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# MONETARY Vs. FISCAL POLICY An Ongoing Controversy In Retrospect

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Despite decades of debates and empirical research, the economics profession is as uncertain as ever about the dynamic effects of both monetary and fiscal policies. The empirical model based on Vector Autoregression Approach discussed in the paper suggests that while monetary policy may have become less effective over the years, it is still more effective than fiscal policy.

## I

The world economy's apparently sluggish response to too exceptionally low interest rates during most of 1990 and 1992 has led some analysts to speculate that monetary policy may be less effective than in the past. These economists argue that fiscal stimulus is necessary to fight the recent slow growth of the economy. In response the industrial democracies are inflating the shape of a fiscal stimulus package.

Speculation on the effectiveness of monetary and fiscal policy is not new. The issue is at the top of the monetarist-Keynesian debate of the 1960s to the early 1980s. The monetarist such as Milton Friedman held that monetary policy was much more important to the economy than fiscal policy while the Keynesians believe and argued from the beginning that fiscal policy was dominant.

Evidence from this ongoing controversy, however, is, if at all, of limited help to today's politicians responsible to enact policies. Moreover, numerous changes in the world economy have occurred in the last twenty-five years.

Therefore, in this paper, an attempt will be made to first review the ongoing debate between Milton Friedman's monetary policy and the Neo-Keynesian fiscal policy, and secondly to discuss the practical evidence from the U.S. economy's performance in terms of each of these policies in the recent years.

## II

The ongoing controversy and debate over the relative significance of the monetary and fiscal policy is not new, as it has been an ongoing phenomenon for a long time among economists. Always the monetarists believed that money supply plays a crucial part in declaring the course of the economy's performance. To support their argument, they used evidence from their empirical studies to show that changes in the existing money supply at any given time had a more substantial effect on the economy than changes in fiscal variables. On

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the other hand the Keynesians believed vehemently that to stabilize the economy and to stimulate it, fiscal policy is indispensable. They outright claimed that methodological problems including the 'MEC' (marginal efficiency of capital) invalidated the results of the monetarist research.

In 1963, Milton Friedman and David Meiselman<sup>1</sup> attempted the very first empirical study to determine which of the two positions was correct. They examined simple correlations between consumption and money supply and between consumption and fiscal variables. According to their interpretation of the correlation between these two sets of variables they found that consumption levels were correlated to a much larger extent with money supply than with the fiscal variables. And furthermore, they concluded that this piece of evidence is consistent with the monetarist position that monetary policy is more important than fiscal policy.<sup>2</sup>

However in 1965, the Keynesians, Alberto Ando and Franco Modigliani, argued that Friedman and Meiselman's evidence failed to show that monetary policy was more important than fiscal policy. First, Ando-Modigliani attacked Friedman-Meiselman's choice of sample periods on the grounds that the results may be sensitive to the inclusion of the World War II years. Second, Ando-Modigliani criticized Friedman-Meiselman's focus on contemporaneous relationships, reasoning that any complete study of the effectiveness of policy must account for lags in the effect of policy changes.<sup>3</sup>

Their most serious and direct criticism was that Friedman-Meiselman failed to allow for feedback from the economy to the measures of monetary and fiscal policy. One specific example of this problem arose in the way in which Friedman-Meiselman measured their fiscal variables (called autonomous expenditures). To this Ando-Modigliani pointed out that the monetarist's measure of autonomous expenditure included the fiscal deficit, which tends to move inversely with economic activity.<sup>4</sup> To illustrate as to why this is a problem, let us suppose the government increases autonomous expenditure to increase economic activity. The increase in economic activity so induced will reduce the deficit by generating tax revenue, thereby offsetting part of the initial rise in autonomous spending. As a result, according to Kretzmer<sup>5</sup>, a correlation between economic activity and autonomous spending would appear weak even if the initial increase in spending had a strong effect on output.

Subsequently during the 1970s and 1980s the dialogue between the supporters of the monetarist views and that of the Keynesian fiscal enthusiasts was down to a whisper without either side yielding to the other. As such, even to this day, the monetarists continue to believe monetary policy to be dominant, whereas the Keynesians believe fiscal policy to be the main driving force in directing the economy on an expansionary trajectory.

Because of this polar position the policy makers find it difficult to draw any conclusions on the effects of monetary and fiscal policy. The result is a half-hearted attempt in implementing both monetary and fiscal policy, resulting in a less than satisfactory outcome of the economy's growth-trend.

In most of the industrialized nations the framing and implementation of monetary policy is left in the hands of the central bank, or in the case of the

U.S., the Federal Reserve System while fiscal policy remains in the hands of the legislative bodies. In the case of the United States specifically the architect of the monetary policy is the Federal Reserve open market operations. The operations consist of affective Federal Funds rate, the discount rate at which banks lend reserves to one another for short periods of time. Changes in federal funds rates can affect real output. For example, according to Khan a decrease in the federal funds rate can lead to a decrease in other interest rates, thereby raising both consumption and investment demand.<sup>6</sup>

In the middle 1980s structural changes in the U.S. economy may have changed the impact of monetary policy on real output. These changes include removal of interest rate ceilings on bank deposits, the development of more nonbank sources of financing for firms, and the growth of foreign sectors.<sup>7</sup>

The net result of these structural changes had led to dilution of the effectiveness of the monetary policy. For example, in the early 1980s and before, the removal of interest rate ceilings on bank deposits tended to reinforce the effect of higher interest rate on economic activity. When market rates rose above the ceilings, disintermediation, or in other words the flight of funds from the banking system virtually became the ongoing *modus operandi*. Thus with a reduced supply of loanable funds, bank loans for purchases such as homes and consumer durables became less available, reinforcing the effects of higher interest rates. Thus the removal of interest rate ceiling on bank deposits has probably reduced the real effects of monetary policy.<sup>8</sup>

In the similar vein, the growth of more nonbank sources of financing for firms has also probably weakened the effects of monetary policy. Investment by firms that depend largely on bank loans is sensitive to their availability. With the structural changes, now more firms can turn to commercial paper market, or the swap market to help finance their investment. Thereby increase in interest rate may have less effect on business investment.<sup>9</sup>

Also the tremendous growth in the foreign sector has impacted the effect of monetary policy. As the flight of capital in the foreign sector has become more integrated in recent years, and the U.S. share of the world economy has correspondingly regressed, monetary policy has become less effective in the U.S. relative to other industrialized countries.<sup>10</sup>

Overall in the long run as a direct consequence of these developments, particularly with an aggressive growing foreign sector, the floating exchange rate has become more important for output determination, because it affects the level of both exports and imports. If the expansionary monetary policy causes the value of the dollar to fall, exports should increase and imports should decrease, thereby expanding real output.

Now on the fiscal policy side, in recent years the U.S. economy has changed in several ways that have no doubt strained fiscal policy and its impact on the real output of the economy. For in the overall priorities transfer payments have grown in leaps and bounds and the peace dividends brought about by the end of the cold war have reduced the defense spending in the federal budget. In addition the famous tax cuts of the Reagan administration have contributed to the unprecedented growth in federal budget deficit as shown below in Table 1.

TABLE 1: Past Budgets : What Reagan Wanted<sup>11</sup>*(in billions of dollars)*

| Fiscal Year  | 1982           |                | 1983           |                |
|--|----------------|----------------|----------------|----------------|
|  | Reagan Request | Actual Outcome | Reagan Request | Actual Outcome |
| Defense  | \$200.3        | \$216.5        | \$263.0        | \$245.0        |
| Agriculture  | 5.6            | 24.2           | 6.9            | 35.2           |
| Education  | 36.3           | 26.6           | 18.8           | 28.2           |
| Social Security  | 150.4          | 148.0          | 168.6          | 184.1          |
| Federal pensions, unemployment and other income security | 129.2          | 121.6          | 89.0           | 135.4          |
| Net interest   | 89.9           | 85.0           | 112.5          | 89.8           |
| Total budget authority                                   | 840.9          | 813.9          | 830.7          | 888.1          |
| TOTAL OUTLAYS  | \$757.6        | \$745.7        | \$773.3        | \$808.3        |
| TOTAL REVENUES   | \$711.8        | \$617.8        | \$661.6        | \$600.6        |
| DEFICIT  | (\$45.8)       | (\$127.9)      | (\$107.2)      | (\$207.8)      |

| Fiscal Year   | 1984           |                | 1985           |                |
|---|----------------|----------------|----------------|----------------|
|   | Reagan Request | Actual Outcome | Reagan Request | Actual Outcome |
| Defense   | \$280.5        | \$265.2        | \$313.4        | \$294.7        |
| Agriculture   | 13.5           | 11.8           | 12.1           | 27.5           |
| Education   | 25.6           | 31.6           | 27.5           | 32.4           |
| Social Security   | 173.4          | 178.5          | 198.5          | 199.5          |
| Federal pensions unemployment and other income security | 110.8          | 138.8          | 139.2          | 164.1          |
| Net interest  | 103.2          | 111.1          | 116.1          | 129.4          |
| Total budget authority                                  | 927.2          | 949.9          | 1031.2         | 1074.1         |
| TOTAL OUTLAYS   | 862.5          | 851.8          | 940.3          | 946.3          |
| TOTAL REVENUES  | 659.7          | 666.5          | 745.1          | 734.1          |
| DEFICIT   | (\$202.8)      | (\$185.3)      | (\$195.2)      | (\$212.3)      |

| Fiscal Year | 1986           |                |
|-------------|----------------|----------------|
|             | Reagan Request | Actual Outcome |
| Defense     | \$322.2        | \$289.1        |

|   |                  |                  |
|---|------------------|------------------|
| Agriculture   | 13.0             | 29.9             |
| Education   | 26.9             | 30.3             |
| Social Security   | 207.0            | 207.1            |
| Federal pensions unemployment and other income security | 144.1            | 158.0            |
| Net interest  | 142.5            | 136.0            |
| Total budget authority                                  | 1060.0           | 1072.8           |
| <b>TOTAL OUTLAYS</b>                                    | <b>\$973.7</b>   | <b>\$989.8</b>   |
| <b>TOTAL REVENUES</b>                                   | <b>\$793.7</b>   | <b>\$769.1</b>   |
| <b>DEFICIT</b>  | <b>(\$180.0)</b> | <b>(\$220.7)</b> |

**Reagan Budget at a Glance**

(In billions of dollars)

| Fiscal Year                                  | 1987             | 1988             |
|--|------------------|------------------|
| Defense                                      | \$282.2          | \$297.6          |
| Foreign aid and other international programs | 14.6             | 15.2             |
| Energy, environment and natural resources    | 17.7             | 17.5             |
| Agriculture                                  | 31.1             | 26.3             |
| Health and education                         | 69.5             | 67.3             |
| Social Security and Medicare                 | 279.5            | 292.4            |
| Federal pensions, unemployment and other     |                  |                  |
| Income Security                              | 124.9            | 124.8            |
| Veterans' benefits                           | 26.7             | 27.2             |
| Revenue sharing and other fiscal assistance  | 1.9              | 1.5              |
| Other outlays                                | 67.1             | 60.8             |
| Net interest                                 | 137.5            | 139.0            |
| Offsetting receipts                          | -37.1            | -45.1            |
| <b>TOTAL OUTLAYS</b>                         | <b>\$1015.6</b>  | <b>\$1024.3</b>  |
| <b>TOTAL REVENUES</b>                        | <b>\$842.4</b>   | <b>\$916.6</b>   |
| <b>(DEFICIT) SURPLUS</b>                     | <b>\$(173.2)</b> | <b>\$(107.8)</b> |

The same breakdown is true at the local and state levels as shown in Tables 2 and 3. (Source: Bureau of the Census, Government Finances in 1989-90).

TABLE 2: Consolidated budget of all state governments, 1990

| Tax receipts                             | Billions<br>of dollars | Percent of total |
|--|------------------------|------------------|
| Sales, excise, and gross receipts, taxes | \$147                  | 49               |
| Personal income taxes                    | 96                     | 32               |
| Corporate income taxes                   | 22                     | 7                |
| Property taxes                           | 6                      | 2                |
| Death and gift taxes                     | 4                      | 1                |
| Licenses, permits, and others            | 25                     | 8                |
| <b>Total receipts</b>                    | <b>\$300</b>           | <b>100</b>       |
| Expenditures                             | Billions<br>of dollars | Percent of total |
| Public Welfare                           | \$83                   | 25               |
| Education                                | 75                     | 23               |
| Highways                                 | 44                     | 13               |
| Health and hospitals                     | 42                     | 13               |
| Public safety                            | 30                     | 9                |
| All others                               | 59                     | 18               |
| <b>Total expenditures</b>                | <b>\$300</b>           | <b>100</b>       |

TABLE 3: Consolidated budget of all local governments, 1990

| Tax receipts                        | Billions<br>of dollars | Percent of total |
|-------------------------------------|------------------------|------------------|
| Property taxes                      | \$150                  | 75               |
| Sales and excises                   | 31                     | 15               |
| Personal and corporate income taxes | 11                     | 6                |
| Licenses, permits, and others       | 9                      | 4                |
| <b>Total receipts</b>               | <b>\$201</b>           | <b>100</b>       |
| Expenditures                        | Billions<br>of dollars | Percent of total |
| Education                           | \$217                  | 43               |
| Welfare, health, and hospitals      | 66                     | 13               |
| Environment and housing             | 56                     | 11               |
| Public safety                       | 50                     | 10               |
| Transportation                      | 34                     | 7                |
| All other                           | 81                     | 16               |
| <b>Total expenditures</b>           | <b>\$504</b>           | <b>100</b>       |

These changes leading to increasing deficits in the makeup of federal, state, and local budgets may be in a way responsible to reduce the impact of the fiscal policy on the performance of the U.S. economy. For example in the 1950s and 1960s, a one per cent change in government spending across the board would have implied larger changes in defense spending than in transfer payments, thus leading to more jobs and hence a broader tax base. By a one per cent change today in fiscal budget would include large changes in transfer payments and less impact on the tax base, causing further deficits.<sup>12</sup>

Thus the growing budget deficits of the recent years have made policy markers less optimistic to rely on fiscal policy to influence the economy. A great deal of public and private attention has focused on fiscal deficit. As a matter of fact a great portion of the debate during the 1992 Presidential election was focused on the growing budget deficit, (thanks to the independent candidate Ross Perot for making this a major issue). In this highly changed environment it has become more difficult to propose new expenditures or new taxes or to engage in aggressive fiscal policy. There are already signs that President Clinton is backpeddling above his promise to pare the deficit in half. Indications are given in the 1992 budget agreement that congress is to offset any expenditure increases either through tax hikes or tax reductions so that the budget deficit does not grow.<sup>13</sup> In other words, fiscal policy could lose even more importance in the 1990s in the U.S.

### III

In this section attention will be drawn to an empirical model using a vector autoregression (VAR) analysis as developed by Dan Roberts, Jacqueline Lewis and Peter E. Kretzmer to research the methodological problems encountered in most of the earlier studies and debates with regard to the effectiveness of fiscal policy vs monetary policy. The variables they have used are quarterly measures of real output, as measured by the growth rate of industrial production using real GNP. Inflation on the other hand is measured by the growth rate of the CPI. In addition, the specific monetary policy variables used are the growth rate of the monetary base and the ninety day treasury bills (the monetary base has been chosen over M1). The fiscal policy variables are the change in total government expenditure as a percentage of GNP and the government budget deficit as a fraction of GNP.

Subsequently VAR analysis covers two thirty-year subsamples. The results are then compared as to the effectiveness of monetary policy and fiscal policy. The first subsample in the empirical model extends from the second quarter of 1950 through the fourth second quarter of 1962 through the fourth quarter of 1991.

To summarize, causality tests are used to determine whether the effects of the policy variables on output are statistically significant; if the coefficients on the monetary policy variables are significant but the coefficients on the fiscal policy are not, the test would suggest that monetary policy is more effective than fiscal policy. From the results obtained from the empirical study, it is clear

that the effects of monetary policy on output, while not that strong, probably exceed the effects of fiscal policy as shown in Table 4.

TABLE 4: Causality — test for U.S. Fiscal Policy Effectiveness between 1952:Q2 to 1979:Q4 and 1962:Q2 to 1991:Q4<sup>14</sup>

| Sample Period     | Monetary | P. Value | Fiscal | P. Value |
|-------------------|----------|----------|--------|----------|
| 1950:Q2 — 1979:Q4 | 1.64     | .07      | 1.05   | .42      |
| 1962:Q2 — 1991:Q4 | 1.76     | .05      | 1.46   | .13      |

Note: Column 2 reports F-statistic for the hypothesis that monetary variables do not affect output. Column 4 reports F-statistics for the hypothesis that Fiscal variables do not affect output. Column 3 and 5 report the associated significant level for the hypothesis test.

It is clear from the above table that the coefficients on the monetary policy variables are statistically significant at the 10 per cent significant level in the first sub-period and at the 5 per cent significance level in the second sub-period. In contrast, the fiscal policy variables do not have a statistically significant effect on output in either sub-period.

No doubt, the causality tests indicate whether policy variables have a statistically significant effect on output. However they do not know the relative size of these effects. Therefore in order to discern scientific authenticity the variance decomposition of output can be used to compare the size of monetary policy effect with the size of the fiscal policy effect. The variance decomposition results are shown in Table 5 below.

TABLE 5: Variance Decomposition of output for the United States between 1980:Q2-1979:Q4 and 1962:Q2-1991:Q4<sup>15</sup>

| Sample Period     | Monetary | Fiscal |
|-------------------|----------|--------|
| 1950:Q4 — 1979:Q4 | 28       | 17     |
| 1962:Q2 — 1991:Q4 | 23       | 17     |

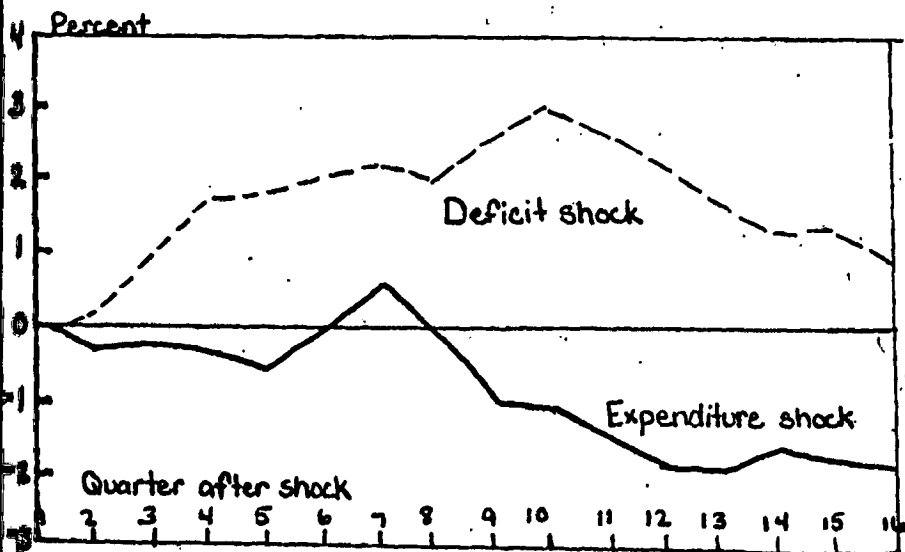
In the above table it is clear that as shown in the first column, the estimated effect of monetary policy shows the percentage of the variance of output explained by monetary base changes and treasury bill rate changes. The second column estimates the effect of fiscal policy, and shows the variance of output explained by expenditure and budget deficits.

As for the effectiveness of fiscal policy expenditure and deficit shocks, the following Chart 1 shows how output responds when increased by 1 per cent of GNP.

As indicated in the above chart, only the second sub-period is shown for these fiscal changes, because the causality tests clearly showed that fiscal policy was statistically insignificant in the first sub-period. Whereas the response of output to the increase in government expenditure is slightly positive after two years but appears to be negative in the longer run.



CHART 116: Effect of Expenditure and Deficit Shocks on Output



IV

Even to this day monetarist and Keynesian proponents of fiscal policy do not see eye to eye when it comes to the question of deciding the relative importance of monetary vs fiscal policy. However one has to agree as to the result of the empirical model based on VAR which suggests that while monetary policy may have become less effective over the years, it is still more effective than fiscal policy.

In conclusion it is safe to reiterate that despite decades of debates and empirical research, the profession is as uncertain as ever about the dynamic effects of both monetary and fiscal policies. One source of uncertainty stems from the fact that economists implicitly make extreme economic assumptions when they identify monetary or fiscal variables. On the monetary side at one extreme, the money supply function is assumed to be perfectly inelastic with respect to nominal interest rates; so money supply shocks are identified with innovations in the stock of money. On the other extreme, the supply function is taken to be perfectly elastic; so supply shocks are identified with innovations in short term nominal interest rates. On the side of fiscal policy, its major undoing is the very political process it is subjected to. For fiscal policy is a product of the political arena, where national interest is always next to selfish narrow segmented interest plus the fact that it is subject to lengthy delay, its effectiveness is rather compromised. For example in 1960, when President Kennedy asked for a tax cut of \$11 billion to pull the economy out of the ongoing recession, the congress took almost eighteen months to approve the tax, a wrong measure, for by that time the U.S. economy was already on its way to recovery under the stimulus provided by the Vietnam War.

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