

Monetarist Interpretations of the Great

Depression: A Comment^{*/}

by Allan H. Meltzer

Are the courses of fluctuations in economic activity and prices entirely monetary, or entirely non-monetary? One has reason to expect that the answer to that question has been so well understood for so long that it does not require a paper, much less a book or a conference to report the answer. The earliest attempts at systematic thinking about fluctuations recognized wars, crop failures, plagues, weather and money--real and monetary shocks--as causes of fluctuations. Evidence supported this explanation. Although there was no single accepted formal theory of business cycle dynamics, few economists have argued that all fluctuations have a unique cause. Haberler (1958).

Keynesian economists, until recently, assigned no important role to money as a force in the initiation and propagation of business cycles and often assigned no role at all. Books by Hansen (1951) and Duesenberry (1958), written in the Keynesian heyday, are examples. Recently, Peter Temin revived this position. In Temin (1976) he argues that there is no evidence that U.S. monetary policy was an independent cause of the 1930's depression.

Temin's claim that the decline in output and prices from 1929 to 1933 resulted solely from a decline in spending, accompanied by an induced increase in the demand for money, has neither a valid theoretical nor a correct empirical basis. Gordon and Wilcox agree with me, (1976), and all of the reviews of Temin's book that I have seen in finding Temin's argument incorrect or incomplete and by concluding that Temin's evidence is not persuasive. Further, Gordon and Wilcox show that the conclusion Temin drew from the data is false in two senses. First, they build a persuasive case that monetary factors contributed to the decline in output and prices but cannot account for the entire decline. Second, they use data from European countries to suggest that monetary expansion--a higher growth rate of money--would have reduced the severity of the decline.^{1/} On both points, they reinforce the conclusions reached by Friedman and Schwartz (1963).

Gordon and Wilcox go beyond the issues raised by Temin. They describe the four main conclusions of their paper (p. 43) as:

- (1) "both monetary and non-monetary factors mattered";
- (2) "non-monetary factors were of prime importance during 1929-31";
- (3) "different monetary policies in the U.S. after 1931 would have reduced the severity of the contraction";

(4) "and finally...the stimulus of rapid monetary growth on economic activity in the late 1930's was quite weak."

I agree with points (1) and (4); "mattered" in point (1) refers to the effects on prices and output. I agree with point (3) but would delete "after 1931." There is no reason to exclude from criticism the monetary policies of 1929 and 1930, since the monetary base fell in both years. A more expansive monetary policy in the fall of 1929, after the recession was recognized, and in 1930 would have limited the decline.

On point (2) we are farther apart. I have argued elsewhere, Meltzer (1976) for the importance of tariffs, but I do not believe that the primacy of non-monetary factors is established, and I am not persuaded by the case that Gordon and Wilcox make for population growth, residential construction and the stock market as independent causal factors. Gordon and Wilcox's neglect of anticipations at critical points of their discussion is one reason we disagree. Below, I discuss anticipations and some other issues on which we differ.

There are, however, some major points on which we agree. Since we started from different positions, it may be useful to explore some of the reasons differences remain and some issues on which we have reached agreement. I discuss, first, some of the areas of agreement and some differences in emphasis. Then I consider some of the remaining differences. A final section attempts to put the differences into perspective.

Areas of Agreement

Gordon and Wilcox list four propositions that, they believe, comprise the "monetarist platform."^{2/} They accept, for the period of the 1930's, only one of these propositions--"that past government policy actions (and in 1929-33 the absence of appropriate policy actions) have done more harm than good." Gordon and Wilcox (1978, p. 87. Emphasis in the original.) They argue that the causes of the depression are neither entirely monetary nor entirely non-monetary. I agree with their conclusion about the effects of government policy in the 1930's and with their rejection of arguments that assign no independent role to changes in money or that interpret all changes in money as a response to current or past changes in the arguments of the demand function for money.

Gordon and Wilcox also reject "hard-line monetarism" which they identify with the proposition that "the 1929-33 contraction was both initiated and aggravated by monetary factors and non-monetary factors played no role." (p.8). This statement is open to more than one interpretation.^{3/} I accept, as one correct interpretation, that the magnitude and timing of all changes in output and prices cannot be explained as a response to prior changes in the quantity of money. There are, during the

downswing and recovery, at least two major elements in addition to the usual white noise. First, there are non-monetary policies including tariff policy of 1930, the pro-monopoly and pro-cartel legislation like NIRA in the early New Deal, and later the Wagner Act. Second, there are the anticipations induced by policies and other events.

Tariff policy is a non-monetary policy, but its effects in the early thirties depended on prevailing monetary policy. The effects of higher tariffs on output and prices, described by Gordon and Wilcox (pp. 59-60), would have been different if the gold standard had been abandoned early rather than late. Brunner (1976) shows that the unambiguous effect of higher tariffs with fixed exchange rates is to increase the domestic money supply and lower foreign money supplies. With floating exchange rates, the deflationary effects of the Hawley-Smoot tariff on the rest of the world would have been smaller and shorter-lived, and the feedback effects on the United States through the trade balance and the money stock would have been smaller also.^{4/}

Gordon and Wilcox raise questions about the speed of the recovery, the effects of money and non-monetary changes on prices and output during the recovery from 1933 to 1941 and

during the intervening recession, 1937-8. I agree that the sequence of recovery, recession and recovery in 1933-41 is a valid source of evidence on the relevance of alternative explanations, but I disagree with their analysis of the recovery, particularly their neglect of the effects of policies and the existence of worldwide recession on anticipations.^{5/}

There is no disagreement, however, on a main point. The depression is deeper and the recovery slower than can be explained by models relating income to current and past values of money. Gordon and Wilcox devote considerable effort to demonstrating this point. Their simulation using the relation of current income to lagged money and income computed from the 1920's shows that "the 1937-38 recession was almost entirely a monetary phenomenon" but also shows that nominal income rose much less than the simulation predicts (pp. 32-35).

The results of the simulation, however, show little more than their Figure 6 comparing U.S. and European velocity, where velocity is defined as the ratio of nominal income to money plus time deposits (M_2). During the 1920's, average M_2 velocity in the U.S. declined slightly. Velocity declined at a much greater rate per annum from 1929 to 1932, remained relatively constant from 1934 to 1937, then declined again in the next two years.

Consequently, the simulations, using the coefficient of lagged money computed from data for the twenties, substantially underestimate the decline in the early thirties when money and velocity fell together and overestimate the recovery in the late thirties when velocity fell and the money stock rose.^{6/}

Gordon and Wilcox do not go behind the simulations to ask whether differences in the demand for money (velocity) reflect consistent, linear or non-linear, responses to unchanged arguments of the demand function, changes in anticipations or, at the opposite extreme, instability of the function. Nevertheless they draw a much stronger conclusion than seems warranted by the simulations. They write, "Our interpretation is that shifts on the IS curve must be relied upon to explain the timing of income growth in the 1938-41 period..." (p. 36) The implication is that most of the shift in IS is independent of past government policies--monetary and non-monetary. The 1941 positive shift in IS is an exception and is attributed to defense spending. But the slow recovery in 1938-40 is attributed mainly to sluggish investment which led to "a weak recovery despite the rapid growth in M_2 ..." (p. 35). This appears to be one main piece of evidence "denying any potency for the self-correcting mechanism of price flexibility during the 1930's..." (p.88).

Gordon and Wilcox never ask whether the slow recovery of real income from the 1938 recession was, in part, a consequence of New Deal policies. The taxation of undistributed profits, higher income taxes, the Wagner Act, the regulation of wages and hours of work, growing regulation of business, rhetoric about "economic royalists," and the rising real value of the government debt held by banks and the public are among the government actions reducing incentives to invest or contributing to uncertainty about the future. Jacob Viner warned Roosevelt at the time that his criticisms of businessmen and his policies toward business reduced the effect of his spending policies on investment. According to Viner, Roosevelt became angry and barred him from subsequent meetings.^{7/}

An additional point on which we agree is the conclusion that, contrary to the Phillips curve, "the rate of change of prices is significantly influenced not by the level of output but only by its current rate of change." (p. 71)^{8/} Gordon and Wilcox replicate this finding using European and U.S. data, and thereby provide new evidence that the classical mechanism, relating prices to output and rates of price change to rates of output change, provides a better explanation of the data than the inflation augmented Phillips curve.

A principal difference between the two explanations is in the interpretation of the output gap. In Keynesian analysis, and in the inflation augmented Phillips curve, the gap (or unemployment) is a measure of disequilibrium in the output and labor markets. With a large gap, and a low expected rate of inflation, the rate of price change should be negative according to the arguments of Keynesian writers. See Modigliani and Papademos (1975). In the Keynesian interpretation, the failure of prices to fall in the thirties is a main piece of evidence showing that the self-correcting properties in the private sector were weak or absent.

Gordon and Wilcox conclude that the rise in prices from 1933 to 1937 "appears to have been due to the very rapid growth of nominal income during this interval." (p. 78) They agree that prices fell in the contraction of 1929-33. For the first eight years of the depression, prices responded to market conditions. The alleged failure of the price system could only have occurred after 1937.

To sum up, we agree on three main points and a number of minor points. The main points of agreement, with some remaining qualifications, are

- (1) The decline from 1929-33 is not solely a response to prior or contemporaneous reductions in money. Higher tariffs under Hawley-Smoot, and retaliation abroad, contributed to the decline. I would add that the interaction of the gold standard rules and the tariff changes also contributed to the decline. Gordon and Wilcox suggest that construction activity and the decline in stock prices exerted independent effects. I discuss both topics below.
- (2) The response of nominal output to money was lower in the thirties than in the twenties but was not absent. A more expansive monetary policy from 1929 to 1933 would have reduced the decline. A less restrictive monetary policy than the doubling of reserve requirements would, as a minimum, have reduced the severity of the 1937-38 recession and probably would have avoided the recession.

(3) The distribution of nominal income between prices and output shows that rates of price change are related to rates of change of output and not to the level of output, the full employment gap or the level of unemployment. These findings are contrary to the standard Phillips curve and are an important source of evidence against policy conclusions, based on the Phillips curve, suggesting that increased stimulus raises output with raising prices. Gordon and Wilcox add that equilibrium aggregate supply theories fail, also, to explain the distribution of nominal income between prices and real income. I am content with the more modest conclusion that current versions of the equilibrium theory do not explain the movements of output and prices from 1938 to 1940 or 1941. In the following section, I suggest an explanation.

Differences and Disagreements

Every reader of the Gordon and Wilcox paper must be as struck as I was by the absence, in a paper as long as theirs, of any careful discussion of interest rates, asset prices or anticipations. These topics are mentioned rarely, or not at all. To their credit, the liquidity trap is not introduced as a

deus ex machina to explain interest rates and anticipations. Here, too, they depart from the usual Keynesian interpretation. But their failure to model anticipations, except as a simple adaptive rule, is as disappointing as their failure to distinguish, except in a passing way, between anticipated and unanticipated changes in government policy. Several of our differences and disagreements stem from this common source.

In this section, I concentrate on four issues that have attracted considerable attention in the past. One is the contrast between the weak response to government policy in 1938 and 1939 and the larger response to defense and war spending after 1940. A second is the importance assigned to autonomous changes in housing and stock prices in the 1929-33 decline. A third is the role of the gold standard. Fourth is reverse causation.

The Weak Recovery

If Gordon and Wilcox had devoted more attention to anticipations they would have been less likely to deny "any potency for the self-correcting mechanism of price flexibility during the 1930's..."

(pp. 87-88. Emphasis added) Their conclusion, a main point on which we disagree, seems much too strong. There was a strong expansion from 1933 to 1937, with rising or steady velocity. After 1937, the demand for money increased more than nominal income; velocity fell. The contrast between the two periods of expansion provides evidence on the differences in anticipations during the two periods and helps to explain why the recovery was weak from 1938 to 1940.

Interest rates on long- and short-term securities, fell in both periods, 1933-37 and 1937-1940. Common stock prices rose in the earlier expansion and fell in the later expansion. Table 1 shows these data. Rates of changes of the deflator are shown to permit comparison of ex post real and nominal returns.

Table 1
Interest Rates and Stock Prices
1930-40 (in percent)

Year	Long-term rate	Short-term rate	Rate of Change Standard & Poor's average	Rate of Price Change
1930	4.0	3.6	-21.3	-2.6
1931	3.9	2.6	-43.2	-9.6
1932	4.3	2.7	-67.8	-10.8
1933	4.3	1.7	25.7	-2.3
1934	3.7	1.0	9.4	7.1
1935	3.0	0.8	7.4	0.9
1936	2.6	0.8	37.8	0.2
1937	2.7	0.9	-0.4	0.4
1938	2.6	0.8	-29.4	-0.1
1939	2.4	0.6	4.8	-0.2
1940	2.2	0.6	-9.0	0.2

For the years 1930 thru 1932, returns to common stocks and commodities are strongly negative; returns to money and short-term securities are high and positive. Falling prices increased net wealth, but higher interest rates and lower expected income reduced

the market value of wealth. In 1933, the situation changed. Stock prices rose in 1933 and continued to rise by more than the rate of inflation until 1936. Dividends and realizable capital gains were distinctly positive, in the years 1933-36. The return to holding money became negative in 1934, and the nominal return on short-term securities was rarely much more, and at times less, than the rate of price change. It does not strain credulity to believe that rising stock prices reflected anticipations of rising real returns to capital and higher real income.

Contrast the situation after 1937. There are, again, positive returns to short-term securities and negative returns to common stocks. If falling stock prices in this period indicate prevailing anticipations of future returns to capital, we can conclude that anticipations became bearish. Stock prices decline in recession, when real income and real returns fall. But, real income rose 8 or 9% in 1939 and 1940, lending support to the interpretation that the decline in stock prices reflected increased pessimism about future returns to real capital and not an anticipated decline in real income or a new recession.

What accounts for the change in anticipations? I believe that two interrelated factors must be considered. First, the Roosevelt administration, reelected in 1936, promised a series of additional laws regulating, wages and hours, retirements, labor relations, and raising taxes on corporate profits. The anticipated effects were higher labor costs and lower after-tax returns to capital. Second, confidence in the ability of government to restore prosperity and avoid recession was weakened by the 1937-38 recession.

Whether the recession was entirely the result of Federal Reserve policy or partly the result of a shift in budget policy, government produced the recession. Leading economists, including a President of the American Economic Association, did not conclude that government policies had failed to restore prosperity but, instead, talked of stagnation and urged increased government spending.

There was a stream of potential and actual programs including an attempt to "pack" the Supreme Court so as to have programs declared constitutional. These activities affected anticipations and increased uncertainty about the future. If the change in opinion occurred suddenly, there would have been a one-time adjustment of expected returns. Asset prices would have fallen until capital values reflected the new anticipations. The stream of projects, proposals and policies was spread over time. Stock prices fell sharply in 1938, recovered slightly, then fell again as the markets adjusted to the flow of new information or rumors, about the administration's policies.

Once defense spending started prices rose and nominal income increased more rapidly. Repeated experience with wartime spending strengthens the belief that wars are financed by inflation. At the time, the change in anticipations was reinforced by the shift in the administration's policy from concern with redistribution and regulation to a growing interest in expanding output. The rational response for households was to shift from money and securities to goods. Velocity rose, as Gordon and Wilcox show, so with little change in the growth rate of M_2 , private spending and nominal income accelerated.

In the event, the anticipations of wartime inflation proved to be correct.

The 1938-40 recovery is one piece of evidence leading Gordon & Wilcox to reject the monetarists' claim that the private sector is stable. In doing so, they again neglect studies of the demand for money. Many of these studies show that the demand for money responded, without extraordinary error, to falling nominal returns and rising income in the late thirties, that is, responded to the variables incorporating anticipations of changes in aggregates. They also neglect the evidence in their Figures 6 and 7. The former shows that growth rates of money and nominal income differ for the U.S. and for the aggregate of six European countries, but the two indexes of velocities, computed as the ratio of nominal income to money, base 100 in 1929, are almost identical during the recovery phase 1933-37 then appear to separate. Their Figure 7 shows that by 1937, real income in Europe had passed the 1929 peak. Real income in the U.S. almost certainly would have passed the 1929 peak in 1937 had there not been a policy induced recession.

Taken together, figures 6 and 7 suggest that something changed in the U.S. in 1937. It is plausible, but not established, that the failure of New Deal policies to maintain real expansion and the threat of increased government regulation, more redistribution and higher tax rates changed anticipations. Once emphasis shifted from redistribution and regulation to expansion and the threat of war awakened anticipations of inflation, the demands for money and securities fell as the demands for goods and services rose. Recovery resumed.

Housing

A second type of evidence that Gordon and Wilcox use to make the case for private sector instability is the behavior of housing. They argue (pp. 55-6) that the desired capital stock declined after 1929 because of declining population growth. The actual capital stock was "too high" because of "overbuilding" of residential housing in the 1920's and the "overshooting" of the stock market during 1928-29. Both the "overbuilt" actual stock and the reduced desired stock contributed to an excess supply of housing. Consequently, Gordon and Wilcox argue, residential construction declined. They summarize some previous studies and present some evidence in Table 6 showing that the percentage of full employment output going to residential fixed investment declined 40% from 1926 to 1929 and an additional 40% in the following year.

Their argument about population and overbuilding suffers from two main defects. First, data on U.S. population growth show a peak in the rate of growth about 1923 and a trough in 1931. During most of the depression years, the population growth rate rose. The rate of growth of non-farm households also declines from the early twenties to 1931 then rises about as rapidly as at any time in the past six decades.^{9/} If falling population growth caused an excess supply of housing in the twenties or early thirties, rising population growth should cause rising demand in the thirties. Second, Gordon and Wilcox do not make a persuasive case that the decline in housing after 1929 was an autonomous or independent cause of the depression. More than 5 years of declining population growth reduced the growth rate of non-farm households from above 3% to below 1% by 1929. It is difficult to accept without evidence that this decline was not

recognized as it occurred and that adjustment was not made in the 1920's. The fall in income after 1929, of course, changed the desired rate of purchase of durables. With real returns to short-term government securities between 6% and 13% in 1930-32, the gain from postponing purchases, and lending or purchasing securities instead of borrowing to purchase durables was high by any historical standard. It does not require an interest elasticity as large as has been found in some recent studies to explain the decline in housing starts after 1929 as mainly a response to demand. See Arcelus and Meltzer (1973).

Stock Prices

The increase in production early in 1929 was large by past or present standards. Despite the deep recession that started in August, according to National Bureau chronology, the year 1929 as a whole shows 6% growth in real output. A 6% rate of expansion is higher than in most peacetime years that do not culminate in a recession, so it is noteworthy that the 6% average increase occurred in the year that the depression started. A better indication of the surge in output early in the year is the 17% increase shown by industrial production in the year ending July 1929.

Industrial production fell more than 2.5% before the stock market collapsed in late October and fell an additional 10% by the end of January. Since stock prices fell after output declined sharply, and the recession was expected to continue, the decline in stock prices should not be treated as an autonomous event or an independent cause of the depression.

Many studies of the depression and the decline in stock prices ask why output and stock prices fell as much as they did in 1930. None ask why output rose as much as it did in the year ending July 1929. The causes of the very large 1929 expansion are no less difficult to discern than the causes of the 1930 collapse. An explanation of both events is more likely to be productive than explanations that start from the 1929 peak and ask why the first year of the recession is so much larger than can be explained as a response to prior changes in money.

The Gold Standard

Gordon and Wilcox deny that the gold standard and its interaction with the Hawley-Smoot tariff contributed to the decline, although they accept the tariff as a policy change that deepened the recession.^{10/} They do not discuss the nominal values of exports and imports or capital movements, the factors that affect the foreign component of the monetary base. Further, they comment that the price-specie flow mechanism induces expenditure switching, and possibly a recession in a single country, but not a worldwide depression. I believe that in the absence of Hawley-Smoot, subsequent tariff retaliation, and the policy errors of the Federal Reserve, there would not have been a worldwide depression and almost certainly not a depression of the same magnitude and duration as the depression that occurred.^{11/} Without a fixed

exchange rate system, the depressing effects of the tariff would have been smaller, and more of the effects would have been concentrated in the U.S. The U.S. would not have drained as much gold from the rest-of-the-world so the depression elsewhere would have been less severe and the effect of that tariff would have been reflected mainly in a higher U.S. price level.

Reverse Causation

A main conclusion of the authors' lengthy discussion of the influence of money on output is that contemporaneous correlation between money and income in the decade of the thirties adds plausibility to the reverse feedback hypothesis. This hypothesis makes changes in money the result of changes in income acting on the supply of money and implies that money is a relatively passive factor in fluctuations. Much of the evidence leading Gordon and Wilcox to accept the reverse causation hypothesis is contained in their Table 5. The table shows that during the thirties the influence of current money on current nominal income rose and the influence of lagged money fell.

I do not believe that the data in Table 5 sustain the interpretation placed on them. These data appear to have been obtained from a regression equation in which nominal income depends on current and lagged money, current income and a time trend.

$$Y_t = \alpha_0 + \alpha_1 M_t + \sum_{j=1}^8 \alpha_{2j} M_{t-j} + \sum_{i=1}^4 \alpha_{3i} Y_{t-i} + \alpha_{4t} + u_t$$

The interpretation of the equation is left open, but whatever its interpretation, it is not clear why the statistical significance of α_1 tells us as much about the reflex effect of business on the supply of money as the authors' claim.

One interpretation of the equation is obtained from the quantity theory using \bar{Y} and $\bar{M}\bar{V}$ to denote average or expected nominal income and nominal expenditure and $Y_t - \bar{Y}$ and $M_t V_t - \bar{M}\bar{V}$ the deviations of current from expected income and spending.

$$Y_t - \bar{Y} = M_t V_t - \bar{M}\bar{V}$$

If the time trend had been omitted, the regression estimates obtained by Gordon and Wilcox would have a clearer interpretation. The coefficients α_1 and α_{2j} would measure the velocity of current and lagged money--the effects of money on spending holding \bar{Y} constant--and the $\sum \alpha_{3i}$ would measure the effect of \bar{Y} on Y . The coefficient of current M would be approximately equal to current velocity. In Table 5, α_1 is a bit high in the samples that include the middle thirties.^{12/}

I do not recommend Gordon and Wilcox's equation as a method of testing the quantity theory, but I am able to interpret the coefficients of the test using the quantity theory. I do not know how to interpret α_1 and α_{2j} as part of a supply theory of money or how to get implications about reverse causation. Do Gordon and Wilcox maintain that the current money stock depended mainly on current income? Did a dollar of current income have a more significant effect on the money stock in the 1930's than in the 1920's?

The relative rates of change of the money stock (\hat{M}_1) and the monetary base (\hat{B}) are shown in Table 2.^{13/} The monetary base is defined as currency and bank reserves adjusted for reserves impounded by increases in the reserve requirement ratios in 1936 and 1937. M_1 is currency and demand deposits.

Table 2

Relative Rates of Change of
 M_1 and B
1934 - 1940

Year	\hat{B}	$\hat{\Sigma B}$	\hat{M}_1	$\hat{\Sigma M}_1$
1934	.18		.09	
1935	.14	.32	.17	.26
1936	.09	.41	.13	.39
1937	-.11	.30	.04	.43
1938	.15	.45	-.01	.42
1939	.20	.65	.11	.53
1940	.25	.90	.15	.68

The cumulative rates of changes, $\hat{\Sigma B}$ and $\hat{\Sigma M}_1$, are approximately equal up to 1938. Thereafter, the growth rate of money is substantially less than the growth rate of the base, but the positive correlation remains. To sustain the reverse causation hypothesis, given this correlation, Gordon and Wilcox must argue that the growth of the monetary base also is a result of the growth of income.

One channel by which income can influence the base, member bank borrowing, was removed during the mid-thirties; banks rarely borrowed from the Federal Reserve. The balance of payments is a second possible channel. Gordon and Wilcox's Table 1 shows why it is difficult to

believe that income determined the base through the balance of payments. There is no evidence of any relation between lagged nominal income and money. The entire effect of income on the balance payments and of the balance of payments on the stock of money would have to be synchronous. Gordon and Wilcox deny for earlier and later periods, any substantial effect of prices on the trade account.^{14/} Given their denial, real income and price effects on the capital account would have to be large and rapid.

The remaining channel is open market policy. Did the Federal Reserve respond to the level of income by increasing base money when nominal income rose and reducing base money when nominal income fell? My reading of the minutes suggests that when income rises, the Federal Reserve increases the base if interest rates rise and reduces money if interest rates fall. Pegged interest rates permit output to affect money; if loan demand responds to income, and the money stock rises with loan demand, there is an effect of income on money. But this would not explain an affect on the base. As Table 2 shows, the growth of money was lower than the growth of the base. Moreover, in the middle thirties, the Federal Reserve conducted open market operations rarely and in small amounts. Friedman and Schwartz (1963).

Reverse causation is not impossible, but it is implausible that the relation of base money or money to income is mainly the result of reverse causation in the thirties. The dominant effects on the base,

after 1934, are the doubling of reserve requirement ratios and the flow of foreign exchange and gold induced, to a considerable extent by the rise in the price of gold and later by the capital flight from Europe as fears of war and confiscation rose.^{15/}

Some Final Comments

The Keynesian-monetarist dispute has moved a considerable distance from its origin. Gordon and Wilcox's paper takes another step in the direction of resolving conflicts by looking at evidence. Since their paper is long and substantive, there are many points of agreement, and disagreement, on which I did not comment. I have, however, tried to stress both major points of agreement and issues on which additional evidence is required to reduce the remaining differences.

Two issues, very much a part of the discussion have been neglected: the impotence of monetary policy and the effectiveness of fiscal policy. Professional opinion on both issues has changed considerably.

In the heyday of Keynesian orthodoxy, it was not unusual to find statements about the instability of the demand for money and the impotence of monetary policy. The demand for money or velocity, it was said, shifted erratically so that even if money could be controlled, monetary policy could not be relied upon to influence income. Statements of this kind are still made but have little empirical foundation even for the thirties. Gordon and Wilcox present evidence (Table 6) that monetary velocity in Europe and in the United States not only did not move erratically, but the two velocities changed together until 1937. Whatever affected one appears to have affected the other with about the same timing and in the same direction.

The effects of fiscal and other non-monetary policies of the New Deal are all but completely ignored by Gordon and Wilcox. Gordon and Wilcox show (footnote 39) that real government purchases increased in relative size by nearly 50% during the decade, rising from 13% to 19% of real GNP. Yet, aside from a single comment suggesting that the increase in the Federal budget surplus in 1937 contributed to the recession, fiscal policy has no role in the analysis.

The Keynesian-monetarist dispute has not lacked controversy about the potency of fiscal policy financed by debt issues. The thirties is the decade in which economists are alleged to have discovered the potency of debt finance, but recent studies find weak effects, or no effects at all. Stein (1976). Neglect of fiscal policy by the authors may be entirely a consequence of their attempt to limit the scope of their effort to extract evidence on the role of money. A careful study of the response to fiscal policy in an economy with idle resources remains to be done.

The authors' major conclusion denies that the price system would have restored equilibrium at full employment. I believe this conclusion stands on a weak foundation. The authors' discussion of anticipations never goes beyond a simple adaptive scheme. Generally anticipations are ignored. The failure of Keynesian policies and New Deal legislation to restore prosperity is taken as evidence of the failure of the price system. Neither the disincentive effects of many of the New Deal policies nor their stimulative effects are considered.

An alternative explanation of the very gradual recovery is that after the policy induced recession of 1937-38, people no longer anticipated that the New Deal policies would promptly produce rising real, after-tax returns to private investment. A series of announced policy changes and proposed changes lowered anticipated future returns and delayed the recovery. In the absence of these policies and the policy induced recession, the recovery would have continued as it did in Europe.

The alternative hypothesis has at least as much surface validity as the hypothesis that the price system failed. A test of the aggregative effects of New Deal policies would help to resolve this issue and is, clearly, long overdue.

Footnotes

- * This comment was started while I was a visiting fellow at the Hoover Institution and completed while I was a visitor at the Getulio Vargas Foundation in Rio de Janeiro.
- 1/ Lars Jonung's discussion of Swedish experience, Jonung (1978), provides additional evidence.
- 2/ Mayer (1978) lists twelve. There is considerable overlap between the two lists, but neither is complete. Both fail to mention the international monetary system, particularly the role of fluctuating versus fixed exchange rates. Gordon and Wilcox use descriptive words and phrases -- "stable" "natural tendency" -- that are open to many interpretations. My discussion of Mayer (1978 chap. ____.) assigns much more importance to differences in the interpretation of unemployment than Mayer or Gordon and Wilcox. For these reasons, I don't accept either list as complete.
- 3/ I believe "hard-line monetarism" is an empty box that owes its existence mainly to a desire for symmetry. Gordon and Wilcox cite several times a summary statement by Schwartz (1978) but neglect her statement (1978, n.9) accepting the Hawley-Smoot tariff and tariff retaliation as factors contributing to the decline.
- 4/ My agreement with Gordon and Wilcox is less than complete. Their discussion of the effects of tariff changes, pp. 59-60, makes no mention of effects on capital movements and money stocks in the U.S. and abroad. I return to this point in the discussion of disagreements below.

- 5/ Their complaint that monetarists express interest only in the depth and severity of the decline (pp. 1-2) and neglect the recovery and recession is without foundation. Friedman and Schwartz (1963) and Friedman and Meiselman (1963) are but two of the studies of the recession and recovery that can be cited.
- 6/ I do not agree, however, with the conclusions based on Table 5, particularly the finding that "the contemporaneous correlation in the decade of the 1930's adds plausibility to the reverse feedback hypothesis that the reflex effect of business on money was a primary determinant of shifts in the money supply." (pp. 38-39.) The amount of "reverse causation" is not independent of policy. If the Federal Reserve pegs the interest rate, increases in the public's supply of earning assets to banks increase bank credit and money.
- 7/ The story was told to me by Viner. Viner was a consultant to the Treasury in the mid-1930's and Secretary Morgenthau's published diaries record a brief version of the story. Gordon and Wilcox consider the effect on prices of NRA price fixing and attribute some of the unexplained rise in prices in 1937 to the growth of labor union membership fostered by the National Labor Relations Act (Wagner Act). But they do not mention that a change in the monopsony power of unions that raises the price level can lower aggregate real output.
- 8/ To correct a misinterpretation on p. 86, let me add that I do not claim (1977) that the expectations augmented Phillips curve works under the dollar standard. On the contrary, I conclude that the output gap has no significant effect on the rate of price change under the dollar standard of the postwar years.

- 9/ Clarence Barber also argues that declining population growth reduced housing demand. I have used charts 2 and 4 of his paper, Barber (1978), for data on growth rates of population and non-farm households.
- 10/ Although Gordon and Wilcox are scornful of writers with "monocausal blinders" (p.44), when dismissing the gold standard they ignore this stricture and neglect the interaction between tariffs and money stock changes under the gold standard discussed earlier.
- 11/ Figure 7 in Gordon and Wilcox shows a decline in real output and a rise in the price level for their European composite in 1929. The Maddison indexes used in my study Meltzer (1976) do not include Netherlands and Sweden, but they do not show a decline in any of the larger countries and show a sizeable increase in real output for France. Wholesale prices fell in Europe, but Gordon and Wilcox show an increase. Under the price-specie flow theory, a fall in income abroad lowers U.S. exports and the U.S. money stock.
- 12/ The sum of the coefficients of lagged Y is never significantly different from zero or one. Information supplied by Gordon and Wilcox, however, shows that the coefficient of Y_{t-1} is significant in all samples and is usually the only coefficient of the lagged Y 's that passes the standard test of statistical significance. The coefficient of Y_{t-1} is generally in the neighborhood of one as implied by the quantity theory; for the 7 regressions in table 5, the average is 0.94.

13/ I have used M_1 rather than M_2 because it is available at the time of writing. It is unlikely that the observed pattern is affected by the change in a way that would change the conclusion.

14/ Gordon and Wilcox do not mention that the t statistics for lagged money on income and lagged growth rates of money on growth rates of income are always higher, usually substantially higher, than the comparable statistics for reverse causation in Table 1. As Zellner (1979) and Schwert (1979) show, Granger tests are tests of temporal precedence and not tests of causation as the term is generally used in science.

15/ The reverse causation hypothesis of Gordon and Wilcox is of course entirely different from the Temin (1976) argument that the effect of falling income on money from 1929 to 1933 produced an excess supply of money.

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