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## THE KEYNESIAN-MONETARIST DEBATE ON BUSINESS CYCLES: A CASE STUDY OF THE GREAT DEPRESSION

Faik Bilgili\*

### ABSTRACT

Mainly there exist two competing models to explain the Great Depression in the relevant literature: Monetarist and Keynesian models. Monetarists assert that The Depression resulted from a contraction of the money supply in the early 1930's. Keynesians, on the other hand, argue that The Depression was caused by a fail in autonomous spending, particularly investment and, and, within investment, housing, spurred a general collapse.

The purpose of this paper is to explore the reasons of The Great Depression in the perspective of Keynesian and Monetarists approaches. The severe extends of Great Depression are clear but the reasons of the depression are ambiguous. One reason, often and correctly given, is the absence of expansionary macroeconomic policy between 1929 and 1933. The monetary and fiscal policies were not used. Those policies could have been effective in moderating or eliminating the contraction (Temin, 1979, p.6).

Keynesians following The General Theory regard investment behavior as behavior containing a substantial autonomous component, claim that investment responds to the state of business confidence incorporates the effect of episodes of speculation overbuilding. The instability and unpredictability of fixed investment behavior, of course, forms the basis of Keynesian support for an activist and interventionist role for government fiscal policy (Gordon, 1986, p. 268).

In contrast, Monetarists do not single out investment for special attention. Changes in aggregate private spending, consumption and investment alike are attributed to prior fluctuations in the supply of money. Monetarists would expect (if forced uncharacteristically to devote special attention to fixed investment behavior) to find a strong role for the money supply as a primary determinant of investment behavior (Gordon, p. 268).

**Keywords:** The Great Depression, Keynesian model, Monetarist model, fiscal policy, monetary policy, policy effectiveness.

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## INTRODUCTION

Macroeconomic fluctuations are a recurring theme throughout history. The Business Cycle Theory divides the macroeconomic fluctuations into four periods; recession, trough, expansion, and peak. The two extreme points, booms and depressions, of these fluctuations result in not only severe economic problems but also social and political destructions. Depressions wipe out workers' job, push business firms into bankruptcy, and oust politicians from power. Policy makers feel pressure from voters to react to the repercussions of severe downturns.

The analyses of business cycles began in 1920 with the founding of National Bureau of Economic Research, which is a leading economic research institution of US since then. Although business cycles are not regular and predictable, historical records of economic fluctuations, sophisticated macro models and several theories are in help of explaining and forecasting those cycles. The basic business cycle theories are external shock theories, population dynamic theories, Marxian capitalistic crises, long waves and innovations, psychological theories, Keynesian and monetarist theories respectively.

The majority of the studies on business cycles focused mostly on the Great Depression of 1929. Among others, Keynesian and monetarist theories became the central of the discussions of this depression for several decades. For this reason, in this study, business cycles are examined with two conflicting theories of Keynesian and monetarists. The Keynesian theory considers the demand fluctuations as cyclic downturns and recommends actively adjusting government policies to bring stability. The monetarist theory views fluctuations in the money stock as the main source of economic fluctuations. Section II.1 and II.2 examine the effectiveness of the monetary policies and the effectiveness of the fiscal policies, respectively. Later, Section III compares these two theories with the perspective of the most severe depression: The Great Depression of 1929.

## II. THE DEBATE ON THE EFFECTIVENESS OF MONETARY AND FISCAL POLICIES

Every business cycle has two turning points of peak and trough, and two phases of recession and expansion. Recession or contraction is a period during which real GDP decreases. The peak is the highest point in real GDP before a recession. Trough is the lowest point of real GDP at the end of a recession. The expansion is the period between the trough of a recession and the next peak, consisting of a general rise in output and employment. The recovery is the early part of an economic expansion, immediately after the through of the recession. And boom is unusually rapid increase in real GDP, usually toward the end of an economic expansion (Taylor, 1995, p. 633). As for the depression, it is a period that takes longer time than that of the trough.

Keynesian-monetarist debate centers on the sources and remedies of the economic fluctuations or business cycles. Keynesian theory of business cycle focuses on volatile expectations. Expectations are the main source of business cycles. In other words, the impulse

in the Keynesian theory of the business cycle is expected future sales and profits. The higher (smaller) the expected future sales and profits, the higher (smaller) the new investments will be. Expectations are volatile since future is hardly forecasted. What will happen in the future cannot be quantified but can be just guessed. Keynesian theory does not imply that expectations are irrational. It rather implies that since future sales and profits are impossible to anticipate, business people might be rational to take a view about them based on rumors, guesses, intuition, and instinct. They might be also rational by reshaping their expectations based on new information (Parkin, 1996, p. 412). The monetarist theory of business cycle emphasizes on money stock as the main source of economic fluctuations. The impulse in monetarist theory of the business cycle is the growth rate of money. An increase in money growth leads to an expansion and a decrease in money growth leads to recession (Parkin, 1996, p. 414). Keynesian theory states that the monetary policies are less effective than the fiscal policies, whereas, monetarist theory emphasizes the direct effect of the monetary policies rather than the fiscal policies in determining the fluctuations of output level.

## II.1 THE EFFECTIVENESS OF MONETARY POLICIES

Keynesian theory focuses on aggregate spending and its components. The extreme Keynesian theory assumes that prices and wages are downward inflexible, resulting as a horizontal aggregate supply (AS) curve till the full employment level of real output ( $Y_f$ ). AS curve then becomes vertical, this means that it is independent of price level, at  $Y_f$ . Aggregate demand (AD) is subject to periodic changes caused by changes in the determinants of aggregate demand. AD has no effect on price level but determines the equilibrium output level ( $Y_e$ ). In other words, the intersection points of AD and horizontal AS determine the  $Y_e$  of the economy. Economies are in general at equilibrium below the  $Y_f$  level. Therefore, in order for economies to reach the equilibrium at  $Y_f$  level, AD should be increased. If, for some reasons, economies are at equilibrium above the  $Y_f$  level, which denotes a nominal increase in  $Y$ , AD, in this case, should be decreased. The basic Keynesian equation is

$$Y = C + I + G + (X-M) \quad (1)$$

where  $Y$ ,  $C$ ,  $I$ ,  $G$  and  $X-M$  indicate the real output, private consumption, gross investment, government spending and net exports, respectively.  $C$  is a function of disposable income ( $Y_d$ ) and average propensity to consume (APC) tends to decrease as  $Y_d$  increases. In a closed economy, when each term of the equation above is divided by  $Y$ , equation becomes,

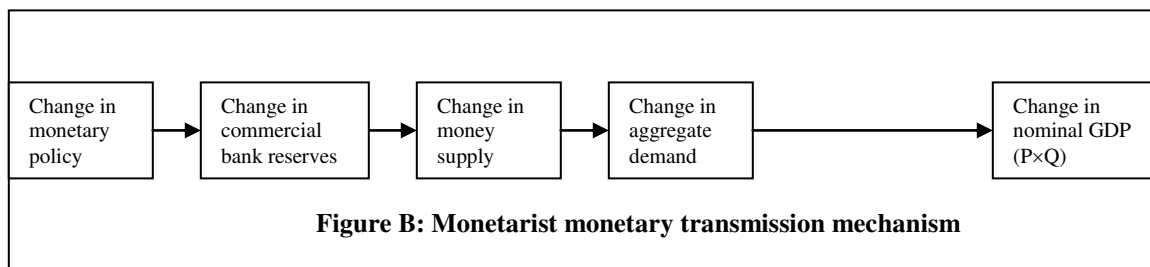
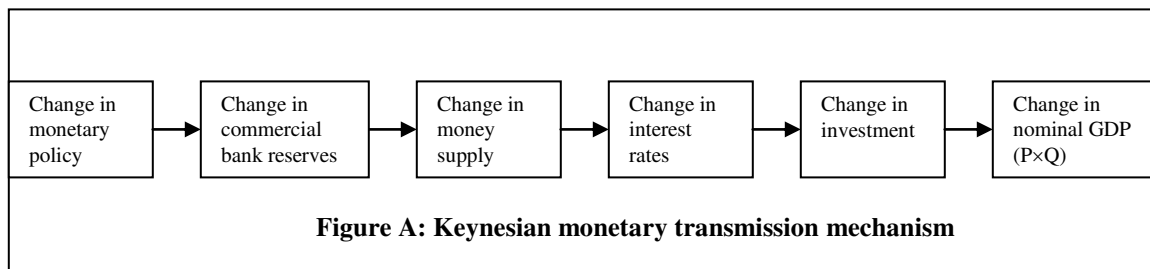
$$1 = C/Y + I/Y + G/Y \quad (2)$$

In the case, as  $Y_d$  increases, with given  $I/Y$ , APC will decline, and hence  $Y$  will decline. This decline results in a recession. In order to prevent economies such recessions,  $G$  should increase as much as increase in  $G$  offsets the decline in APC. Therefore, in Keynesian theory, government spending and hence the fiscal policy play an important role in determining the levels of  $Y$  and employment. Monetarists, on the other hand, focus on the importance of money supply. The basic equation of monetarism is the equation of exchange shown below.

$$MV = PQ \quad (3)$$

where  $M$ ,  $V$ ,  $P$  and  $Q$  denote the supply of money, the velocity of money, the physical volume of all goods and services produced and the price level of an economy in a given period respectively. Monetarists claim that the money and, hence, the monetary policy are important factors in determining the  $Y$  and employment levels.

As is shown in Figure A, according to the Keynesian monetary transmission mechanism, an expansionary monetary policy will increase the commercial bank reserves. Increase in reserves will result in increase in money supply. Increase in money supply causes the interest rates to fall. As interest rates decline, investment will increase. And finally, increase in investment brings about increase in nominal  $Y$  through the multiplier effect. If economy is activating at a level below the  $Y_f$ , nominal  $Y$  will increase through increase in real  $Y$ . When economy is operating at  $Y_f$ , increase in investment will increase nominal  $Y$  by increasing the price level.



Source: McConnell and Brue, **Macroeconomics: Principles, Problems and Policies**, Thirteenth Edition, McGraw-Hill, Inc., New York, 1996, p. 321.

Here in this analysis, Keynesian theory regards investments rather than money as primary factor that affects the  $Y$ . Further there are two extreme cases to show the monetary policy ineffectiveness. First, if the elasticity of demand for money in response to the interest rates is infinite (a horizontal LM curve), secondly, if the elasticity of investment with respect to the interest rates is zero (a vertical IS curve), monetary policy will have no effect on real  $Y$ . As it is depicted in Figure B, monetarist theory believes the direct transmission mechanism from

monetary policy to  $Y$ . In this theory expansionary monetary policy and increase in money supply drive up the demand for all real or financial assets as well as output. Monetarist theory regards monetary policy and money supply rather than investment as primary factors that affect the  $Y$ . Further there are two extreme cases to show the monetary policy effectiveness. First, if the elasticity of demand for money in response to the interest rates is zero (a vertical LM curve), secondly, if the elasticity of investment with respect to the interest rates is infinite (a horizontal IS curve), monetary policy will have strong impacts on real  $Y$ .

This direct link from increase in money to increase in output results in real increase in output in the short run (or vice versa). In the long run, however, since equilibrium usually occurs at  $Y_f$  level, this direct link yields only an increase in price level. Keynesian theory also indicates that an increase in aggregate demand including demand for capital goods at  $Y_f$  level will only cause an increase in price level. On the other hand, in Keynesian theory, equilibrium occurs usually at the levels below the  $Y_f$ .

Besides the different views of Keynesian and monetarists on transmission mechanism, one can easily translate the Keynesian equation 1 to monetarist equation 3. In equation 3,  $MV$  refers the total amount of money spent on final goods produced in a year. Therefore,

$$MV = C + I + G + (X-M) = PQ \quad (4)$$

$$MV = C + I + G + (X-M) = PY \quad (5)$$

In other words, the term of  $Q$  in monetarist equation refers the real  $Y$  and the term of  $PQ$  refers nominal  $Y$ . Therefore  $PQ$  in monetarist equation coincides with the  $Y$  of Keynesian equation in nominal terms. Then, what is the difference between them? Actually the difference stems from the velocity of money,  $V$ . It can be redefined as follows.

$$V = PQ / M, \text{ or } V = PY / M \quad (6)$$

Equation (6) equals the value of how many times the average money unit (i.e., average dollar) is spent on goods and services produced in a given year. Monetarists argue that the velocity is stable. It means that the change in  $V$  is gradual and predictable. Further, the change in money supply does not change the  $V$ . In short, change in  $V$  is independent of change in money, gradual and anticipated. The logic behind these assumptions is that the demand for money is stable, independent of money supply and dependent on nominal  $Y$ . The implication of these assumptions is that the money can affect the nominal  $Y$  directly as is shown in Equation (7).

$$M(V_0) = PQ \quad (7)$$

As for the Keynesian theory,  $V$  is subject to change and unpredictable. The logic behind these assumptions is that people demand for money with not only transactions motive but also precautionary and speculative motives. The higher is the demand for money with transactions

motive, the higher is the  $V$ . On the other hand, the speculative demand for money has a zero value of  $V$ . The value of  $V$  will, then, depend on how people divide their demand for money into transactions and speculations. The higher is the relative weight of transactions, the greater will be  $V$ , or vice versa. Therefore, the Keynesian theory rejects the direct link from  $M$  to  $PQ$ . As an extreme case, for instance, let people demand for money with only speculative motive. In this case, change in money will have no effect on nominal  $Y$ .

To understand this issue better, one can use the function of real demand for money ( $M_d/P$ ). In Keynesian theory, the demand for money with transactions and precautionary motives is an increasing function of  $Y$  and the demand for money with speculative motive is a decreasing function of interest rates. In equilibrium, real supply of money ( $M/P$ ) is equal to  $M_d/P$ . Then the total demand for money becomes,

$$M/P = M_d/P = f(Y, i), \text{ and } P/M = 1/f(Y, i) \quad (8)$$

$$PY/M = Y/f(Y, i) = V \quad (9)$$

Equation (8) implies that as interest rate ( $i$ ) increases (decreases), the total demand for money will decrease (increase). Equation (9) indicates that as interest rate goes up, the value of denominator [ $f(Y, i)$ ] will go down and the value of velocity of money will go up as well. Equation (9) also implicates that the velocity of money tends to increase as the supply of money decreases. In other words,  $V$  has a positive correlation with the interest rate and negative correlation with the supply of money. Therefore,  $V$  is not stable.

Friedman, who is a leading economist of monetarism, assumes that the demand for money is the increasing function of the permanent income ( $Y_p$ ).

$$M/P = M_d/P = f(Y_p), \text{ } P/M = 1/f(Y_p) \quad (10)$$

$$PY/M = Y/f(Y_p) = V \quad (11)$$

Equation (11) states that the velocity of money is equal to the ratio of real income to the permanent income. This ratio is predictable and hence,  $V$  is stable. The statements from Equation (1) through Equation (11) indicate that Keynesian theory believes that supply of money affects the  $Y$  through interest rates and investments, whereas, monetarist theory claims that the supply of money alters the  $Y$  directly. Of course, these conclusions are subject to change from short term to long term and depend on whether the economy is below or the above the full employment level of output. These details are already given above.

The monetarist belief that the supply of money alters the  $Y$  directly (through change in aggregate demand) does not necessarily mean that monetarists suggest expansionary or tight monetary policies to change the level of  $Y$ . Although monetary policy can affect real  $Y$  and employment in the short run, the time when the monetary policy will show its effect is so ambiguous and variable that such a policy is difficult to conduct.

Therefore, monetarists suggest a monetary rule that yields a fix increase in the money supply over the time to match the average increase in real Y. In other words, policymakers should increase the money supply smoothly at a rate consistent with the economy's long-run average growth rate (Roger, Leroy and Miller, 1994, p. 362). In AS-AD analysis, such a monetary rule yields an increase in AD which is equal to increase in AS. Hence, price level remains constant. Keynesian theory, however, does not credit this monetary rule, since it does not guarantee that shift in AD will equal to that of AS. Because of instability of AD, it may shift more or less than the AS (McConnel and Brue, 1996, p. 330).

The debate between Keynesian and monetarists is not restricted by only the effectiveness of monetary policies. They debate also on the effectiveness of fiscal policies. The details of this debate are given in Section II.2.

## II.2 THE EFFECTIVENESS OF FISCAL POLICIES

Keynesian theory asserts that fiscal policy is more powerful than the monetary policy in stabilizing the economy. Government expenditures (G), transfer payments (Tr) and taxes (T) have a multiplier effect on Y through private consumption. In order to depict the Keynesian theory, one can derive the multiplier effect through income equation of a closed economy.

$$Y = C + I + G \quad (12)$$

$$C = \alpha + \beta(Y - tY + Tr) \quad (13)$$

$$I = \phi - \eta(r) \quad (14)$$

where  $\alpha$  and  $\phi$  represent the constant terms of C and I, respectively.  $\beta$ ,  $t$  and  $\eta$  are marginal propensity to consume, marginal tax rate and the sensitivity of I to the r, respectively.

$$Y = \theta(\alpha + \beta Tr + \phi - \eta r + G) \quad (15)$$

$$\theta = \frac{1}{1 - \beta(1 - t)} \quad (16)$$

$$\frac{\partial Y}{\partial G} = \theta \quad (17)$$

One can see from the Equation (17) that the increase in G will increase the Y via multiplier effect given in Equation (16).

On the other hand, monetarists argue that fiscal policies are weak and have crowding-out effect on private investments. An expansionary fiscal policy, say an increase in autonomous G,



with given taxes, leads a budget deficit, which is in turn, leads government to borrow. This borrowing will increase the demand for money (demand for loans), drive up interest rates and crowd out private investment which otherwise would have been profitable. The solution of Equation (15) in terms of  $r$  can display the increase in  $r$  through increase in  $G$ .

$$r = \frac{\alpha + \beta Tr + \phi + G}{n} - \frac{Y}{\theta n} \quad (18)$$

Equation (15) is the IS curve and Equation (18) is another representation of IS in terms of  $r$ . In IS-LM analysis, as tax revenues are given, if  $G$  increases, the IS shifts to the right and intersects LM curve at a higher point. At this point, inflation will rise faster than the constant growth rate of money stock with the consequence that the real money supply will fall, shifting the LM curve to left. Therefore in the short run, the output might be higher, but, in the long run, will remain same. Given a constant monetary stance, the increase in  $G$  is financed by borrowing from the public. This will raise the supply of bonds, lower their price and raise the  $r$  in turn. The higher  $r$  crowds out the private investment (Carlin and Soskice, 1990, pp. 88-89).

Keynesian theory actually does accept that some investment might be crowded out. This negative effect of this small amount of crowding out on  $Y$  might be negligible, since the effect of an expansionary fiscal policy on  $Y$  is substantial. Keynesian theory mentions, however, about a possible crowding-in effect. Government might run a budget deficit by either a reduction personal income tax or an increase in  $G$ . In the first case, this massive tax cut will increase consumption and hence induce investments. In the second case, increased  $G$  will stimulate AD and hence stimulate more investment.

Which one has a higher effect, crowding-out or crowding-in? The answer of this question depends basically on two factors: The total amount of loanable funds and the shapes of the demand for money curve and the investment demand curve. If the amount of loanable funds is fixed, there will be a substantial crowding-out effect. Otherwise, crowding-in effect might dominate the crowding-out effect (Slavin, 1996, pp. 274-276).

The extreme Keynesian theory assumes that the demand for money curve is relatively flat and the investment demand curve is relatively steep. Financing the government's deficit will increase the demand for money, shifting the demand for money curve to the right in money market. This shift to the right results in a very modest increase in the interest rates and a very small decrease in the investments.

In contrast to Keynesian theory, monetarists' view is that the demand for money curve is relatively steep and the investment demand curve is relatively flat. Financing the government's deficit will increase the demand for money, shifting the demand for money curve to the right in money market. This shift to the right brings about large increase in the interest rates and large decline in the investments. Since an expansionary fiscal policy (deficit) causes a reduction in investments and since reduction in investments weaken and cancel the stimulus of fiscal policy, monetarists regard fiscal policy as weak and ineffective. In Friedman's article (1962, p. 114),

the view of inefficiency of fiscal policy is clearly set forth:

**The simple Keynesian analysis implicitly assumes that borrowing the money does not have any effects on other spending. There are two extreme circumstances under which this can occur. First, suppose people are utterly indifferent to whether they hold bonds or money, so that bonds to get the \$100 can be sold without having to offer a higher return to the buyer than such bonds were yielding before...In Keynesian jargon, there is a “liquidity trap” so people buy the bonds with “idle money.” If this is not the case, and clearly it cannot be indefinitely, then the government can sell the bonds only by offering a higher rate of return on it. A higher rate will then have to be paid also by other borrowers. This higher rate will in general discourage private spending on the part of would-be borrowers. Here comes the second extreme circumstance under which the simple Keynesian analysis will hold: if potential borrowers are so stubborn about spending that no rise in interest rates however steep will cut down their expenditures, or, in Keynesian jargon, if the marginal efficiency schedule of investment is perfectly inelastic with respect to the interest rate...If neither assumption holds, the rise in government expenditures will be offset by a decline in private expenditures...**

Tobin's article (1966, p.188), in contrast to Friedman, points out the necessity of the injections by running the budget deficit as follows:

**...Three facts stand out. First, the federal government has big deficits when corporations run surpluses or small deficits and vice versa. Second, government surpluses and business deficits reach their peaks in periods of economic expansion, when industrial capacity is heavily utilized, as in 1947-48, 1951-52, and 1956-57. Third the combined deficit or corporate business and federal government is greater now than the early postwar years... The federal government will not succeed in cutting its deficit by steps that depress the economy, perpetuate excess capacity, and deter business firms from using outside funds. Raises taxes and cutting expenses seem like obvious ways to balance the budget. But because of their effects on private spending, lending, and borrowing, they may have exactly the contrary result. Likewise, lowering taxes and raising government expenditures may so stimulate private business activity and private borrowing that the federal deficit is in end actually reduced.**

Apart from these theories, the dynamics of budget deficit might be much more difficult to manage in practice. The effects of tax cuts and increase in  $G$  are subject to change. Either consumption stimulated by reduction in taxes or public spending could start the real recovery, but, in either case, the public deficit would worsen. There are two cases (or dangers) and a solution to avoid them. In the first case, the stimulus is insufficient and the economy remains in

recession with higher deficits. In the second case, the stimulus starts a recovery and revives investment. The ideal policy is to start the recovery with tax cuts and expenditure increases and, as investment revives, to raise taxes or to cut expenditure to make room for it. The timing in this kind of system is not easy to get right (Allsopp, 1996, pp. 9-10).

This debate on the effects of fiscal policies will bring two extreme proposals. The monetarists' proposal is that the government should not intervene the economy via its expenditures or tax revenues, while the Keynesian proposal suggests an active intervention. These two extreme proposals, in turn, will bring the question of whether there is an optimal government-spending amount or not. Goods and services provided by the government might be directly useful to the extent that they are consumed by the public; however, the provision may be inefficiently high or low.

### III. KEYNESIAN-MONETARIST DEBATE ON THE GREAT DEPRESSION OF 1929

The purpose of this section is to examine the reasons of the Great Depression in the perspective of Keynesian and monetarists' approaches. Monetarists assert that the depression resulted from a contraction of the money supply in the early 1930's. Keynesians argue that the depression was caused by a fall in autonomous spending, particularly investment and, within investment, housing, spurred a general collapse.

The sequential order of recession, trough, expansion and peak and degree of these fluctuations are subject to change. According to business cycle, before the recession, America experienced some booms (peaks) such as bull market boom. These booms were associated with such events as the California gold rush and railroad construction, economy rose to a peak of war production, World War II. Historically, the peak or upper turning points was often associated with a financial panic, such as the panic of 1907 or Black Thursday October 24, 1929. Table 1, for instance, illustrates the duration of recessions and expansions of US economy.

As is seen from the Table 1, the most obvious severe depression was of course the Great Depression. The depression began in 1929. First stock market crashed in the fall. Stock prices, which had increased drastically in 1928 and 1929, collapsed suddenly in October, Black Thursday, October 24, 1929, has become the symbol of the depression. The Great depression left on indelible impression on the American mind. Between 1929 and the depth of depression in 1933, real GNP declined by 30% and the unemployment rate shot up to almost 25% of the labor force. Many of those thrown out of work could find no other job. More than two thousand banks went bankrupt and industrial production index fell down from 188 to 100.

Government officials tried to prevent the Recession of 1929. The Hoover administration announced that there was no emergency and moved to consult with businessmen. In early 1930, stock prices stopped declining, production appeared to pick up slightly, and wage rate remained same. Despite all of these severe negative developments of bankruptcies, deflationary forces, unemployment and decrease in GNP, a recovery again appeared in early 1931 (Temin, 1979,

pp. 1-2). The severe extends of Great Depression are clear but the reasons for the depression are not clear. One reason, often and correctly given, is the absence of expansionary macroeconomic policy between 1929 and 1933. The monetary and fiscal policies that could have been effective in moderating or eliminating the contraction were not used (Temin, 1979, p. 6).

**Table 1: Duration of Recessions and Expansions of US Economy**

Recession Peak-Trough	Duration of Recession (months from peak to trough)	Decline in Real GDP (percent from peak to trough)	Duration of Next Expansion (months from trough to peak)
Jan 1920-Jul 1921	18	8.7	22
May 1923-Jul 1924	14	4.1	27
Oct 1926-Nov 1927	13	2.0	21
<b>Aug 1929-Mar 1933</b>	<b>43</b>	<b>32.6</b>	<b>50</b>
May 1937-Jun 1938	13	18.2	80
Feb 1945-Oct 1945	8	11.0	37
Nov 1948-Oct 1949	11	1.5	45
Jul 1953-May 1954	10	3.2	39
Aug 1957-Apr 1958	8	3.3	24
Apr 1960-Feb 1961	10	1.2	106
Dec 1969-Nov 1970	11	1.0	36
Nov 1973-Mar 1975	16	4.9	58
Jan 1980-Jul 1980	6	2.5	12
Jul 1981-Nov 1982	16	3.0	92
Jul 1990-Mar 1991	8	1.4	43

Source: Taylor, John, B., **Economics**, Houghton Mifflin Company, Boston, 1995, p. 634.

Keynesians following The General Theory regard investment behavior as containing a substantial autonomous component; investment responds to the state of business confidence incorporates the effect of episodes of speculation overbuilding. The instability and unpredictability of fixed investment behavior, of course, forms the basis of Keynesian support for an activist and interventionist role for government fiscal policy. In contrast, monetarists do not single out investment for special attention. Changes in aggregate private spending, consumption and investment alike are attributed to prior fluctuations in the supply of money. Monetarists give a strong role for the money supply as a primary determinant of investment behavior (Gordon, p. 268).

Keynesians assert that since desired investment and consumption fell, depression occurred. This fall was caused by construction and stock market. Construction, which was a substantial component of investment, fell because the housing stock exceeded the demand of 1925. And consumption fell drastically after 1929 because of the stock market crash. The fall in these components of autonomous spending then produced a fall in real income and prices by the process (Temin, 1979, p. 9).

According to monetarists, first banking panic in late 1930 caused a fundamental change in behavior that was encouraged by the panics of the following years. The demand for deposits (bank liabilities) on the part of the public fell, and the demand for excess reserves on the part of banks rose, as both individuals and banks tried to protect themselves from bank failures and panics. This change in behavior by both banks and individuals led to a decrease in the supply of money. This decrease in the supply of money brought about downward pressure on real income and price (Temin, 1979, p.10).

Although these two approaches explain the depression with same macroeconomic data, there are two differences between them. First, while Keynesians assert that the banking panics are the result of the depression rather than causes, monetarists argue that banking panics led to depression. And whereas Keynesians believe that the fall in investment and consumption are independent of deflationary events, monetarists say that the fall in investment and consumption are the result of the depression. Secondly, Keynesians argue that stock of money fell because the demand for money fell. Monetarists say that the stock of money fell because the supply of money fell.

According to Friedman and Schwartz (1963, p. 351), the bank failures had two different aspects. First, they involved capital losses to both their owners and their depositors, just as the failure of any other group of business enterprises involved losses to their owners and creditors. Secondly, given the policy followed by the Reserve System, the failures were the mechanism through which a drastic decline was produced in the stock of money. For the United States second was vastly more important than the first.

The total stock of money fell by over one-third from 1929 to 1933; commercial bank deposits fell by over 42 per cent. Therefore bank failures were very important point in the explanation of depression, because they were the mechanism through which the drastic decline in the stock of money was produced, and because of the stock of money plays an important role in economic developments (Friedman and Schwartz, 1963, p. 352).

As for the origins of the bank failures, Friedman and Schwartz (1963, p. 355) say that, the great surge in bank failures that characterized the first banking crisis after October 1930 may possibly have resulted from poor loans and investment realized in twenties. However, according to Friedman and Schwartz (1963, p. 358), the main responsible for the depression was Federal Reserve. Federal Reserve, first, couldn't understand the connection between bank failures, contraction of deposits, and weakness of the bond markets. Second, Federal Reserve officials had no feeling of responsibility for nonmember banks. Third, the failures for that period were concentrated among smaller banks and, since the most influential in the system were big city bankers who deplored the existence of smaller banks. Mainly, as a failure, since they couldn't understand the connections, they decreased the money supply.

Shortly, in terms of business cycles, monetary behavior appeared a cyclical peak in August 1929 to the cyclical trough in March 1933, the stock of money fell by over a third. Bad

management of Federal Reserve - beside the poor loans and investment- caused the failures and bank failures led to depression because of decreasing in money supply. Decreasing in money supply and high interest rates caused that more than two thousand banks went bankrupt and Industrial Production Index fell down from 188 to 100.

Temin (1979, pp. 169-170) rejects the Friedman and Schwartz's argument. He claims, first, if there had been deflationary monetary pressure, it would have had to be visible in the financial markets, and, this pressure would have shown up sharply in short-term interest rates. But at the time when the monetary pressure was applied to the economy, a temporary rise in these interest rates should have been visible. If the pressure was too strong, the rise in interest rates should have been dramatic clearly. But there was no rise in short- term interest rates in 1929-1931. Secondly, although the nominal stock of money fell in 1930 and 1931, prices fell as well. They fell so rapidly, in fact, that the stock of real balances did not fall; it was higher in 1931 than in 1929 by a variety of measures. If the fall in the nominal stock of money was deflationary, prices were sufficiently flexible to absorb this pressure. In the absence of other influences, nominal income should have fallen, but not real income. For these two reasons, then, proposition that monetary forces caused the depression must be rejected.

According to Temin (1979), depression was the results of expenditures, particularly consumption, than the result of autonomous bank failures. Fall in income, the collapse of the stock market, and the poor harvest in 1929, happened to depress consumption in 1930. The large decline in consumption expenditures for both durable and non durable goods in 1930 had profoundly depressing effect for the economy.

Elmus Wicker (1980, pp. 573-574) tries to explain the depression with another factor which monetarists and Keynesians left out. This factor is The Caldwell and Company. Failure of Caldwell and company precipitated the crisis. The firm controlled the largest chain of banks in the South with assets in excess of \$200 million and also the largest insurance group in the region with assets totaling \$230 million. Caldwell had a controlling interest in banks, insurance companies, industrial enterprises, investment trusts, and newspapers where combined assets equaled on-half billion dollars. The collapse of the company spread out all the economy. Wicker (1980) indicates that although Caldwell and Company was not a causality of depression, the failure in November of Caldwell affiliated banks can be attributed to financial circumstances that predate the Great Depression. Wicker (1980) rejects the Peter Temin's conjuncture that declining prices of lower-grade corporate bonds and the agricultural situation played an important causal role.

David C. Wheelock (1989, pp. 453-454) explores that reaction function estimates of open-market policy from 1924 to 1929 support the arguments of Friedman-Schwartz that Federal Reserve responded to fluctuations in economic activity and sought to limit stock market speculation. These estimates also supported the Wickers' argument (1966) that Federal Reserve desired to assist Great Britain's return to the gold standard.

According to Wheelock (1989), the inappropriate monetary policy followed by Federal

Reserve accelerated the Great Depression. The main inappropriate policy was the open-market operations in government securities to moderate economic fluctuations, to limit stock market speculation, and to assist Great Britain to return to gold standard. However, Wheelock's findings indicate that during the 1920's open-market operations did not affect the volume of Federal Reserve credit outstanding, and Federal Reserve continued this ineffective strategy during the depression, which can account for the failure of the system to pursue a vigorous counter cyclical policy in the depression. Therefore, Wheelock (1989, pp. 457-465) also rejects the Temin's (1979) argument that there was no rise in short-term interest rates in 1929-1931. He argues that open market sales caused high interest rates and that open market purchases eased credit conditions by reducing the need of banks to borrow reserves.

Gerald Epstein and Thomas Ferguson (1984) support Temin (1979) and criticize the monetarist arguments of Friedman-Schwartz (1963), Brunner and Meltzer (1968) and Wicker (1965). Epstein and Ferguson (1984, p. 972) highlight the discussion of whether interest rates were high in depression in contrast of monetarists' argument indicating that interest rates were low. Since earnings on the overall portfolios reflect the interest rates on assets accumulated in previous months, current security rates would have their major effects on portfolio earnings some months after they were purchased. So, for instance, returns in December of 1932 would reflect the interest rates on securities purchased in the summer of 1932. There were great reductions in the net earnings facing banks in the Chicago district in the half-year ending December 1932, reflecting the earlier decline in interest rates. This, hence, supports the Temin's argument (1979), which there was no in short term high interest rates in 1929-1931 and criticizes the monetarists' argument that interest rates were high in the depression.

Epstein and Ferguson also reject the monetarists' argument that Federal Reserve was mainly responsible for the depression. Epstein and Ferguson (1984, pp. 960-961) point out that yet, not only the Federal Reserve, but also virtually all other central banks, failed to prevent the depression. How far can one press an argument that a deceased Benjamin Strong (New York Federal Reserve Bank Governor) was responsible for all of this? Brunner and Meltzer, and Wicker assert that the Federal Reserve did not understand the difference between real and nominal rates. This relies on an implication that is difficult to believe that bankers were unable to see that real interest rates were high but that the industrialists, who joined them on the boards of the Federal Reserve banks, were (That is why they did not borrow, according to the argument). References to the real nominal distinction among top bankers, economists, and leading members of the Federal Reserve System were also far more common than the work of Brunner and Meltzer suggests.

Overall, Robert J. Gordon (1986) tests the Keynesians and monetarists argument and reaches the interesting results. He states that members of these groups will be disappointed with his results. Gordon (1986, pp. 322-327), in his econometrical study, concludes that there are two basic impulses in the business cycle, real and financial, with the negative innovations in real investment playing a dominant role in 1929-30, and with the nature of the negative financial innovations shifting from a contribution of the monetary base in 1929-30 to one by the money multiplier.

Gordon's findings (1986, p. 324) support the view that autonomous innovations in structures investment are an important driving force in the business cycle. This supports the Keynesian argument that there is a large role for "own innovations" in the empirical explanation of investment spending. However at the same time Keynesian would expect a relatively small role for feedback from monetary variables (Gordon, 1986, p. 269). This expectation of Keynesians is not supported by Gordon's findings because Gordon (1986, p. 321) finds that there are substantial negative innovations of  $-20.5\%$  in the real monetary base beginning as early as 1929. Second the largest cumulative negative residuals in the period 1931-1932 are contributed by the money multiplier, supporting a role for bank failures and the credit contraction. This obviously supports the monetarists' claim which monetary variables played the very important role in the depression. However, monetarists would expect, at the same time, to find that the money supply causality is prior to fixed investment. Gordon's findings say that there was a large negative innovation in IGD, investment in durable, and ISTR, investment in structures. These values were  $-25.2\%$  and  $-17.2\%$  respectively in 1929.

Gordon's findings don't support the Temin's argument that non-durable consumption played a key role in the initial stages of the Great contraction. Gordon (1986, p. 321) finds no evidence that negative residual for non-residuals consumption played a key role in the initial stages of the Great Contraction. And, because Gordon (1986, p. 324) treats major swings in structures in investment as autonomous, monetarists also were disappointed. Shortly, Gordon's findings support not only one approach but also two of them. Beside this, Gordon's findings make not only Keynesians disappoint but also monetarists because of explanations indicated above.

In addition to the general approaches to macroeconomic analysis advocated by Keynesian and monetarists, two additional groups of economist have made a special effort to understand investment behavior. The "Neoclassical School" emphasizes the changes in relative price or "user cost" of capital as a dominant influence, together with changes in output, on fluctuations in fixed investment. The user cost of capital is the primary channel by which both monetary policy (working through interest rates) and fiscal policy (working through investment tax incentives) influence the flow of investment spending.

The final group consists of advocates of Tobin's "Q" approach, in which the influence on investment of forward-looking expectations regarding output and capital costs is captured by a single variable, Q, which is the ratio of the market value of capital to its reproduction cost. Since the dominant portion of fluctuations in Q is accounted for by changes in stock market prices, stock market is an important factor as explaining investment behavior (Gordon, 1986, p. 268).

Gordon's findings (1986, p. 324) from his study of investment behavior provides more support for the general views of the Keynesians and monetarists than it does for the views of specialists in the investment process, the neo-classics and Q advocates. Gordon finds that the user cost of capital for businesses and the real interest rate for households are insignificant or have the wrong signs in every equation for interwar years.



## SUMMARY AND CONCLUSION

One can conclude that there were two main sources of depression; real and monetary variables. Keynesians explain the depression with real variables and monetarists explain the depression with monetary variables. The conflict between the Keynesian and monetarist approaches can be related to the distinction in business cycle analysis between “impulses” and “propagation mechanism.” Keynesians argue for activist monetary and fiscal policy responses to counter serially correlated investment impulses, while monetarists view investment as part of the propagation mechanism that carries the influence of autonomous money supply impulses from their origin in the government sector to their effect on private sector spending.

In this study, several empirical and theoretical evidences have been examined. Wicker (1966, 1980), Friedman and Schwartz (1963) and Wheelock (1989) find that the financial and monetary variables played the most important role in depression. On the other hand, Temin (1979) and Ferguson (1984) find that the real variables – consumption and investment- played the most important role in depression. Finally, Gordon, in his study (1986), both supports and criticizes these approaches.

From the view of World War II and the following decades, Keynesians seem to have more appropriate tools in the explanation of Great Depression. During this period, economies experienced their highest peak (big increases in income and employment levels and great increases in nations' wealth) due to Keynesians policies. But at the end of 1960's, Keynesian policies collapsed. Monetarists offered their proposals to rein in the recession of 1970's. And after 1980, Reagan's administration applied the monetarists' proposals together with Laffer's policies known as supply side or Reaganomics. But as a conclusion, they could not succeed in solutions of the some macroeconomic problems either. Indeed, the supply side proposals succeeded to decrease the inflation at the expense of increasing money supply and increase the productivity by decreasing the share of government sector. They could not cope, however, with the unemployment and budget and foreign trade deficits.

Today, some studies still stress demand-oriented Keynesian analysis; others follow the monetary rule; and some others view the mix of monetary and fiscal aspects together in analyzing the business cycles. Some of the most recent studies regard unanticipated fluctuations as the main source of the cycles, whereas some others regard both anticipated and unanticipated fluctuations as impulses of the cycles. In this respect, new classical theory and the new Keynesian theory mainly focus on anticipations in business cycle studies. As for the real business cycle theory, they regard random fluctuations in productivity as the main source of business cycles. There are some other studies, just named in the introduction section, also. Of course each one is required a detailed research to be able to figure out their successes of explanation the cycles.

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