The Great Depression[1]

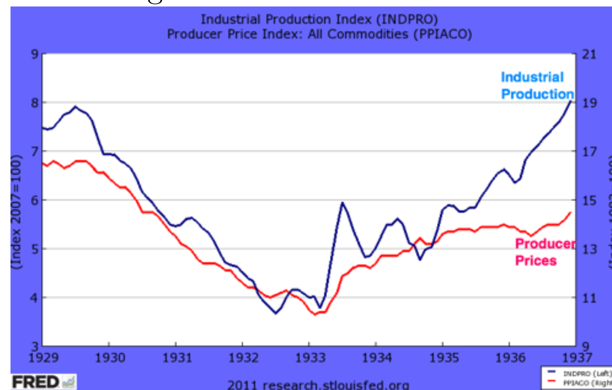
The Great Depression is certainly the worst macroeconomic calamity to strike the United States since the Civil War. Before discussing the events leading to the Great Depression, we begin by considering some simple statistics for the United States that describe the scope of the downturn.

1. Unemployment rose to 25% by 1933%.

2. Aggregate output fell by about 30% between 1929 and 1933.

3. Prices fell by about $\frac{1}{3}$ over the same time.

Figure 1: U.S. PPI and GDP



These numbers dwarf those of any subsequent macroeconomic downturn, including the Great Recession. The causes of the Great Depression remain somewhat controversial. The following series of events provide a monetarist perspective and describe a series of adverse events that led to the Depression.

The Stock Market Crash of 1929

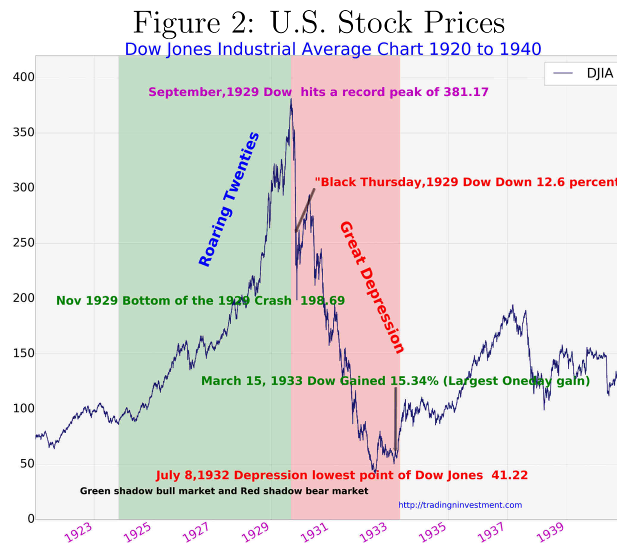
This stock market crash is often equated as being the catalyst of the Great Depression in popular memory. There is some truth in this. The stock market crash appears to coincide (and at least partially cause) an economic downturn that was severe but conventional. But without

[1]These are undergraduate lecture notes. They do not represent academic work. Expect typos, sloppy formatting, and occasional (possibly stupefying) errors.

subsequent events in the banking sector, it would never had become an event on the order of the Great Depression.

Speculative bubbles are among the most common causes of economic downturns. These represent periods where asset prices become artificially high as savers come to expect high returns instead of focusing on the assets' fundamentals (*e.g* dividends for stocks). The Great Recession was preceded by a housing bubble. A bubble in technology stocks preceded a recession around 2000. It appears that stocks were subject to a bubble into 1929 with valuations inconsistent with their earnings. At the same time, the 1920s were characterized by a dramatic expansion of credit that has led some to discuss a "credit bubble." The following chart shows the rise and fall of stock prices in the United States.

Figure 2: U.S. Stock Prices



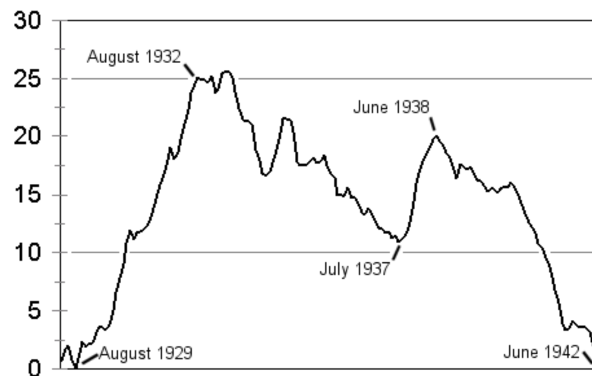
Stock prices peaked in August 1929 at 382 (Dow Jones). After this, they began a steady but unremarkable decline into October 1929. October 24 is known as "Black Thursday." On that date, prices fell by about 11%. The following week had "Black Monday" and "Black Tuesday" which each encompassed similar prices drops. Although there would be short lived recoveries, this began a general stock market crash that would bottom out in July 1932 at a price of 41, an extraordinary decline of almost 90%. Stocks would not reach their previous peak until 1954.

The stock market crash often dates the start of the Great Depression. And it was followed by a decline in prices and output, and a rise in unemployment that would bottom out in 1932 or 1933. But the stock market crash did not make the Great Depression inevitable. It was instead the first of a series of events that would usher the Great Depression in. It did not lead to an

immediate panic beyond the stock market. The New York Fed stepped in to provide liquidity to troubled firms through its discount window. Its actions were an effective application of its role of lender of last resort. Private households supplied liquidity in a manner not dissimilar to what was seen in 1907.

The stock market crash did, however, help cause the emerging economic downturn. It did so in a way that was consistent with our earlier analysis of credit crises. The decline in stock prices led to a decline in wealth which then reduced consumption and investment. This was then amplified by a decline in access to credit as potential borrowers were less credit worthy due to their declining wealth. Unemployment began to rise soon after the crash. The following chart shows the U.S. U-3 rate.[2]

Figure 3: U.S. Unemployment



The Collapse of the Money Supply

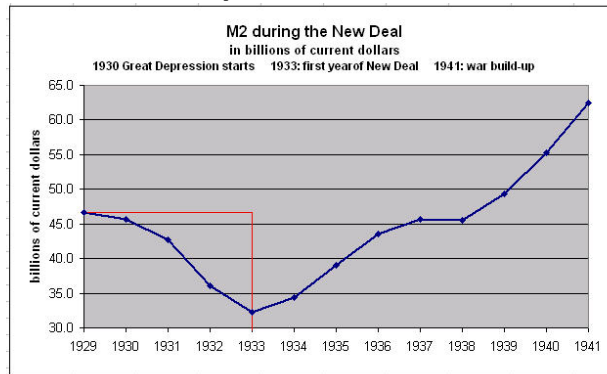
A critical component of the Great Depression was the collapse of the money supply between 1929 and 1933. Friedman and Schwartz in their 1963 landmark *Monetary History of the United States* estimate that M2 declined by 31%.[3]

Numerous factors contributed the the collapse of the money supply. We consider the most important.

1. Bank failures. Declining economic conditions induced higher default rates and caused banks to take losses on the loans that they had made. This caused many banks to become insolvent

[2]nhegewaldapush.weebly.com
[3]Chart taken from www.americanthinker.com.

Figure 4: U.S. M2



and vulnerable to failure. The first wave of bank failures in the United States occurred in 1930 when banks with deposits of about $450 million failed. The most prominent was the Bank of the United States with $200 million. Although just a commercial bank, not a Central Bank, its name and size seemed to convey special importance.

It is not the case that banks that failed saw all of their customers' deposits wiped out. For the Bank of the United States, Friedman and Schwartz (1963) report that customer's recouped 83.5% of their deposits. But this is still a large loss and a decline in the money supply. It is understandable that in an era without deposit insurance, customers became concerned with the solvency of other banks.

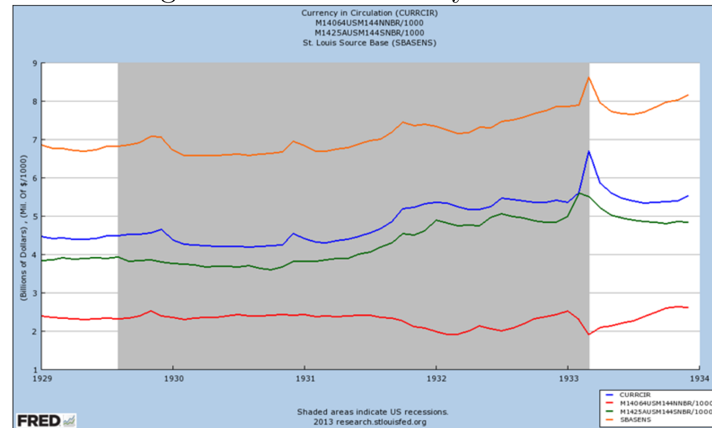
In some ways the bank failures that started in 1930 are similar to those of the Financial Crisis in 2008. In the former, commercial banks, those that take deposits, were primarily affected. In the latter, it was more on the investment banking side. But in both cases, deposit insurance did not apply, the FDIC which currently insures commercial bank deposits was not formed until 1932.

Subsequent banking failures would occur in large numbers every year through 1933. Ultimately about 40% of commercial banks holding about 33% of U.S. deposits failed. With them went much of the U.S. money supply.

2. Bank runs. If depositors are afraid of bank failures, it is sensible that they withdraw their deposits. Thus although the money supply was collapsing, cash was increasing dramatically as customers converted from bank deposits to cash.

Both cash and deposits are part of the money supply. So this switch does not directly affect the money supply. But reduced deposits limit banks ability to lend. This reduces the money multiplier and the money supply.

Figure 5: U.S. Monetary Measures



In 1931, The U.K. removed itself from the gold standard. This policy, likely very beneficial, produced speculation that other economies including the United States would devalue their currencies or also abandon gold. As a result, there was increased demand for converting deposits into gold, further reducing the money supply. Recall that each Regional Fed was required to hold a certain amount of gold. The New York Fed would fall below this legal limit and would have to be granted a 30-day emergency exemption.

3. Contractionary monetary policy. You might expect that given the circumstances, the Federal reserve would have responded with an expansionary monetary policy that sought to offset the decline in the money supply. This did not happen. The Fed engaged in only limited open market purchases and thus did little to abort the decline in the money supply.

The Fed's main motivation for pursuing this policy was its desire to defend the gold standard. This required that they raised interest rates (which slows the growth of the monetary base) in order to boost the return on deposits and thus discourage depositors from converting more dollars into gold. The Fed raised discount rates twice. It only began a tepid program of open market purchases in April 1932. Friedman and Schwartz (1963) argue that this program was half hearted and that many Fed Regional Presidents would have preferred to not engage in it at all. Modern analysis also often accuses the Fed of having engaged in only limited emergency lending.

Friedman and Schwartz (1963) title a Chapter "Why Was Monetary Policy So Inept." They argue that the Fed suffered from weak leadership, especially the more isolated districts. They maintain that the Fed failed to understand the crisis and even succumbed to the belief that it was needed to eliminate previous inefficiencies from the economy. They further claim that the

contemporary state of economics was advanced enough that better leaders should have been able to do a better job.

> The actions required to prevent monetary collapse did not call for a level of knowledge of the operation of the banking system or the workings of monetary forces or of economic fluctuations which was developed only later and was not available to the Reserve System. On the contrary, as we have pointed out earlier, pursuit of the polices outlined by the System in the 1920's, or for that matter by Bagehot in 1873, would have prevented the catastrophe.

In 2004, Ben Bernanke, soon to be Chairman of the Federal Reserve, agreed that the Fed fucked up.[4]

> The Federal Reserve had the power at least to ameliorate the problems of the banks. For example, the Fed could have been more aggressive in lending cash to banks (taking their loans and other investments as collateral), or it could have simply put more cash in circulation. Either action would have made it easier for banks to obtain the cash necessary to pay off depositors, which might have stopped bank runs before they resulted in bank closings and failures. Indeed, a central element of the Federal Reserve's original mission had been to provide just this type of assistance to the banking system. The Fed's failure to fulfill its mission was, again, largely the result of the economic theories held by the Federal Reserve leadership. Many Fed officials appeared to subscribe to the infamous "liquidationist" thesis of Treasury Secretary Andrew Mellon, who argued that weeding out "weak""banks was a harsh but necessary prerequisite to the recovery of the banking system. Moreover, most of the failing banks were relatively small and not members of the Federal Reserve System, making their fate of less interest to the policymakers. In the end, Fed officials decided not to intervene in the banking crisis, contributing once again to the precipitous fall in the money supply.

The contemporary defense of the Federal Reserve is that tight monetary policy was needed to defend the gold standard, which was legislated by Congress. Friedman and Schwartz (1963) are dismissive and conclude that the Fed had enough gold to sustain aggressive open market purchases for an extended period of time. They also note that the first Glass Steagall Act in

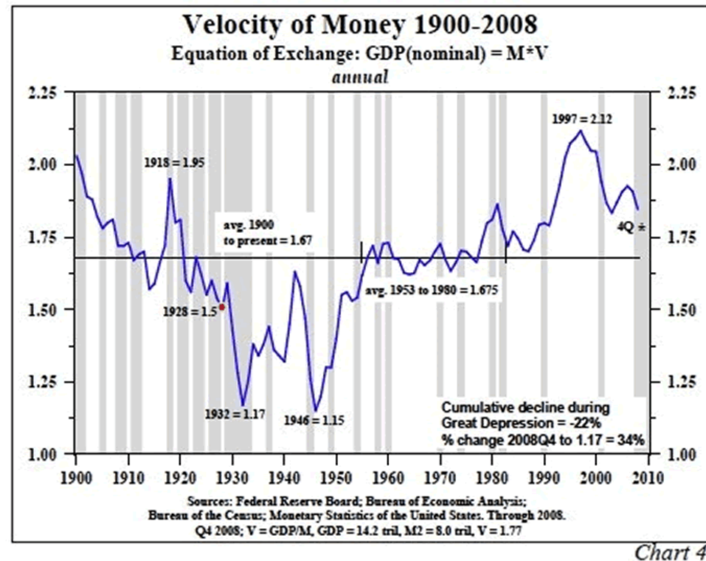
[4]Remarks by Governor Ben S. Bernanke At the H. Parker Willis Lecture in Economic Policy, Washington and Lee University, Lexington, Virginia, March 2, 2004. "Money, Gold, and the Great Depression."

1932 allowed the Fed to temporarily go below its mandated currency to gold ratio. The Fed did not, however, immediately do so. It instead began some more aggressive open market purchases because it felt pressured by Congress with the threat of subsequent legislation.

Debt-Deflation

Irving Fisher's theory of debt-deflation originated as an attempt to explain the Great Depression. In my opinion, it remains the best explanation for how the banking crisis propagated so atrociously. In addition to the decline in the money supply, the Great Depression also exhibited a major decline in velocity.[5]

Figure 6: U.S. Velocity



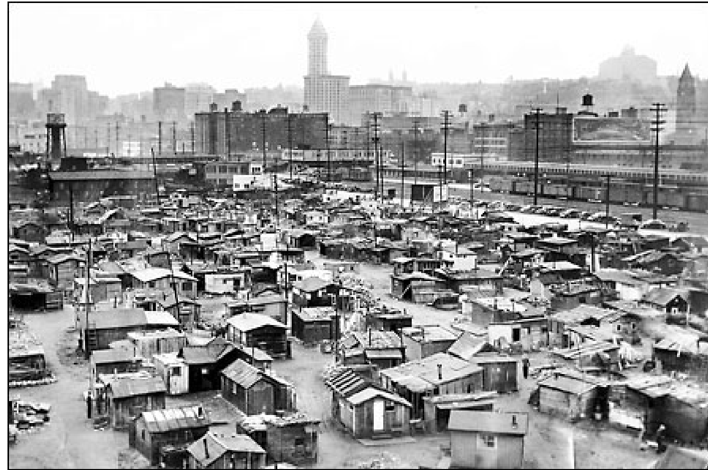
According to Fisher, the large reduction in MV created the deflationary spiral (decline in PY), that was the Great Depression. Deflation beget lower output through increased real debt burdens and high real interest rates. This reduced demand which beget more deflation...

The misery of the Great Depression is hard to understate. Unemployment reached record heights. Foreclosures rose dramatically. Homelessness increased. By almost any metric, the Great Recession was far worse than any other economic downturn in American history. "Hoovervilles," a type of slum sprung up throughout the country.

Other Policy Errors

[5]Source: www.marketoracle.co.uk

Figure 7: Hooverville



Although our focus is on the Central Bank's mistakes, it is worth pointing out that other policy makers made numerous errors. The fiscal policy response was botched. Although the Hoover Administration was able to increase spending on relief measures, the overall increase in government spending was limited. Friedman and Schwartz (1963) note that larger increases were vigorously opposed because, despite the crippling deflation, they would be "inflationary." A similar obliviousness would manifest itself in 2009 when fiscal stimulus was debated in response to the Great Recession. Additionally, balanced budgets were almost a moral issue, Through 1932, politicians in both parties advocated for them and Congress thus raised taxes to cover increased expenditures.

In 1930, Congress passed and President Hoover signed the Smoot-Hawley Tariff. This was a protectionist measure that raised average tariffs to one of their highest levels in U.S. history. This measure reduced the gains to trade and certainly made to situation even worse. It should be noted, however, that the role of this tariff in causing the Depression has diminished in recent decades. By 1934, subsequent legislation largely undid this tariff.

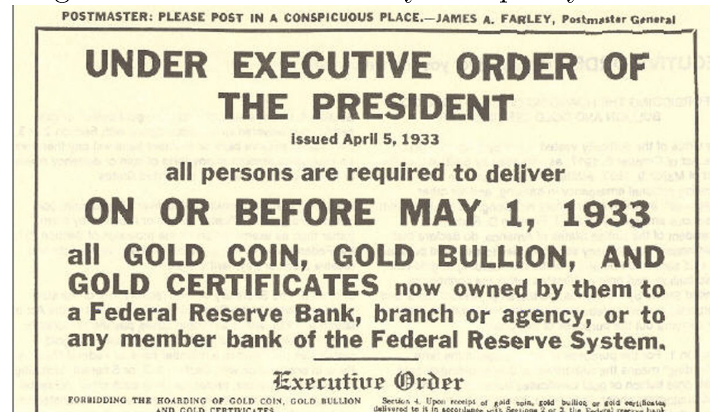
Fortunately, the Smoot-Hawley Tariff is the last time in U.S. history that politicians have resorted to anti-trade rhetoric as a response to difficult economic times.

Recovery

The Great Depression reached its bottom in 1933 and recovery then began. It is often dated as having ended much latter than 1933 because conditions remained very poor during much of the recovery. Some of the recovery was probably just the natural tendency of economies to eventually self-correct. But policy also played a major role. We consider some of these policies:

1. The End of the Gold Standard. In April 1933, President Roosevelt issued an executive order taking the U.S. off of the gold standard. Americans had to turn in their gold to the Federal Reserve. It would not be legal for Americans to own gold bouillon for several decades. The Fed was still to maintain a gold standard for foreigners (and would until 1971), but this was at the devalued rate of $35:1.

Figure 8: The Birth of Many Conspiracy Theories



POSTMASTER: PLEASE POST IN A CONSPICUOUS PLACE.—JAMES A. FARLEY, Postmaster General

UNDER EXECUTIVE ORDER OF THE PRESIDENT

issued April 5, 1933

all persons are required to deliver

ON OR BEFORE MAY 1, 1933

all GOLD COIN, GOLD BULLION, AND GOLD CERTIFICATES now owned by them to a Federal Reserve Bank, branch or agency, or to any member bank of the Federal Reserve System.

Executive Order

FORBIDDING THE HOARDING OF GOLD COIN, GOLD BULLION AND GOLD CERTIFICATES.

Section 4. Upon receipt of gold coin, gold bullion or gold certificates delivered to it in accordance with Sections 2 or 3, the Federal reserve bank

The end of the gold standard created an environment where expansionary monetary policy was far more feasible. After its repeal, the Federal Reserve did engage in more aggressive open market operations, although modern economists still often criticize it for being too passive even after the repeal of the Gold Standard. Bernanke (2004) uses cross country evidence to suggest that the faster a country abandoned gold, the better it recovered from the Great Depression:

> The willingness or ability of countries to remain on the gold standard despite the adverse developments of the 1930s varied quite a bit. A few countries did not join the gold standard system at all; these included Spain (which was embroiled in domestic political upheaval, eventually leading to civil war) and China (which used a silver monetary standard rather than a gold standard). A number of countries adopted the gold standard in the 1920s but left or were forced off gold relatively early, typically in 1931. Countries in this category included Great Britain, Japan, and several Scandinavian countries. Some countries, such as Italy and the United States, remained on the gold standard into 1932 or 1933. And a few diehards, notably the so-called gold bloc, led by France and including Poland, Belgium, and Switzerland, remained on gold into 1935 or 1936.
>
> If declines in the money supply induced by adherence to the gold standard were a principal reason for economic depression, then countries leaving gold earlier should

have been able to avoid the worst of the Depression and begin an earlier process of recovery. The evidence strongly supports this implication. For example, Great Britain and Scandinavia, which left the gold standard in 1931, recovered much earlier than France and Belgium, which stubbornly remained on gold. As Friedman and Schwartz noted in their book, countries such as China–which used a silver standard rather than a gold standard–avoided the Depression almost entirely. The finding that the time at which a country left the gold standard is the key determinant of the severity of its depression and the timing of its recovery has been shown to hold for literally dozens of countries, including developing countries. This intriguing result not only provides additional evidence for the importance of monetary factors in the Depression, it also explains why the timing of recovery from the Depression differed across countries.

Because of this evidence, support for the Gold Standard has become relegated to the fringe of modern monetary economics.

2. Inflationary Expectations: The New Keynesian Phillips Curve is a hallmark of modern monetary theory. Here it is:

$$\pi_t = E_t[\pi_{t+1}] + \kappa \tilde{y}_t + u_t \tag{1}$$

I will focus on two terms. $E_t[\pi_{t+1}]$ is expected inflation. $\tilde{y}_t$ is the output gap, the difference between actual output and what output would be if the economy were at full employment. During the Great Depression, the output gap was extremely negative. *kappa* si a positive parameter and u_t is an error term.

The point here is that inflationary expectations are important. If producers expect higher prices, this equation predicts that they will raise their production in anticipation. Through early 1933, inflationary expectations were low or negative. Recent work suggests that statements about the Gold Standard and other policy measures were successful in creating expected inflation the Spring of 1933.[6] These inflationary expectations then helped spur increased output.

Jalil and Rua (Forthcoming) provide narrative evidence that the election of FDR did not necessarily change expectations about the path of the economy. They quote the *Economist*:

[6] Jalil, Andrew and Gisela Rua. Forthcoming. "Inflation expectations and recovery in spring 1933." *Explorations in Economic History*

> [W]e do not anticipate that any very radical experiments will be made. We doubt whether Mr Roosevelt, in any attempt which he may make to lift America from the depression by her own boot-jacks, will succeed in evolving measures very different from those formulated and applied during the past two years by Mr Hoover. (The New President, Economist, November 12, 1932)

After taking office, however, the Roosevelt Administration's measures, especially the abandonment of the gold standard did work to change expectations. In a "fireside chat," Roosevelt precisely described curbing debt-deflation:

> The administration has the definite objective of raising commodity prices to such an extent that those who borrowed will on the average be able to repay money with the same kind of dollar which they borrowed... These powers will be used when and if necessary to accomplish this purpose. (Franklin D. Roosevelt, Second Fireside Chat, speech, May 7, 1933)

3. Beer and Wine. In March 1933, FDR signed a bill that legalized beer and wine. Couldn't have hurt.

4. Bank Holidays. Bank holidays are governmental actions that either close or reduce banking activities. The bank holiday may be used to either recapitalize banks or to determine which banks are vulnerable and then close them in an orderly manner. If successful, a bank holiday might help restore confidence in the banks when they reopen.

Before March 1933, many states had enacted bank holidays. One of FDR's first acts, however, was to declare a 4 day bank holiday. This was ended when Congress passed the Emergency Banking Act. The most important provision of this act was that it instructed the Federal Reserve to loan unlimited currency to member banks against good collateral. Banks judged to be insolvent were not reopened. This act was essentially deposit insurance, a policy that eliminates risk from depositors, and which would later be made permanent with the creation of the Federal Deposit Insurance Commission.

The bank runs of 1930-1933 had included a self-fulfilling component. Worried about the health of their bank, depositors would withdraw their deposits creating a liquidity crisis even if the bank was solvent. Deposit insurance works to eliminate this behavior. It seems to have worked. After March 1933, bank runs subsided.

Most economists support deposit insurance for this reason. Some, however, maintain that it causes depositors to disregard the solvency of their banks, allowing insolvent banks to receive more deposits, This may be de-stabilizing.

5. The New Deal. The New Deal refers to a set of relief measures passed beginning in 1933 in order to deal with the Great Depression. It includes the Emergency Banking Act discussed separately above. The New Deal is a complicated, and still controversial, set of policies. We will focus only on a few of its provisions.

i. Some New Deal programs sought to boost aggregate demand either through direct government spending or by directly employing those who were out of work. Examples include the Civilian Conservation Corps and the Works Progress Administration, programs that made the U.S. Federal government a large scale employer. Other programs provided aid to cities or states. These programs represent expansionary fiscal policy. Although there remains disagreement, the bulk of the evidence suggests that deficit spending in a severely depressed economy does lead to increases in output and declines in unemployment.

In recent decades, the spending components of the New Deal have been given less credit for the recovery. This is mostly because they did not result in a yuge initial increase in spending.[7] As shown below,, this spending does represent the start of a permanent and major increase in the size of government spending as a share of GDP.[8]

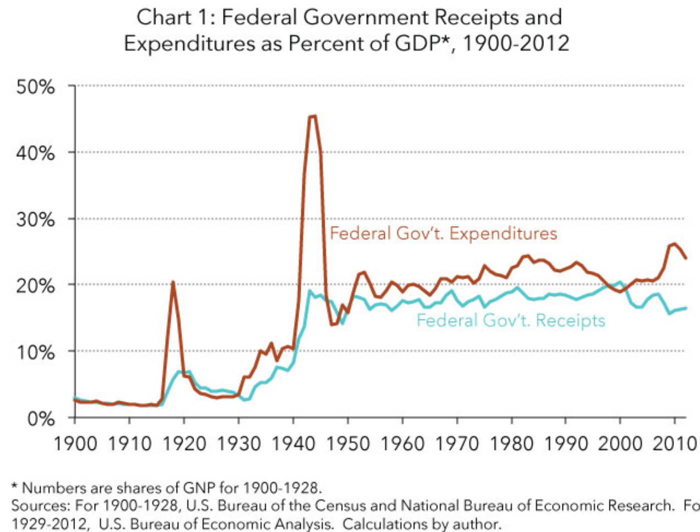
ii. Keep in mind that the Great Depression was characterized both by deflation and low output. Other New Deal programs sought to raise prices directly. The National Industrial Recovery Act was passed in 1933. It sought to form cartels within industries by coercing firms to coordinate on price setting and to set codes of conduct. It was declared unconstitutional by the United States Supreme Court in 1935. Its symbol was an eagle, which became the namesake for the Philadelphia Eagles. Other New Deal programs worked to place floors on agricultural prices which had been especially hard hit during the Depression. The U.S. government continues to prop up some agricultural prices in the United States today.

Although the NIRA had some admirable components–it was a major step in prohibiting child labor– subsequent economists have often judged the cartel nature of these programs harshly because they work to increase prices by simultaneously restricting output. Restricting competition is often among the worst ways to increase prices. A substantial fraction of economists

[7]The Economy Act reduced spending on the existing Federal Government and may have offset some of the New Deal's spending increases.

[8]Taken from taxfoundation.org

Figure 9: U.S. Tax Revenue and Government Spending



believe that the New Deal prolonged the Great Depression rather than ameliorating it. These critics point to the anti-competitive aspects of some elements of teh New Deal, most prominently the NIRA, as having chilled economic incentives. Some estimates suggest, that despite being in existence for just two years, the NIRA raised unemployment by 2%.[9]

iii. Banking, Monetary, and Financial Regulation. In 1933, Congress passed the second Glass-Steagall Act (U.S. banking Act). This was a major regulatory initiative that sought to reduce volatility in financial markets. Among its provisions was a separation between commercial banks (those that accept deposits) and investment banking activities. This separation would exist into the 1990s. The bank runs of the 1930s, in contrast to those in 2008, were on commercial banks. By forbidding commercial banks from engaging in riskier activities (compared to traditional banking activities), it was hoped that this separation would prevent future runs on commercial banks. This law also created permanent deposit insurance through the FDIC. In the decades following this law, the commercial banking sector was clearly more stable than before.

Glass-Steagall also created the Federal Open Market Committee. Subsequent legislation gave it its present form by 1942. This action sought to prioritize open market operations which had been underutilized throughout the economic downturn and thus had contributed to crippling deflation. Along with the 1977 reform that gave the Federal Reserve its current dual mandate to combat price instability and unemployment, this is among the most significant reforms of the Federal Reserve Act.

[9]Weinstein, M. 1981. "Some Macroeconomic Impacts of the National Industrial Recovery Act, 1933-35." in *The Great Depression Revisited*, ed. K Brunner. Boston: Martinus Nijhoff.

The first Glass-Steagall Act, passed in 1932 prior to the New Deal, is also worth mentioning. This law increased the ability of the Federal Reserve to lend to member banks. On an emergency basis, it allowed the Fed to loan currency even if this took it below the Gold requirements contained in the 1913 Federal Reserve Act.

iv. Other programs likely had only a small impact on the rate of recovery, but had major long term effects. Examples include the creation of Social Security in 1935, which created the public pension program still in existence today, and the Wagner Act of 1935 which made it much easier for workers to organize into labor unions. This raises an important point. Any evaluation of the New Deal must also take into account the longer term and social benefits and costs of these programs, and not just the effect of the programs on inflation and aggregate output in the years immediately after 1933.

To conclude on the New Deal, I present an exchange between economists Brad Delong and Arnold Kling.[10] Delong begins:

> A normal person would not argue that the New Deal prolonged the Great Depression.

Which drew the following response from Kling:

> A reasonable view is that some New Deal policies helped, and some hurt....
>
> Knowing what I know now, if I could go back to 1933 and tell President Roosevelt what to do, I would say "yes" to deposit insurance, "yes" to going off the gold standard, and "no" to pretty much every other New Deal policy, including Social Security. I would also encourage two things that were not tried–a monetary expansion and a fiscal expansion (which in those days, with taxes relatively low, would have meant more government spending)..

Delong then replies:

> But relative to Hoover, Roosevelt's administration did pursue both fiscal and monetary expansion. Fiscal policy shifted from Hoover's balance-the-budget-at-all-costs to Roosevelt's we-won't-worry-about-the-deficit-for-a-while–a big difference. It would have been much better if the New Deal had involved much bigger deficits, but the deficits it did involve were quite a help.

[10]See: *delong.typepad.com/sdj/2007/01/the$_n$ew$_d$eal$_a$n.html*

> Similarly for monetary policy: Hoover's Fed was desperate to avoid gold losses, which meant raising interest rates whenever gold flowed out. Roosevelt's Fed wasn't. Again, a bigger monetary expansion would have been a greater help, but the change from Hoover to Roosevelt was a great help.
>
> So you have four big macroeconomically-significant pluses working to alleviate the Great Depression: deposit insurance, abandoning the gold standard, fiscal expansion, and monetary expansion. What do you have on the negative side? The short-term damage done in 1993-4 by the NIRA, and the work-relief programs that probably created several percentage points' worth of structural unemployment.

The Recession of 1937 and Ultimate Recovery

In 1937, the economy re-entered recession (here meaning negative economic growth), with unemployment again rising to 19.0%. If the Great Depression is defined as including the extended period of poor macroeconomic conditions that existed after 1933, then this was a recession within a depression.

It is not possible to definitively determine the cause of the Recession of 1937. It is especially hard because this period coincides with slowdowns both in the Federal Reserve's monetary expansion and on deficit spending. Monetary and fiscal explanations are thus both plausible. On the monetary side, the Federal Reserve slowed down its open market purchases and approximately doubled reserve requirements. On the fiscal side, some New Deal spending subsided, the payroll tax (used to finance Social Security) debuted, and general taxes were also raised. Many have taken this recession as a lesson against withdrawing recovery measures too soon into an economic recovery.

After 1937, final recovery was achieved with GDP growing by about 50% by 1942. The additional catalyst was the massive boost in aggregate demand provided by the Second World War. Initially, this entailed U.S. firms providing military material to combatants. Later, the U.S. would enter the war. Unemployment would then fall to record lows.

The claim is sometimes made that World War II ended the Great Depression. This is similar to saying the Stock Market Crash caused the Great Depression. World War II was the final act of the recovery, but many other events had caused the recovery to begin several years earlier.