen, 1986; Temin, 1989; Bernanke and James, 1991). The first, and most damaging, was the lack of symmetry in the response of gold-gaining countries and gold-losing countries that resulted in a deflationary bias that was to drag the world deeper into deflation and depression. If a country was losing gold reserves, it was required to decrease its money supply to maintain its commitment to the gold standard. Given that a minimum gold reserve had to be maintained and that countries became concerned when the gold reserve fell within 10 percent of this minimum, little gold could be lost before the necessity of monetary contraction, and thus deflation, became a reality. Moreover, with a fractional gold reserve ratio of 40 percent, the result was a decline in the domestic money supply equal to 2.5 times the gold outflow. On the other hand, there was no such constraint on countries that experienced gold inflows. Gold reserves were accumulated without the binding requirement that the domestic money supply be expanded. Thus the price-specie flow mechanism ceased to function and the equilibrating forces of the pre-World War I gold standard were absent during the interwar period. If a country attracting gold reserves were to embark on a contractionary path, the result would be the further extraction of gold reserves from other countries on the gold standard and the imposition of deflation on their economies as well, as they were forced to contract their money supplies. "As it happened, both of the two major gold surplus countries – France and the United States, who at the time together held close to 60 percent of the world's monetary gold - took deflationary paths in 1928–1929" (Bernanke and James, 1991).

Foreign Exchange Reserves

Second, countries that did not have reserve currencies could hold their minimum reserves in the form of both gold and convertible foreign exchange reserves. If the threat of devaluation of a reserve currency appeared likely, a country holding foreign exchange reserves could divest itself of the foreign exchange, as holding it became a more risky proposition. Further, the convertible reserves were usually only fractionally backed by gold. Thus, if countries were to prefer gold holdings as opposed to foreign exchange reserves for whatever reason, the result would be a contraction in the world money supply as reserves were destroyed in the movement to gold. This effect can be thought of as equivalent to the effect on the domestic money supply in a fractional reserve banking system of a shift in the public's money holdings toward currency and away from bank deposits.

The Bank of France and Open Market Operations

Third, the powers of many European central banks were restricted or excluded outright. In particular, as discussed by Eichengreen (1986), the Bank of France was prohibited from engaging in open market operations, i.e. the purchase or sale of government securities. Given that France was one of the countries amassing gold reserves, this restriction largely prevented them from adhering to the rules of the gold standard. The proper response would have been to expand their supply of money and inflate so as not to continue to attract gold reserves and impose deflation on the rest of the world. This was not done. France continued to accumulate gold until 1932 and did not leave the gold standard until 1936.

Inconsistent Currency Valuations

Lastly, the gold standard was re-established at parities that were unilaterally determined by each individual country. When France returned to the gold standard in 1926, it returned at a parity rate that is believed to have undervalued the franc. When Britain returned to the gold standard in 1925, it returned at a parity rate that is believed to have overvalued the pound. In this situation, the only sustainable equilibrium required the French to inflate their economy in response to the gold inflows. However, given their legacy of inflation during the 1921–26 period, France steadfastly resisted inflation (Eichengreen, 1986). The maintenance of the gold standard and the resistance to inflation were now inconsistent policy objectives. The Bank of France's inability to conduct open market operations only made matters worse. The accumulation of gold and the exporting of deflation to the world was the result.

The Timing of Recoveries

Taken together, the flaws described above made the interwar gold standard dysfunctional and in the end unsustainable. Looking back, we observe that the record of departure from the gold standard and subsequent recovery was different for many different countries. For some countries recovery came sooner. For some it came later. It is in this timing of departure from the gold standard that recent research has produced a remarkable empirical finding. From the work of Choudri and Kochin (1980), Eichengreen and Sachs (1985), Temin (1989), and Bernanke and James (1991), we now know that the sooner a country abandoned the gold standard, the quicker recovery commenced. Spain, which never restored its participation in the gold standard, missed the ravages of the Depression altogether. Britain left the gold standard in September 1931, and started to recover. Sweden left the gold standard at the same time as Britain, and started to recover. The United States left in March 1933, and recovery commenced. France, Holland, and Poland continued to have their economies struggle after the United States' recovery began as they continued to adhere to the gold standard until 1936. Only after they left did recovery start; departure from the gold standard freed a country from the ravages of deflation.

The Fed and the Gold Standard: The "Midas Touch"

Temin (1989) and Eichengreen (1992) argue that it was the unbending commitment to the gold standard that generated deflation and depression worldwide. They emphasize that the gold standard required fiscal and monetary authorities around the world to submit their economies to internal adjustment and economic instability in the face of international shocks. Given how the gold standard tied countries together, if the gold parity were to be defended and devaluation was not an option,

unilateral monetary actions by any one country were pointless. The end result is that Temin (1989) and Eichengreen (1992) reject Friedman and Schwartz's (1963) claim that the Depression was caused by a series of policy failures on the part of the Federal Reserve. Actions taken in the United States, according to Temin (1989) and Eichengreen (1992), cannot be properly understood in isolation with respect to the rest of the world. If the commitment to the gold standard was to be maintained, monetary and fiscal authorities worldwide had little choice in responding to the crises of the Depression. Why did the Federal Reserve continue a policy of inaction during the banking panics? Because the commitment to the gold standard, what Temin (1989) has labeled "The Midas Touch," gave them no choice but to let the banks fail. Monetary expansion and the injection of liquidity would lower interest rates, lead to a gold outflow, and potentially be contrary to the rules of the gold standard. Continued deflation due to gold outflows would begin to call into guestion the monetary authority's commitment to the gold standard. "Defending gold parity might require the authorities to sit idly by as the banking system crumbled, as the Federal Reserve did at the end of 1931 and again at the beginning of 1933" (Eichengreen, 1992). Thus, if the adherence to the gold standard were to be maintained, the money supply was endogenous with respect to the balance of payments and beyond the influence of the Federal Reserve.

Eichengreen (1992) concludes further that what made the pre-World War I gold standard so successful was absent during the interwar period: credible commitment to the gold standard activated through international cooperation in its implementation and management. Had these important ingredients of the pre-World War I gold standard been present during the interwar period, twentieth-century economic history may have been very different.

Recovery and the New Deal

March 1933 was the rock bottom of the Depression and the inauguration of Franklin D. Roosevelt represented a sharp break with the status quo. Upon taking office, a bank holiday was declared, the United States left the interwar gold standard the following month, and the government commenced with several measures designed to resurrect the financial system. These measures included: (i) the establishment of the Reconstruction Finance Corporation which set about funneling large sums of liquidity to banks and other intermediaries; (ii) the Securities Exchange Act of 1934 which established margin requirements for bank loans used to purchase stocks and bonds and increased information requirements to potential investors; and (iii) the Glass–Steagal Act which strictly separated commercial banking and investment banking. Although delivering some immediate relief to financial markets, lenders continued to be reluctant to extend credit after the events of 1929–33, and the recovery of financial markets was slow and incomplete. Bernanke (1983) estimates that the United States' financial system did not begin to shed the inefficiencies under which it was operating until the end of 1935.

The NIRA

Policies designed to promote different economic institutions were enacted as part of the New Deal. The National Industrial Recovery Act (NIRA) was passed on June 6, 1933 and was designed to raise prices and wages. In addition, the Act mandated the formation of planning boards in critical sectors of the economy. The boards were charged with setting output goals for their respective sector and the usual result was a restriction of production. In effect, the NIRA was a license for industries to form cartels and was struck down as unconstitutional in 1935. The Agricultural Adjustment Act of 1933 was similar legislation designed to reduce output and raise prices in the farming sector. It too was ruled unconstitutional in 1936.

Relief and Jobs Programs

Other policies intended to provide relief directly to people who were destitute and out of work were rapidly enacted. The Civilian Conservation Corps (CCC), the Tennessee Valley Authority (TVA), the Public Works Administration (PWA) and the Federal Emergency Relief Administration (FERA) were set up shortly after Roosevelt took office and provided jobs for the unemployed and grants to states for direct relief. The Civil Works Administration (CWA), created in 1933–34, and the Works Progress Administration (WPA), created in 1935, were also designed to provide work relief to the jobless. The Social Security Act was also passed in 1935. There surely are other programs with similar acronyms that have been left out, but the intent was the same. In the words of Roosevelt himself, addressing Congress in 1938:

Government has a final responsibility for the well-being of its citizenship. If private co-operative endeavor fails to provide work for the willing hands and relief for the unfortunate, those suffering hardship from no fault of their own have a right to call upon the Government for aid; and a government worthy of its name must make fitting response. (Quoted from Polenberg, 2000)

The Depression had shown the inaccuracies of classifying the 1920s as a "new era." Rather, the "new era," as summarized by Roosevelt's words above and initiated in government's involvement in the economy, began in March 1933.

The NBER business cycle chronology shows continuous growth from March 1933 until May 1937, at which time a 13-month recession hit the economy. The business cycle rebounded in June 1938 and continued on its upward march to and through the beginning of the United States' involvement in World War II. The recovery that started in 1933 was impressive, with real GNP experiencing annual rates of the growth in the 10 percent range between 1933 and December 1941, excluding the recession of 1937–38 (Romer, 1993). However, as reported by Romer (1993), real GNP did not return to its pre-Depression level until 1937 and real GNP did not catch up to its pre-Depression secular trend until 1942. Indeed, the unemployment rate, peaking at 25 percent in March 1933, continued to dwell near or above the double-digit range until 1940. It is in this sense that most economists attribute the ending of the Depression to the onset of World War II. The War brought complete recovery as the unemployment rate quickly plummeted after December 1941 to its nadir during the War of below 2 percent.

Explanations for the Pace of Recovery

The question remains, however, that if the War completed the recovery, what initiated it and sustained it through the end of 1941? Should we point to the relief programs of the New Deal and the leadership of Roosevelt? Certainly, they had psychological/expectational effects on consumers and investors and helped to heal the suffering experienced during that time. However, as shown by Brown (1956), Peppers (1973), and Raynold, McMillin and Beard (1991), fiscal policy contributed little to the recovery, and certainly could have done much more.

Once again we return to the financial system for answers. The abandonment of the gold standard, the impact this had on the money supply, and the deliverance from the economic effects of deflation

would have to be singled out as the most important contributor to the recovery. Romer (1993) stresses that Eichengreen and Sachs (1985) have it right; recovery did not come before the decision to abandon the old gold parity was made operational. Once this became reality, devaluation of the currency permitted expansion in the money supply and inflation which, rather than promoting a policy of beggar-thy-neighbor, allowed countries to escape the deflationary vortex of economic decline. As discussed in connection with the gold standard hypothesis, the simultaneity of leaving the gold standard and recovery is a robust empirical result that reflects more than simple temporal coincidence.

Romer (1993) reports an increase in the monetary base in the United States of 52 percent between April 1933 and April 1937. The M1 money supply virtually matched this increase in the monetary base, with 49 percent growth over the same period. The sources of this increase were two-fold. First, aside from the immediate monetary expansion permitted by devaluation, as Romer (1993) explains, monetary expansion continued into 1934 and beyond as gold flowed to the United States from Europe due to the increasing political unrest and heightened probability of hostilities that began the progression to World War II. Second, the increase in the money supply matched the increase in the monetary expansion resulted from policy decisions and not endogenous changes in the money multiplier. The new regime was freed from the constraints of the gold standard and the policy makers were intent on taking actions of a different nature than what had been done between 1929 and 1933.

Incompleteness of the Recovery before WWII

The Depression had turned a corner and the economy was emerging from the abyss in 1933. However, it still had a long way to go to reach full recovery. Friedman and Schwartz (1963) comment that "the most notable feature of the revival after 1933 was not its rapidity but its incompleteness." They claim that monetary policy and the Federal Reserve were passive after 1933. The monetary authorities did nothing to stop the fall from 1929 to 1933 and did little to promote the recovery. The Federal Reserve made no effort to increase the stock of high-powered money through the use of either open market operations or rediscounting; Federal Reserve credit outstanding remained "almost perfectly constant from 1934 to mid-1940" (Friedman and Schwartz, 1963). As we have seen above, it was the Treasury that was generating increases in the monetary base at the time by issuing gold certificates equal to the amount of gold reserve inflow and depositing them at the Federal Reserve. When the government spent the money, the Treasury swapped the gold certificates for Federal Reserve notes and this expanded the monetary base (Romer, 1993). Monetary policy was thought to be powerless to promote recovery, and instead it was fiscal policy that became the implement of choice. The research shows that fiscal policy could have done much more to aid in recovery ironically fiscal policy was the vehicle that was now the focus of attention. There is an easy explanation for why this is so.

The Emergences of Keynes

The economics profession as a whole was at a loss to provide cogent explanations for the events of 1929–33. In the words of Robert Gordon (1998), "economics had lost its intellectual moorings, and it was time for a new diagnosis." There were no convincing answers regarding why the earlier theories of macroeconomic behavior failed to explain the events that were occurring, and worse, there was no set of principles that established a guide for proper actions in the future. That changed in 1936 with

the publication of Keynes's book *The General Theory of Employment, Interest and Money.* Perhaps there has been no other person and no other book in economics about which so much has been written. Many consider the arrival of Keynesian thought to have been a "revolution," although this too is hotly contested (see, for example, Laidler, 1999). The debates that *The General Theory* generated have been many and long-lasting. There is little that can be said here to add or subtract from the massive literature devoted to the ideas promoted by Keynes, whether they be viewed right or wrong. But the influence over academic thought and economic policy that was generated by *The General Theory* is not in doubt.

The time was right for a set of ideas that not only explained the Depression's course of events, but also provided a prescription for remedies that would create better economic performance in the future. Keynes and *The General Theory*, at the time the events were unfolding, provided just such a package. When all is said and done, we can look back in hindsight and argue endlessly about what Keynes "really meant" or what the "true" contribution of Keynesianism has been to the world of economics. At the time the Depression happened, Keynes represented a new paradigm for young scholars to latch on to. The stage was set for the nurturing of macroeconomics for the remainder of the twentieth century.

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1 Bankers' acceptances are explained at http://www.rich.frb.org/pubs/instruments/ch10.html.

2 Liquidity is the ease of converting an asset into money.

3 The monetary base is measured as the sum of currency in the hands of the public plus reserves in the banking system. It is also called high-powered money since the monetary base is the quantity that gets multiplied into greater amounts of money supply as banks make loans and people spend and thereby create new bank deposits.

4 The money multiplier equals [D/R*(1 + D/C)]/(D/R + D/C + D/E), where

D = deposits, R = reserves, C = currency and E = excess reserves in the

banking system.

5 The real interest rate adjusts the observed (nominal) interest rate for inflation or deflation. Ex post refers to the real interest rate after the actual change in prices has been observed; ex ante refers to the real interest rate that is expected at the time the lending occurs.

6 See note 3.

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