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REVIEW

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The 1972 National Economic Plan: An Experiment in Fiscal Activism

by KEITH M. CARLSON

THE NATIONAL economic plan for the eighteen month period ending June 30, 1973 has been presented to Congress and the public. The Administration's plan is presented in the form of three documents – the *Federal Budget,* the *Economic Report of the President,* and the *Annual Report of the Council of Economic Advisers.*[1] Included in these documents is a proposed Federal budget program designed to be consistent with targets for total spending (GNP), output, prices, and employment. General recommendations are also made for the role of monetary actions by the Federal Reserve System in the overall economic plan.

The goals for the U.S. economy in the months ahead are stated most explicitly by the Council of Economic Advisers (CEA) in their *Annual Report.*[2] The goals consist of a reduction in the annual rate of inflation to less than 3 percent by the end of 1972, and a reduction of unemployment to near 5 percent of the civilian labor force by the end of the year. The Administration believes that to achieve these targets an increase in total spending for goods and services (GNP) of 10.5 to 11 percent for the year ending fourth quarter 1972 is required. This rapid increase in total spending is to be facilitated by an increase in Federal expenditures of about 11 percent, reductions in tax rates attributable primarily to the Revenue Act of 1971, and "[a]n abundant supply of money and other liquid assets and favorable conditions in money markets . . ."[3]

This article analyzes the Administration's national economic plan within the context of the St. Louis model.[4] First, the 1971 economic plan is compared with the record to obtain some perspective. Then the 1972 economic plan is examined in terms of feasibility and internal consistency. Since the evaluation is conducted with reference to the St. Louis model, the conclusions reflect the particular characteristics of that model.[5]

Evaluation of the 1971 Economic Plan

Confronted with unacceptably rapid inflation, high unemployment and a continuing deterioration of our balance-of-payments position, the Administration announced several major policy changes on August 15, 1971.[6] Included were suspension of the convertibility of the dollar into gold and other reserve assets, imposition of a surcharge on imports, a proposed removal of the Federal excise tax on automobiles, and introduction of a system of mandatory price-wage controls.

The announcement of these policy changes reflected obvious dissatisfaction with the course of the economy as it appeared at that time. In February the Administration had laid out a very ambitious set of economic goals, and apparently by late summer was convinced that sufficient progress was not being made toward

[1] *The Budget of the United States Government, Fiscal Year Ending June 30, 1973* (Government Printing Office, 1972), and *Economic Report of the President,* together with *The Annual Report of the Council of Economic Advisers* (Government Printing Office, 1972).

[2] 1972 CEA *Report,* Chapter 3.

[3] *Ibid.,* p. 106.

[4] The focus of this article is on the stabilization aspects of the Administration's economic program. The program is actually much broader in scope, involving discussion of resource allocation, income distribution, and international economic affairs.

[5] Leonall C. Andersen and Keith M. Carlson, "A Monetarist Model for Economic Stabilization," this *Review* (April 1970), pp. 7-25.

[6] For an economic review of 1971, see Norman N. Bowsher, "1971 – Year of Recovery and Controls," this *Review* (December 1971), pp. 2-10.

their achievement.[7] The purpose of the following section is to determine the source of the discrepancy between the Administration's economic plan and the actual course of the economy.[8]

Economic Goals vs. Realizations

The CEA *Report* of a year ago projected a 9 percent increase in total spending from 1970 to 1971. The actual increase was 7.5 percent. This error of 1.5 percent was the largest since the CEA underestimated GNP in 1966 by 1.7 percent. Although the 1971 error was relatively large by recent standards, it actually was small when compared to the last forecast made for a full expansion year following a recession, that is, 1962 (see Table I).

Table I

CEA Projection Accuracy of Total Spending (GNP)

	CEA Projected Change	Actual Change*	Error**
1962	9.4%	6.7%	2.7%
1963	4.4	5.4	—1.0
1964	6.5	6.6	—0.1
1965	6.1	7.5	—1.4
1966	6.9	8.6	—1.7
1967	6.4	5.6	0.8
1968	7.8	9.0	—1.2
1969	7.0	7.7	—0.7
1970	5.7	4.9	0.8
1971	9.0	7.5	1.5
Average absolute error			1.2

* Based on figures given in the CEA *Report* in the year following the forecast year.

** These are unadjusted errors; i.e., no adjustment is made for deviations of policy realizations from plans, or for major strikes.

A comparison of the actual changes in the components of GNP for 1971 with the CEA projections (see Table II) indicates that the primary source of error was an overestimation of personal consumption by about $12 billion. The CEA also overestimated the accumulation of business inventories and net exports. Somewhat surprisingly perhaps, the CEA underestimated the increase in business fixed investment as well as Federal purchases.

Table II

Projected and Actual Changes in Total Spending (GNP) and Components — 1970 to 1971

(Billions of Dollars)

	CEA Projection	Actual*	Error
Personal Consumption	$58.3	$46.4	$11.9
Business Fixed Investment	3.4	6.1	—2.7
Business Inventories	4.5	—0.7	5.2
Residential Construction	11.3	10.2	1.1
Federal Purchases	—1.7	0.4	—2.1
State & Local Purchases	14.1	13.2	0.9
Net Exports	0.4	—2.9	3.3
Total Spending (GNP)**	$88.5	$72.7	$15.8

* Based on preliminary data in the 1972 CEA *Report*.

** Components may not add to total because of rounding.

The 1971 projections for real product, prices, and unemployment were closely tied with the total spending projection (see Table III). In early 1971, the CEA believed that forces had been set in motion to reduce the inflation rate quickly and significantly so that the expected rapid advance of total spending could be manifested in a sharp increase in real product and an associated decline in unemployment.

Table III

Projected and Actual Changes in Economic Activity — 1970 to 1971

	CEA Projection	Actual	Error
Total Spending (GNP)	9.0%	7.5%	1.5%
Real Product	4.6	2.7	1.9
Prices	4.2	4.6	—0.4
Unemployment Rate	0.4	1.0	—0.6

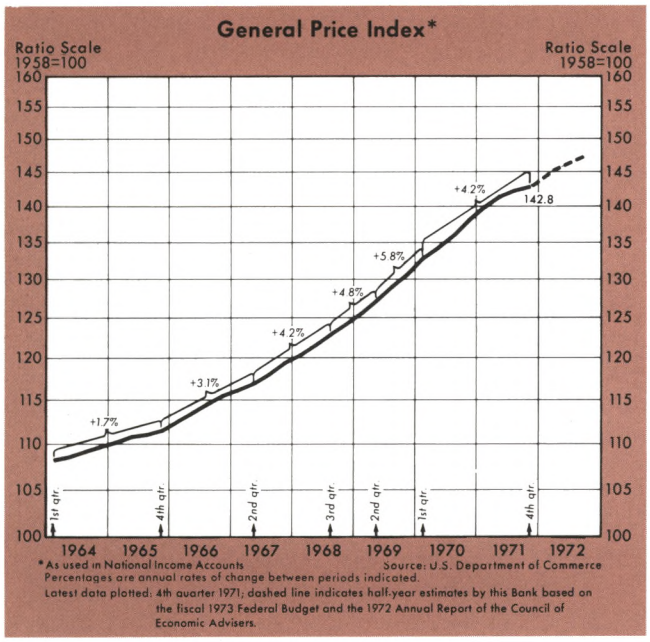
Table III shows that the CEA projected an increase in real product of 4.6 percent; the actual increase was 2.7 percent. Unemployment was expected to average above the 1970 level of 4.9 percent, but was projected to decline from 6 percent early in 1971 to below 5 percent of the labor force by late in the year. Unemployment held steady near 6 percent during the year. And finally, prices were expected to slow to a 4.2 percent rate of advance. Prices rose 4.6 percent from 1970 to 1971, even when the marked slowdown in prices in the second half of the year (reflecting price-wage controls) was included.

Policy Plans vs. Realizations

As a first step in examining the source of error underlying the CEA projections for 1971, policy plans are compared with realizations. Table IV gives planned and actual changes in the NIA budget from

[7] The 1971 CEA *Report* attracted more attention among professional economists than other reports of recent years. See the articles on the 1971 *Report* by M. J. Bailey, R. Eisner, A. P. Lerner and J. L. Stein in *The American Economic Review* (September 1971), pp. 517-37, and O. H. Brownlee, "The Economic Report of the President, 1971," *Journal of Money, Credit and Banking* (November 1971), pp. 833-39.

[8] For a discussion of the 1971 economic plan as it was originally presented, see Keith M. Carlson, "The 1971 National Economic Plan," this *Review* (March 1971), pp. 11-19.



1970 to 1971 on both an actual and a high-employment (that is, cyclically adjusted) basis.[9] From the standpoint of examining fiscal plans after the fact, the high-employment budget is more relevant than the NIA budget because it nets out the influence of GNP

Table IV

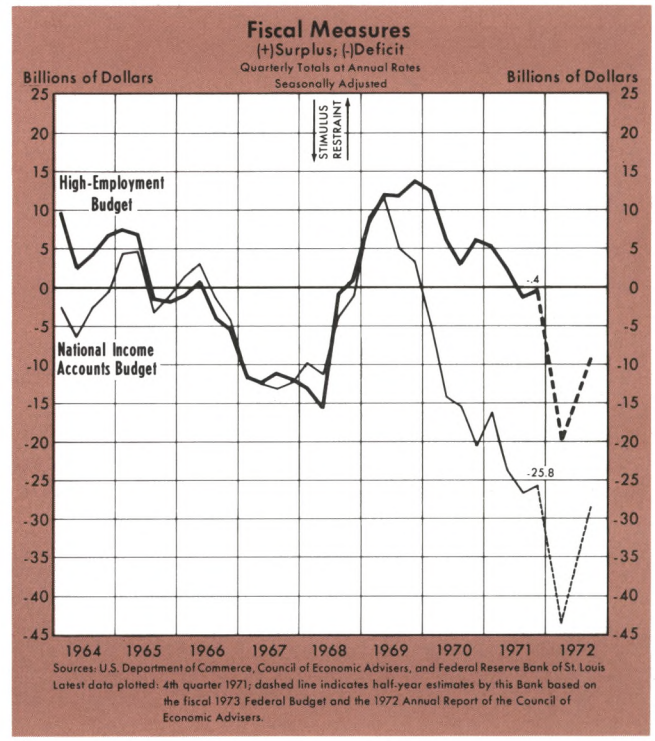
Planned and Actual Changes in Federal Budget — 1970 to 1971

(Billions of Dollars)

	Budget Plan	Actual	Error
NIA Receipts	$ 17.6	$ 7.2	$+10.4
NIA Expenditures	17.4	16.9	+ 0.5
NIA Surplus or Deficit	$+ 0.2	$— 9.7	$+ 9.9
High-Employment Receipts	$ 15.6	$ 9.3	$+ 6.3
High-Employment Expenditures	16.1	14.9	+ 1.2
High-Employment Surplus or Deficit	$— 0.5	$— 5.6	$+ 5.1

Note: Federal budget plans for 1971 were estimated by this Bank and published in the quarterly release "Federal Budget Trends," prepared by this Bank on February 20, 1971.

forecasting error on the movement of budget receipts and expenditures. On a high-employment basis the CEA underestimated the size of the fiscal stimulus; there was more fiscal stimulus than planned as the high-employment budget registered a surplus of $5.1 billion less than called for by the budget plan of early 1971. The source of this stimulus is traceable to a combination of factors including a planned increase in the social security tax base which was not implemented, a larger than planned increase in social security benefits, and policy changes of the Administration's own making as associated with the August 15 policy announcement.

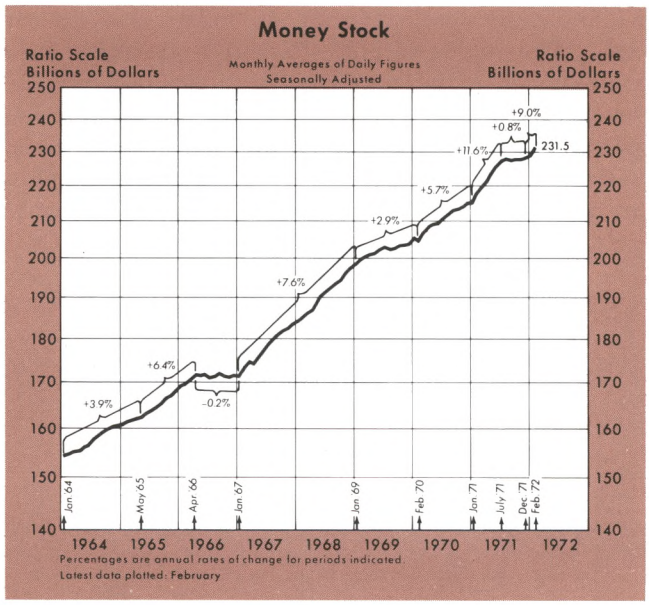


The CEA assumption about monetary actions in 1971 was never made perfectly explicit. Based on amplifying statements by CEA members to the press and in testimony before Congress, a 6 percent expansion of money was considered the minimum necessary to achieve the CEA goals. The actual increase in money was 6 percent from late 1970 to late 1971, although this increase for the year consisted of a rapid 10.3 percent rate of increase in the first 7 months, followed by essentially no growth in the last 5 months.

Analysis Based on St. Louis Model

The fact that the CEA projections of economic expansion in 1971 still proved overly optimistic, despite the fact that key policy variables actually showed more stimulus than planned, suggests that their economic plan was not internally consistent. To quantify the sources of error further, some alternative simulations with the St. Louis model are presented. Two cases are considered: estimates based on (1) changes in money

[9]All references to the high-employment budget are estimates prepared by this Bank. For details on this Bank's procedures for estimating the high-employment budget, see "Technical Notes on Estimating the High-Employment Budget," available on request from the Research Department of this Bank.



and expenditures as assumed by the CEA in early 1971, and (2) actual changes in money and expenditures.

Table V indicates that the St. Louis model was not projecting a rise of total spending nearly as rapid as the CEA, even with their assumptions about the policy variables. Furthermore, even though the St. Louis model foresaw less buoyant total spending growth, it projected a more rapid increase in prices than the CEA, and thus substantially less expansion in real output.

Table V

Projected Changes in Spending, Output, Prices and Unemployment — 1970 to 1971

	Total Spending (Billions)		Real Product	Prices	Unemployment Rate
CEA Projection (2/2/71)	$88.5	9.0%	4.6%	4.2%	0.4%
Actual	72.7	7.5	2.7	4.6	1.0
St. Louis Model Projections:					
Changes in money and Federal spending consistent with CEA assumptions	68.5	7.0	2.3	4.7	1.1
Changes in money and Federal spending as actually occurred	74.8	7.7	2.9	4.7	1.1

Note: St. Louis model projections are based on latest revised data, but coefficients are estimated through III/1970.

The course of the major economic variables in 1971 was captured well by the St. Louis model, as indicated by the "ex post" simulation using actual money and Federal expenditures. It should be pointed out, however, that without price-wage controls, the St. Louis model probably would have underestimated the extent of inflation. The persistence of unemployment near 6 percent throughout the year was forecast quite accurately by the St. Louis model.

The CEA erred significantly in their forecast of total spending, real product, prices and unemployment in 1971. This error cannot be traced to less policy stimulus than planned. These observations suggest that the CEA economic plan for 1971 overestimated the expected impact of stimulus from proposed monetary and fiscal actions.

The actions of the Administration in announcing policy changes on August 15 indicated possible recognition of this error, but those policy changes also reflected a belief that conventional monetary and fiscal actions were not capable of reducing inflation in an acceptably short period of time. Even though the CEA recognized (in their 1972 *Report*) the slowdown of inflation through second quarter 1971, mandatory price-wage controls were introduced to accelerate the decline.

The St. Louis model indicates that the economy moved as expected in 1971.[10] The rate of inflation was being reduced, although slowly, and the growth of real product was accelerating. Even though unemployment was not declining in 1971, the stage was being set for reductions in the future. The pattern of monetary expansion, although irregular, provided a net stimulus to the economy in 1971, and can be interpreted as having about the same economic impact as a steady 8 percent growth.[11] However, the pattern of rapid monetary growth followed by essentially no growth has set the stage for a different set of problems for economic policy in 1972 than might otherwise have occurred with a steady growth rate.

Economic Goals and Policy Plans for 1972

The Administration has set targets of about a 5 percent rate of unemployment and a 2.5 to 3 percent

[10]It should also be noted that the economy moved in accordance with the "consensus" of economic forecasts in 1971.

[11]See Keith M. Carlson, "Projecting With the St. Louis Model: A Progress Report," this *Review* (February 1972), fn. 6, p. 24.

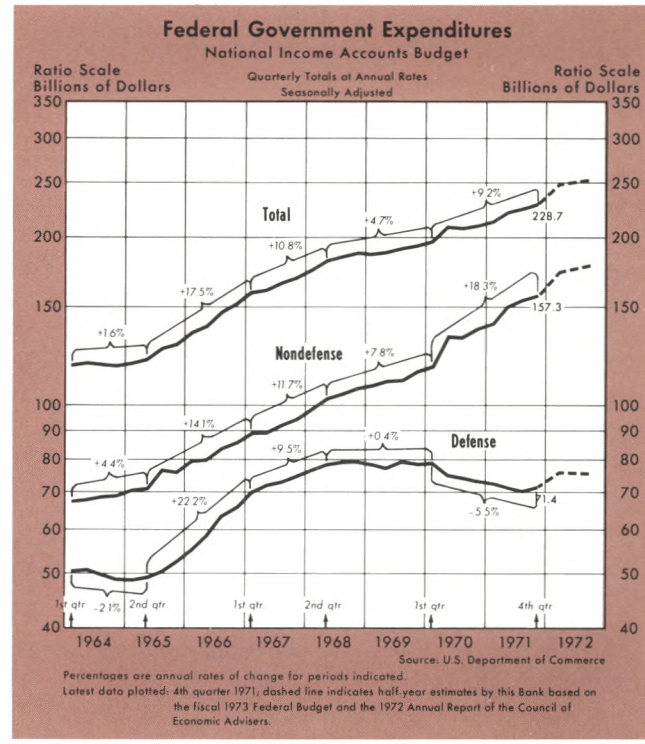
rate of inflation by the end of 1972. These targets represent a substantially less optimistic view of basic economic forces than had been held by the Administration a year ago. Last year the Administration set targets of 4.5 percent unemployment and a 3 percent rate of inflation by mid-1972. To achieve the 1972 targets, the Administration projects an advance in total spending of 9.4 percent from calendar 1971 to 1972, or slightly greater than the rate of increase projected for 1971. This section summarizes the Federal budget program for 1972, considers monetary policy recommendations in the CEA *Report*, then evaluates the Administration's plan with the aid of the St. Louis model.[12]

Federal Budget Program for 1972

The budget plan for calendar 1972 calls for a relatively large fiscal stimulus. As estimated by this Bank, a deficit in the high-employment budget of $14.4 billion is implied.[13] Relative to 1969-1971, the budget plan for 1972 is highly expansionary. Considering the size of the economy (as measured by potential GNP), the proposed fiscal stimulus for 1972 is about the same as experienced in 1967.

Expenditures – The budget plan includes a 13 percent increase in Federal expenditures on an NIA basis from calendar 1971 to 1972. This increase would be up sharply from the 8.2 percent average rate of advance from 1969 to 1971, but slightly below the 13.7 percent average rate of increase from 1965 to 1968.

Defense spending is projected to rise 6 percent in calendar 1972, after declining at a 4.6 percent average rate from 1969 to 1971. Nondefense spending, on the other hand, is planned to rise a very rapid 16 percent in 1972. This increase would follow increases of 16.1 percent in 1971 and 16.7 percent in 1970. From 1965 to 1969, nondefense spending increased at an 11 percent average rate. Projections of nondefense spending for 1972 include a pay raise for Government employees on January 1, a sharp increase in grants-in-aid to state and local governments (general revenue sharing) retroactive to January 1, a proposed increase in



social security benefits, effective July 1, and increased expenditures associated with a proposed reform of welfare programs.

Receipts – Federal receipts on an NIA basis are projected to rise by over $16 billion in 1972, or about 8.2 percent. This increase is expected to be large because incomes and profits are projected to advance rapidly.

When sources of receipts growth are considered, the GNP projections assume added importance. Table VI gives the sources of changes in receipts for 1972. Tax changes tending to reduce receipts include: (1) the continuing effect of the Tax Reform Act of 1969; (2) the effect of the Revenue Act of 1971, affecting

Table VI

Planned Changes in Federal Receipts — 1971 to 1972
National Income Accounts Budget
(Billions of Dollars)

Change in Total Receipts	$16.3
Change due to Growth	21.4
Change due to Tax Rate Adjustments	—5.1
Personal Tax and Surtax Receipts	—5.9
Corporate Profits Tax Accruals	—1.6
Indirect Business Tax and Nontax Accruals	—1.7
Contributions for Social Insurance	4.1

[12]Rates of increase projected for certain economic variables are not stated explicitly in the 1972 CEA *Report*. Where such increases are discussed, they are based on estimates made by this Bank.

[13]The level of the surplus or deficit in the high-employment budget is subject to considerable variation, depending on the nature of the assumptions underlying its estimate. See "Technical Notes on Estimating the High-Employment Budget," available on request from this Bank.

personal taxes via increased exemptions and deductions, corporate taxes through the job development tax credit, and excise taxes because of their removal from automobiles, and the suspension of the import surcharge. Changes in tax laws tending to increase tax receipts include: (1) expansion of the base for social security taxes from $7,800 to $9,000; (2) a proposal for additional expansion of the base from $9,000 to $10,200; and (3) a revision toward less liberal depreciation allowances. The combined effect of these changes in tax laws results in a decrease of receipts of $5.1 billion. Consequently, the projected $16.3 billion increase in receipts implies a $21.4 billion increase due to rapid economic expansion.

Table VII

Projected Changes in Total Spending (GNP) — 1971 to 1973

	1971 to 1972		1972 to 1973	
	(Billions)	Increase	(Billions)	Increase
CEA Projection (1/24/72)	$98.2	9.4%	$ —	—%
St. Louis Model Projection:				
1) With 6 percent money growth and Federal spending based on fiscal 1973 budget	77.0	7.4	71.2	6.3
2) With 8 percent money growth and Federal spending based on fiscal 1973 budget	84.0	8.0	92.6	8.2
3) With 6 percent money growth and Federal spending growth at a steady 9.7 percent rate	71.1	6.8	81.2	7.3
4) With 8 percent money growth and Federal spending growth at a steady 9.7 percent rate	78.1	7.5	102.5	9.1

Surplus/deficit position — The combined effect of increased expenditures and receipts is an increase in the deficit to $36 billion in calendar 1972 from $23 billion in 1971. Since the NIA budget is influenced by the projected pace of economic activity, a better measure of the expected economic impact of the budget program is the high-employment budget.

On a high-employment basis (as estimated by this Bank), the NIA budget is projected to be in deficit by about $14 billion in 1972. The $14 billion figure reflects an estimated $20 billion rate of deficit in the first half and a $9 billion rate in the second half. This fiscal stimulus for calendar 1972 is about the same as in 1967, when measured relative to potential GNP. However, the planned 1972 fiscal stimulus has substantially different economic implications than the stimulus in 1967. The 1967 stimulus occurred when there was very little slack in the economy, and thus contributed importantly to the development of inflationary pressures. The proposed fiscal stimulus for 1972 comes at a time when there is considerable economic slack, suggesting that total demand for goods and services can be expanded substantially without reviving inflationary pressures.

Monetary Policy Recommendations

The CEA again carefully avoids making any specific recommendations for monetary policy in 1972. Monetary policy plays a definite role in the economic plan, however, as the CEA indicates that the GNP increase of 9.4 percent is based on the assumption that the required monetary growth will be forthcoming.[14]

Though very general in their recommendations, the CEA does caution against extreme variations in the rate of change of the money stock.

> A similar precept of steadiness with respect to monetary policy would also help to avoid inflationary excesses of demand. The problem is that there is no single measure or objective combination of measures of monetary policy that is a completely satisfactory or completely superior measure of monetary policy by which a principle of steadiness could be calibrated. Judgment must be exercised. However, there is probably a presumption against extreme values or variations of the rate of change of narrowly defined money, i.e., currency plus demand deposits.[15]

Evaluation Based on St. Louis Model

The St. Louis model is used to focus on two considerations. (1) Is the projected increase in total spending consistent with the proposed stabilization policies?[16] (2) Are the price and unemployment goals consistent with the projected increase in total spending?

Feasibility of total spending goal — Table VII shows the results of the St. Louis model for the following four combinations of policies:

1) increases of Federal spending as proposed in the budget and an expansion of money at a 6 percent annual rate;

[14] 1972 CEA *Report*, p. 26.

[15] *Ibid.*, p. 112.

[16] For purposes of evaluation, steady growth rates for money of 6 and 8 percent are assumed. These alternatives are illustrative and are in no way directly attributable to the CEA, or the Federal Reserve System.

2) increases of Federal spending as proposed in the budget and an expansion of money at an 8 percent annual rate;
3) an increase of Federal spending at a steady 9.7 percent annual rate (this is the rate of increase of expenditures from second half 1971 to first half 1973) and an expansion in money at a 6 percent annual rate; and
4) an increase of Federal spending at a steady 9.7 percent annual rate and an expansion of money at an 8 percent annual rate.

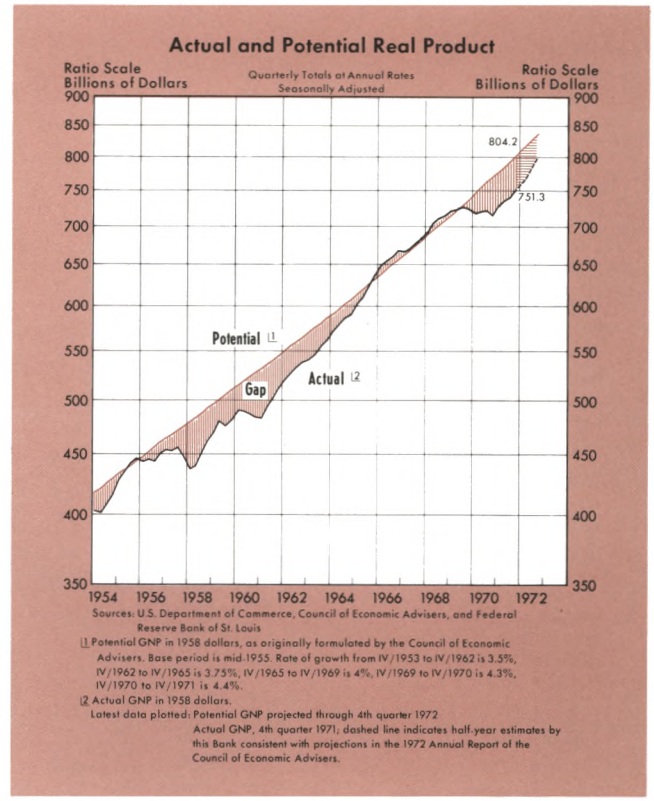
According to the St. Louis model, the proposed budget policies would not yield an increase in total spending of 9 percent even if money grew at a rapid 8 percent rate. This conclusion reflects the properties of the St. Louis model with respect to the impact of fiscal stimuli. According to the model, an acceleration of Federal spending has a positive impact on GNP for only two quarters, with the total effect receding to zero after 5 quarters. This property is in sharp contrast with other econometric models. Despite this substantial difference in the treatment of fiscal stimuli, the error in projecting GNP for the St. Louis model has averaged between $3 and $4 billion per year since 1965.

The combinations of policies in Table VII indicate that Federal spending based on the budget and 8 percent money growth would come closest to the CEA spending projection, though it would still fall short by a substantial amount.[17] The combinations based on steady growth of Federal spending yield a lower total spending projection in 1972 than those based on an expenditure pattern as given in the budget. However, a steady growth in Federal spending would imply a stronger growth in GNP in 1973 than if the pattern evolves as projected in the budget.

Implications of total spending goal — As a step toward examining the internal consistency of the Administration's overall economic plan, attention is focused on the price and unemployment projections. Without regard for how the total spending target is achieved, Table VIII on the following page shows the implied paths for real product, prices, and unemployment as given by the St. Louis model in comparison with the CEA. The St. Louis model result with 6 percent money growth is also included for reference.

These comparisons are influenced by assumptions regarding the success of price-wage controls. The

[17]Given the proposed budget program, the St. Louis model indicates that a 12 percent rate of increase in money beginning first quarter 1972 would be required to achieve the CEA projection of a 9.4 percent increase in total spending in calendar 1972. It should also be pointed out that GNP has grown as fast or faster than 9.4 percent in only one year (1966) out of the last twenty.



CEA has indicated considerable confidence in the controls, and has formed its targets with respect to prices, real product and unemployment accordingly.[18] The St. Louis model does not incorporate explicitly any effect for price-wage controls, but focuses instead on price trends in the absence of controls. St. Louis model projections of prices, which are not markedly different than those projected by the CEA, would suggest that the price-wage control program is not going to be subjected to great strains by the underlying course of monetary and fiscal actions.

The results for the year 1972 indicate that the St. Louis price projections are not markedly higher than the CEA's, even given their projected path for total spending. Where the difference may begin to appear significant is in 1973, though the CEA does not provide projections for calendar 1973. In other words, for 1972 the St. Louis projections for prices are roughly consistent with those projected by the CEA with a price-wage control program. The rate of inflation appears to be in the process of being reduced even in the absence of controls. It should be noted, however, that unless this implication is taken into account, there is a risk of setting the stage for severe strains on the price-wage control framework in 1973 if monetary and fiscal actions become unduly expansive.

[18]1972 CEA *Report*, p. 26.

Table VIII

Projected Changes in Spending, Output, Prices and Unemployment — 1971 to 1973*

(Percent)

	1972					1973				
	I	II	III	IV	Year	I	II	III	IV	Year
CEA Projection (1/24/72)**										
Total Spending	11.0	11.0	10.7	10.5	9.4	—	—	—	—	—
Real Product	5.4	7.7	7.7	7.9	5.9	—	—	—	—	—
Prices	5.3	3.1	2.8	2.4	3.2	—	—	—	—	—
Unemployment Rate	5.9	5.8	5.5	5.3	5.6	—	—	—	—	—
St. Louis Model Projections:										
1) With CEA total spending***										
Total Spending	11.0	11.0	10.7	10.5	9.4	10.4	10.2	10.0	9.8	10.4
Real Product	6.8	6.9	6.8	6.6	5.9	6.6	6.5	6.4	6.3	6.6
Prices	4.0	3.9	3.8	3.7	3.3	3.6	3.6	3.4	3.3	3.6
Unemployment Rate	6.0	5.8	5.6	5.4	5.7	5.3	5.1	4.9	4.8	5.0
2) With 6 percent money growth and government spending based on 1973 budget										
Total Spending	8.9	8.6	5.4	4.6	7.4	5.6	7.4	8.0	7.7	6.3
Real Product	4.7	4.7	1.8	1.3	4.0	2.5	4.6	5.6	5.6	3.3
Prices	4.0	3.8	3.6	3.3	3.2	3.0	2.6	2.3	2.0	2.9
Unemployment Rate	6.0	6.0	5.9	6.1	6.0	6.3	6.5	6.4	6.3	6.4

* All figures, except for the unemployment rate, are annual rates of change. The unemployment rate is unemployment as a percent of labor force.

** Estimates of the quarterly projections were made by this Bank, and were designed to be consistent with the CEA annual projection. This particular quarterly pattern is illustrative and not directly attributable to the CEA.

*** Total spending estimates for 1973 are simple extrapolations of the CEA projection for 1972, with allowance for some slight deceleration.

goals, a large fiscal stimulus to total spending has been proposed. Affirming a belief in the success of price-wage controls, the large advance in total spending is expected to be translated into faster real product growth and lower unemployment.

According to the St. Louis model, the projected increase in total spending is not consistent with the policy actions proposed by the Administration. If for some reason the targeted increase in total spending is achieved, the St. Louis model indicates that the 1972 goals for unemployment and prices are realistic. However, achievement of these goals in 1972 would have important implications for the course of economic activity after 1972. In particular, substantial employment gains in 1972 may be incurred at the cost of rekindling inflationary pressures in the future.

Given the CEA total spending goal and roughly comparable projections of prices, the St. Louis model indicates that unemployment will be reduced in 1972. The rate of decline in unemployment is slightly less than projected by the CEA (the differences being minor).

Summary

The Administration has forecast that the U.S. economy will attain reductions in unemployment and inflation simultaneously in 1972. To achieve these goals, a large fiscal stimulus to total spending has been proposed. The economy is being confronted with a large fiscal stimulus. However, it is not so large as to prevent monetary actions from being controlled in such a way as to keep the economy on a sustainable path toward eventual attainment of full employment with relative price stability. With moderate monetary growth, the economic expansion will continue, although at a rate slower than projected by the Administration. The prospects for reducing inflation and phasing out price-wage controls are good, if monetary expansion is maintained at a moderate rate.

Monetary Expansion and Federal Open Market Committee Operating Strategy in 1971

by ALBERT E. BURGER and NEIL A. STEVENS

THE PRIMARY policy objective of the Federal Reserve System in 1971 was to continue progress toward expansion of real output and employment coupled with a slowing in inflation. The major policy instrument used in pursuit of this objective was open market operations, which are determined by the Federal Open Market Committee (FOMC).[1]

Expansionary policy actions taken in 1970 had laid the foundation for economic recovery in 1971. The money stock had increased at a 5.4 percent rate in 1970 compared to a 3.2 percent rate in 1969. Long- and short-term interest rates had declined markedly from peaks earlier in 1970. By the end of 1970, some small improvements toward the reduction of inflation could be noted, and further improvements in 1971 were anticipated. However, with unemployment at 6 percent and utilization of plant facilities at relatively low levels, unemployed resources remained a primary policy consideration.

Policy objectives of the Committee at the first three meetings were stated as follows:[2]

> . . . to foster financial conditions conductive to the resumption of sustainable economic growth, while encouraging an orderly reduction in the rate of inflation and the attainment of reasonable equilibrium in the country's balance of payments.

The FOMC members were also concerned about large outflows of short-term capital that occurred during 1971. At the April meeting and continuing through the July meeting, a new clause was added to the policy consensus stating that the Committee desired to moderate these outflows. The policy consensus was further modified at the August meeting to take account of the President's New Economic Program. A clause was added stating the intention of the Committee to "foster financial conditions consistent with the aims" of the new program.

In accordance with the objective of promoting economic expansion without renewed inflation, the Committee desired throughout most of 1971 both relatively low interest rates and moderate growth of monetary aggregates. These intermediate objectives were to be achieved by setting forth specified ranges for measures of money market conditions – money market interest rates and net borrowed or free reserves – to be achieved by the Desk during the interval between each Committee meeting.[3]

As the year progressed, conflicting views on the relative importance that should be assigned to interest rates and monetary aggregates became evident. For example, at the May 11 FOMC meeting some members expressed concern "that expansion in M_1 [currency plus demand deposits held by the nonbank public] at the first-quarter pace for an extended period would be inconsistent with an orderly reduction in the rate of inflation." Moderation of monetary growth would have required that the Desk be instructed to follow a less expansionary open market policy, which in the near term, most likely would

[1]Other policy instruments of the Federal Reserve System, such as reserve requirements and Regulation Q ceiling rates, were not altered in 1971. The discount rate was changed six times, lowered three times in January and February, raised in July, and then lowered two more times by the end of 1971. These changes, however, primarily represented attempts to keep the discount rate in line with prevailing market rates.

[2]Unless specifically footnoted, all quotes in this article come from the "Record of Policy Actions" of the Federal Open Market Committee, published in the Federal Reserve *Bulletin*.

[3]For a discussion of this type of operating strategy see page 13.

have lead to higher interest rates. Other members expressed the view that "sharp increases in long-term rates at this juncture might have adverse consequences for spending . . . and might thus pose a threat to the economic recovery under way." These members were reluctant to accept a more restrictive open market stance.

Later in the year an opposite type of conflict developed when the money stock had ceased to expand and interest rates had fallen. At the November meeting "[t]he view was expressed that it would be particularly unfortunate in this climate for the recent weak performance of the monetary aggregates to persist for long, since the lack of significant growth in the aggregates could become an important independent source of uncertainty. At the same time, some members cautioned against unduly aggressive action to stimulate monetary expansion."

An article in the Federal Reserve *Bulletin* discussed the possibility that such conflicts could develop:

> These desires may sometimes turn out to be in conflict; for example, monetary aggregates as a group may be rising more rapidly than desirable while credit conditions may be tightening more than desirable. Meeting one desire by holding back on the provision of reserves in order to restrain growth in bank credit and money would tend, at least temporarily, to thwart the other desire by leading to even more tightening of credit conditions. Under such circumstances, the Account Manager would have to adjust his operations — thereby affecting day-to-day money market conditions — in line with the sense of priority among operating objectives given by the FOMC.[4]

Throughout most of 1971, the Committee sought to resolve this problem by cautiously adjusting market conditions in seeking desired rates of monetary expansion.

This article is primarily concerned with an analysis of problems inherent in the operating strategy used by the FOMC. The following definitions are used: *policy* refers to the ultimate objectives of FOMC actions – total spending, output, employment, prices, and the balance of payments; *intermediate objectives* are desired movements in monetary aggregates and interest rates to achieve the Committee's ultimate objectives; *operating strategy* refers to the specific instructions given to the Desk as a means of achieving desired movements in the intermediate objectives.

The supplement at the end of this article reviews in greater detail the FOMC decisions in 1971 as presented in the "Record of Policy Actions." The membership, procedures, and terms used in connection with the FOMC are discussed in the section entitled "The Federal Open Market Committee in 1971" on page 13.

Implementing Policy With a Money Market Conditions Strategy

The operating strategy of the Desk remained essentially the same during 1971 as it had been in past years. This strategy, as described by Governor Andrew F. Brimmer, was as follows:

> They [the views of the members of the FOMC] would also probably contain enough common elements relating to operating tactics to add up to a pattern of behavior which can be described as the pursuit of a money market strategy in the conduct of open market operations. Basic to this strategy is the focus on a configuration of money market conditions as operating guides for the Manager of the SOMA [System Open Market Account]. While the specific money market variables have varied over time, they have typically included: (1) member bank borrowings from the Federal Reserve Banks; (2) net free reserves; (3) the Federal funds rate; and (4) the 3-month Treasury bill rate. These money market variables are to be used by the Manager to influence the behavior of a variety of intermediate financial variables, which may include: (1) the general structure of nominal interest rates; (2) monetary or credit aggregates (such as the money supply — broadly or narrowly defined, member bank credit, deposits of nonbank financial institutions, or similar quantitative measures); and (3) the general environment of credit and banking market as reflected in expectations, and the demand for and supply of total credit in the economy. . . .
>
> In other words, through reserve absorption or supplying operations in the market, the Manager of the SOMA attempts to bring about or maintain a desirable set of money market conditions (e.g., raising or lowering the 3-month Treasury bill yield or rates on Federal funds) with the expectation that the intermediate monetary variables (e.g., bank credit or money supply) will contract or expand at a rate consistent with the requirements of economic stabilization. For each FOMC meeting, the staff prepares an analysis of the relationships likely to prevail among money market conditions, interest rates, and the monetary aggregates over a coming period, indicating the growth rates in various aggregates expected to be associated with each of several described kinds of money market conditions.[5]

The operating clause of the directive during 1971 placed varying emphasis on the intermediate objec-

[4]"Monetary Aggregates and Money Market Conditions in Open Market Policy," Federal Reserve *Bulletin* (February 1971), p. 95.

[5]Andrew F. Brimmer, "The Political Economy of Money: Evolution and Impact of Monetarism in the Federal Reserve System" (Paper delivered at the Eighty-fourth Annual Meeting of the American Economic Association, New Orleans, Louisiana, December 27, 1971), pp. 15-16, 17.

The Federal Open Market Committee in 1971

The Federal Open Market Committee consists of the seven members of the Federal Reserve Board of Governors and five of the twelve Federal Reserve Bank Presidents. The Chairman of the Board of Governors is also, by tradition, Chairman of the Committee. The President of the New York Federal Reserve Bank is a permanent voting member of the Committee and is its Vice-Chairman. All other Federal Reserve Bank Presidents attend the meetings and present their views, but votes may be cast by only four of these Presidents, who serve as voting members for one-year terms on a rotation basis.

Members of the Board of Governors included Arthur F. Burns, J. L. Robertson, George W. Mitchell, J. Dewey Daane, Sherman J. Maisel, Andrew F. Brimmer, and William W. Sherrill.[1] At the first two meetings of 1971 the five Presidents included Mr. Hayes (New York), Mr. Mayo (Chicago),[2] Mr. Heflin (Richmond), Mr. Francis (St. Louis), and Mr. Swan (San Francisco). Beginning with the March meeting, the four rotating positions of the Committee were filled by the following new members: Mr. Morris (Boston), Mr. Kimbrel (Atlanta), Mr. Mayo (Chicago), and Mr. Clay (Kansas City).

The Committee meets about every four weeks to discuss economic trends and to decide upon the future course of open market operations. At these meetings they may discuss other possible policy actions for subsequent weeks and months. During 1971, the Committee met thirteen times. At each meeting, a directive was issued which stated the ultimate goals of the Committee and provided general guidelines as to how the Manager of the System Open Market Account[3] at the New York Federal Reserve Bank should conduct open market operations to achieve these goals. The first paragraph of each directive gave a short review of economic data considered and the general economic goals sought by the Committee. The second paragraph gave operating instructions to the Account Manager. These instructions were stated in terms of money and long-term credit market conditions, growth rates of monetary and credit aggregates, and any special factors to be taken into account, such as Treasury financing operations.

The decisions on the exact timing and amount of daily buying and selling operations of securities in fulfilling the Committee's directive are the responsibility of the Account Manager at the Trading Desk of the New York Bank. Each morning, he and his staff decide on a program for open market operations to be undertaken that day. In developing this program, money and credit market conditions and aggregate targets desired by the Committee are considered as well as other factors which may be of concern at that time. Each morning, the Account Manager places a conference call to staff members of the Board of Governors and one voting President to give information about present market conditions and open market operations which he proposes to execute that day. Other members of the Committee are informed of the daily program by wire summary.

A summary of the Committee's meetings are presented to the public in the "Record of Policy Actions" of the Federal Open Market Committee. This "Record" is released about 90 days after each meeting and is published in the Federal Reserve *Bulletin*, as well as in the *Annual Report of the Board of Governors of the Federal Reserve System* each spring. The "Record" generally includes:

1) a summary of current economic conditions, such as prices, employment and the trend of the components of aggregate demand; also, staff projections concerning real output growth for the current and following quarter(s) are usually discussed;
2) a discussion of the U.S. balance of payments including international financial developments;
3) a discussion of interest rate movements;
4) a discussion of the movements of monetary aggregates such as M_1, and M_2, and the adjusted credit proxy.[4] Also included are comments concerning staff analysis on the future growth rates of these aggregates expected to be consistent with different sets of money market conditions;
5) a discussion of open market operations since the last meeting;
6) a general statement of the views of the members of the FOMC;
7) conclusions of the FOMC;
8) a policy directive issued by the FOMC;
9) a list of the voting position of members and any dissenting comments.

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[1]Mr. Sherrill resigned effective November 15, 1971.

[2]Mr. Mayo voted as an alternate for the late Mr. Hickman (Cleveland) at the January and February meetings.

[3]The Manager of the System Open Market Account may be referred to as the "Account Manager" or "the Desk," meaning the Trading Desk of the New York Federal Reserve Bank.

[4]M_1 refers to the money stock, defined as private demand deposits plus currency in the hands of the nonbank public. M_2 refers to money stock plus net time deposits, defined as money stock plus total time deposits at all commercial banks minus large time certificates of deposits at large weekly reporting commercial banks. Adjusted credit proxy is defined as member bank deposits subject to reserve requirements plus bank-related commercial paper, Eurodollar borrowings of U.S. banks, and certain other nondeposit items.

tives of monetary aggregates and interest rates. The policy directive issued at the first FOMC meeting in 1971 placed equal emphasis on credit market conditions and monetary aggregates.

> To implement this policy, the Committee seeks to promote accommodative conditions in credit markets and moderate expansion in monetary and credit aggregates. System open market operations until the next meeting of the Committee shall be conducted with a view to maintaining bank reserves and money market conditions consistent with those objectives, taking account of the forthcoming Treasury financing.

At the next three meetings, however, wording of the directive was changed to place primary emphasis on money market conditions and long-term interest rates. For example, the February directive read:

> . . . System open market operations until the next meeting of the Committee shall be conducted with a view to maintaining prevailing money market conditions while accommodating additional downward movements in long-term rates. . . .

Aggregates were relegated to the proviso clause which specified that money market conditions were to "promptly be eased somewhat further if it appears that the monetary aggregates are falling short of the growth path desired." At the March and April meetings, the proviso clause was modified to specify that money market conditions should be modified if it appeared that the monetary and credit aggregates were deviating significantly from the growth paths expected.

At the May 11 meeting the language of the directive was shifted to place greater emphasis on growth of monetary and credit aggregates. Other objectives were also specified, including "taking account of the current Treasury financing, developments in capital markets, and uncertainties in foreign exchange markets."

The May directive specified that, initially, money market conditions should be maintained at those currently prevailing. Thereafter, money market conditions were to be consistent with the objectives stated, including moderating growth in monetary and credit aggregates. At the remaining FOMC meetings in 1971, the language of the directives gave primary emphasis to monetary and credit aggregates. In addition, at several meetings it was noted that capital market developments should be taken into account as well as Treasury financings.

Growth rates of monetary aggregates were not the sole concern of the FOMC in 1971. However, at every meeting the aggregates were discussed and at most meetings some members of the FOMC expressed concern about their current and projected growth rates. At each meeting growth rates of the aggregates expected to be consistent with given money market conditions were presented to the Committee. To the extent that the Committee was interested in growth of the aggregates, these projections probably influenced the decisions of the FOMC members on money market conditions the Desk was instructed to maintain.

Projecting the Growth of Money

During the first half of 1971 projected growth rates for money that were expected to result from the adopted set of money market conditions were substantially *below* actual growth rates of money. On the other hand, during the second half of the year, projections, again based on the assumption of adopted money market conditions, were substantially *above* actual growth rates.

At the first three meetings of 1971 money was expected to grow at an annual rate of about 6 to 7.5 percent during the first quarter. The actual rate was 9.4 percent.[6] In the second quarter, estimates for the growth of money consistent with the adopted money market strategy ranged from about 8 to 9 percent at the April and May meetings. At the May meeting it was expected that "a sharp firming of money market conditions would be required to slow expansion in M_1 sufficiently during the rest of the second quarter to achieve a substantial moderation of growth over the quarter as a whole." Table I shows that there was some firming of money market conditions in May and June; however, money grew at an 11 percent rate over the second quarter.

The FOMC desired a more rapid growth in money over the first part of 1971 than had occurred in the fourth quarter of 1970. However, the rapid increase in money that occurred over the first half of the year clearly exceeded that expected to accompany the money market conditions adopted by the Committee. As early as the March 9 meeting, when a 7 percent monetary growth rate was projected for the first quarter, the FOMC decided that:

> . . . money market rates were to be increased somewhat if the aggregates were rising considerably faster than expected. . . .

[6]Following the procedure used by the staff analysis for the FOMC, quarterly growth rates are calculated on the basis of the daily-average level in the last month of the quarter relative to that in the last month of the preceding quarter.

Table I

Money Market Conditions
Averages of Daily Figures

1971	Federal Funds Rate	Net Borrowed Reserves* (millions)	Member Bank Borrowings (millions)	3-Month Treasury Bill Rate (market yield)
January	4.14%	$ 91	$370	4.44%
February	3.72	127	328	3.69
March	3.71	120	319	3.38
April	4.15	8	148	3.85
May	4.63	18	330	4.13
June	4.91	322	453	4.74
July	5.31	658	820	5.39
August	5.57	606	804	4.93
September	5.55	295	501	4.69
October	5.20	153	360	4.46
November	4.91	144	407	4.22
December	4.14	— 58**	107	4.01

*Excess reserves minus member bank borrowings. When member bank borrowings exceed excess reserves this series is called net borrowed reserves. When excess reserves exceed member bank borrowings it is called free reserves.

**Free reserves.

At the April 6 meeting, when the first quarter growth rate of money was estimated at 8 percent, the FOMC stated:

> . . . it would like to see more moderate expansion in the monetary aggregates in the second quarter than had occurred in the first.

From the March 9 meeting to the August 24 meeting, the Policy Record stated, in general, that open market operations were initially aimed at maintaining prevailing money market conditions, and then aimed at achieving slightly or somewhat firmer money market conditions as incoming data indicated the monetary aggregates were expanding significantly faster than expected.

During this period only gradual tightening of money market conditions was permitted. For example, in the period prior to the April 6 meeting:

> . . . efforts were made during the period to counter repetitive tendencies toward undue firmness that arose from market factors affecting reserves.

Also in the period immediately following the May 11 meeting:

> System open market operations had been directed at maintaining prevailing money market conditions . . . in light of the Treasury financing then in process and the sensitive state of conditions in capital markets.

In late June the growth of money for the third quarter, with prevailing money market conditions, was projected to be at a slightly slower rate than the second quarter, and at about 9 percent with some firming in money market conditions. At the July 27 meeting projections were revised downward slightly to about an 8 to 9 percent rate with some further firming of money market conditions. The actual annual growth rate for money over the third quarter was 3.8 percent.

At the September 21 meeting it was projected that if prevailing money market conditions were maintained, growth in M_1 would be slower in the fourth quarter than in the third quarter. At the October meeting growth of M_1 was projected to be about the same rate in the fourth quarter as the third quarter, assuming prevailing money market conditions. Money market conditions in fact eased, yet the actual growth rate for the fourth quarter was 1.1 percent.

Inconsistency of Money Market Conditions and Desired Growth of Money

Although money market conditions approved at each meeting of the FOMC as operating instructions for the Desk may have been consistent with the members' intermediate objectives for market interest rates, these conditions were not consistent with the growth rates of money expected by the members. The growth trend of money accelerated at an extremely rapid rate over the first seven months of 1971 and then decelerated at an equally rapid rate in the latter part of the year.

Periodically some members of the FOMC expressed concern about the growth paths of the monetary aggregates that were resulting from the money market operating strategy. For example, Mr. Kimbrel dissented at the April meeting because he "believed that higher short-term interest rates would be desirable mainly to hold growth in the monetary and credit aggregates to a moderate pace in order to avoid a rekindling of inflationary expectations." At the May meeting "[t]he view was widely held among members that expansion in M_1 at the first-quarter pace for an extended period would be inconsistent with an orderly reduction in the rate of inflation." At the December meeting "[c]onsiderable concern was expressed about the persistent weakness of key monetary aggregates despite the progressive easing of money market conditions in recent months."

In early 1971 the rapid acceleration was initially viewed as representing a make-up for the slower than desired growth rate in the fourth quarter of 1970, when growth of money had slowed to a 3.8 percent rate. However, over the last half of 1970 money had grown at a 5.2 percent rate. Make-up for the fourth quarter slowdown in monetary growth was very rapid; money rose at a 9.4 percent rate in the first quarter and at an 11 percent rate in the second quater. From June

1970 to June 1971, money grew at a rapid 7.7 percent rate.

In the third quarter of 1971, the early stage of the deceleration of money was viewed as a welcome offset to rapid growth over previous months of the year. At first the FOMC was reluctant to push for a more rapid growth of money. However, by the November 16 meeting, the FOMC clearly desired to reverse the trend growth of money. The Committee desired:

> . . . somewhat greater growth in monetary and credit aggregates over the months ahead, recognizing that pursuit of that objective might require appreciably easier money market conditions.

Until mid-November the Desk moved cautiously within the money market directive to prevent rapid deceleration of money. Beginning in September, the Policy Record states that, in general, open market operations were directed at a gradual easing of money market conditions in light of the continuing tendency of the monetary aggregates to fall below expected paths.

As shown in Table I, money market conditions eased somewhat from September through December. However, until after mid-November easing was relatively gradual. The Federal funds rate, which averaged 5.53 percent between the late July and late August meetings, fell to only 5.09 percent, on average, prior to the mid-November meeting. The money stock did not respond to this cautious easing of money market conditions. There was no growth, on average, in money from mid-September to mid-December.

Factors Influencing Money Growth in 1971

In published explanations of the behavior of money growth last year the Federal Open Market Committee placed primary emphasis on factors that were asserted to determine the demand for money. The following quotes illustrate this view:

> The rate of growth of both currency and privately held demand deposits rose because of considerably lower interest rates than earlier and the post-strike rebound in economic activity ["Financial Developments in the First Quarter of 1971," Federal Reserve *Bulletin* (May 1971), p. 368].

> And the monetary aggregates expanded at rapid rates in the first quarter, with growth in M_1 (currency and private demand deposits) reflecting increased transactions demands and the lagged effects of previous declines in interest rates. [*Monetary Policy and the U.S. Economy in 1971: A Prelude to the Annual Report,* Board of Governors, p. 6].

> The monetary aggregates continued to expand at a strong pace in the second quarter of 1971. . . . Primarily, however, the increase reflected the impact on transaction demands for money of the substantial expansion in expenditures that occurred in both the first and second quarters of the year and the lagged response of consumer demands for money to the sharp earlier decline of market interest rates ["Financial Developments in the Second Quarter of 1971," Federal Reserve *Bulletin* (August 1971), p. 641].

> Staff analysis suggested that the new economic program, along with other forces — including lagged reactions to earlier increases in short-term interest rates — should tend to produce lower rates of growth in the monetary aggregates over the rest of the year [Federal Reserve *Bulletin* (December 1971), p. 994].

> At the time of the previous meeting of the Committee it had been expected that growth in M_1 would slow from the average annual rate of 10 per cent recorded in the first 7 months of the year, in part in a lagged response to earlier increases in short-term interest rates, and that M_2 would continue to expand at about the moderate rate that had emerged in July. For both measures, however, actual growth rates in August were lower than had been anticipated partly for reasons related to the flows of funds into foreign currencies. . . .

> As at the previous meeting, staff analysis suggested that the effects of the new economic program on demands for money, together with lagged reactions to earlier increases in short-term interest rates, should tend to produce much lower average rates of growth in the monetary aggregates over the rest of 1971 than had been recorded earlier in the year [Federal Reserve *Bulletin* (January 1972), pp. 36, 37].

> It seems likely that the sharp slowing of M_1 growth in August was in large part attributable to the heavy outflow of dollars into foreign exchange markets. Weakness continued in September, however, after the outflow was severely cut back. This was apparently related to a reduction in demands for money balances in response to greater confidence and expectation of declining interest rates resulting from the President's new economic program ["Financial Developments in the Third Quarter of 1971," Federal Reserve *Bulletin* (November 1971), pp. 872-873].

> Staff analysis suggested that the effects of two factors that had been tending in recent months to hold down demands for money — moderation of inflationary expectations as a result of the new economic program, and lagged reactions to the high short-term interest rates of late spring and early summer — probably had about run their course. According to the analysis, if money market conditions were similar to those prevailing or slightly easier, M_1, would begin to grow again in December and would expand faster over the first quarter — at a pace more nearly in line than recently with growing transactions demands [Federal Reserve *Bulletin* (February 1972), p. 139].

The rate of expansion in the narrowly defined money stock (M_1), which had declined substan-

tially in the third quarter from the very rapid pace established earlier in the year, slowed further to a modest 1 per cent annual rate of growth, as public demands for cash balances remained small in the wake of the very large build-up in liquidity over the first half of the year.

. . . M_1 may not have responded more sensitively to factors that generally promote growth in this aggregate, in part because the public decided to reduce precautionary balances built up earlier in the year when there was greater concern about the economic outlook. In addition, some money-holders may have been gradually shifting out of cash balances into interest-bearing assets in the belief that the wage-price control program would meet with success and that interest rates would be lower in the future. Finally, experience indicates that it takes time for the public to adjust its cash balances upward in response to lower short-term interest rates ["Financial Developments in the Fourth Quarter of 1971," Federal Reserve *Bulletin* (February 1972) pp. 95-96, 98].

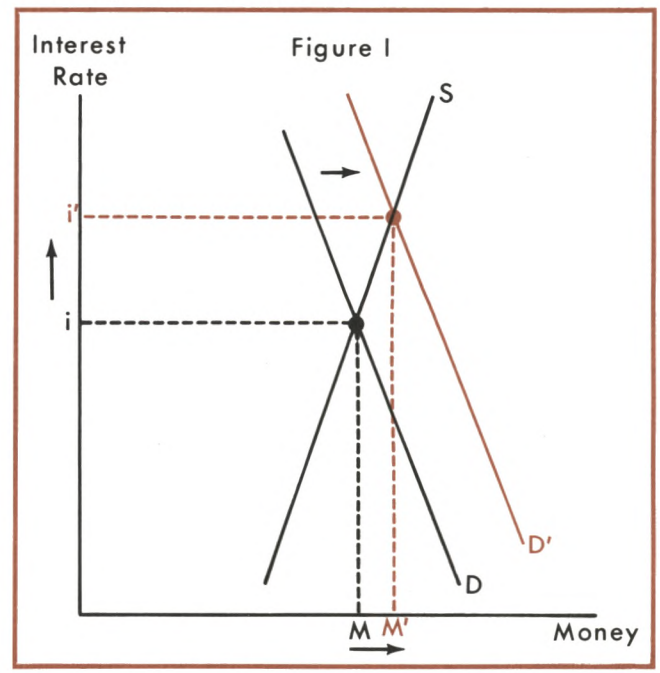
A Supply and Demand Analysis

These propositions can be examined with demand and supply analysis. In Figures I-IV, the demand curve for money balances is represented by "D", and the supply curve for money balances by "S". Quantities of money (M) demanded and supplied are expressed as dependent upon the current interest rate (i). Let us assume that the demand for money depends negatively on past values of the interest rate and positively upon growth of income as the previous quotes suggest. These factors operate to shift D. The money supply also depends on the monetary base. An increase in the base shifts S to the right and a decrease in the base shifts S to the left.

A couple of expositional points should be emphasized at this point. The money stock, quantity of money balances demanded and quantity of money balances supplied, is measured along the horizontal axis in Figures I-IV. The money supply and money demand refer to the curves labeled S and D. A change in the *money supply* would appear as a shift in the curve labeled S. The *money stock* is determined by the interaction of money supply and money demand. Values of the current interest rate are measured on the vertical axis of the graphs.[7] As the interest rate rises the quantity of money supplied rises, even though the monetary base is unchanged; for example, banks reduce their excess reserves. In Figures I-IV this would appear as a movement along S. As the interest rate rises the quantity of money balances demanded decreases and this appears as a movement along D. Lagged values of the interest rate enter as shift parameters in the demand for money function.

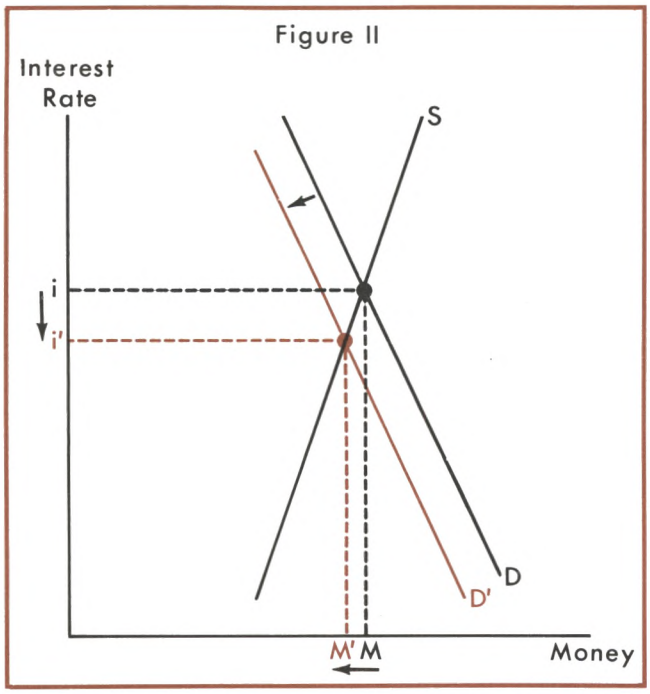
In Figures I-IV the size of the change in the money stock resulting from a shift in the demand for money depends upon the slopes of D and S. If these curves have relatively steep slopes, as shown in the illustrations, then a shift in either D or S will have less of an effect on the money stock and relatively more of an effect on the interest rate than if the curves are drawn with flatter slopes. Most empirical estimates indicate that the percent response of both the supply and demand for money balances to a percent change in short-term interest rates is small. This implies a relatively steep slope for each curve. Therefore, this analysis incorporates these empirical results.

Demand Factors – Over the first half of 1971, because interest rates had declined in the second half of 1970 and growth of income accelerated in the first half of 1971, the above analysis would suggest that the demand for money (D) shifted to the right from D to D′ as shown in Figure I. If the supply curve (S) is unchanged (that is, no change in the base), then the interest rate rises to i′ from i and the money stock expands to M′ from M.



Interest rates rose in the first half of 1971 and growth of income slowed somewhat in the second half of the year. This would imply, following the conjectured relationship between lagged interest rates, income and the demand for money given in the above quotes, that the demand for money was shifting to the left during the second half of 1971, as illustrated

[7]This analysis is based on conventional liquidity preference theory. Another analysis would include credit market conditions.



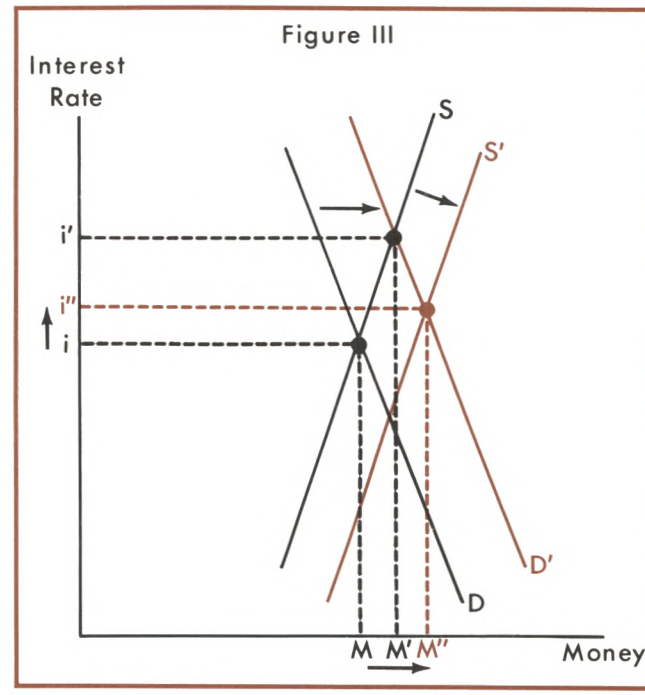
in Figure II. As the demand for money falls from D to D′, and if the money supply function (S) remains unchanged, then the interest rate declines from i to i′ and the money stock declines from M to M′.

If the supply of money (S) is unchanged (that is, no change in the monetary base), then growth of the money stock that occurred was completely demand determined, as postulated in the above quotes. However, as long as the response of the money supply to changes in the base is not zero, then Federal Reserve open market operations which alter the growth of the base influence the supply of money, and hence, the money stock outstanding.

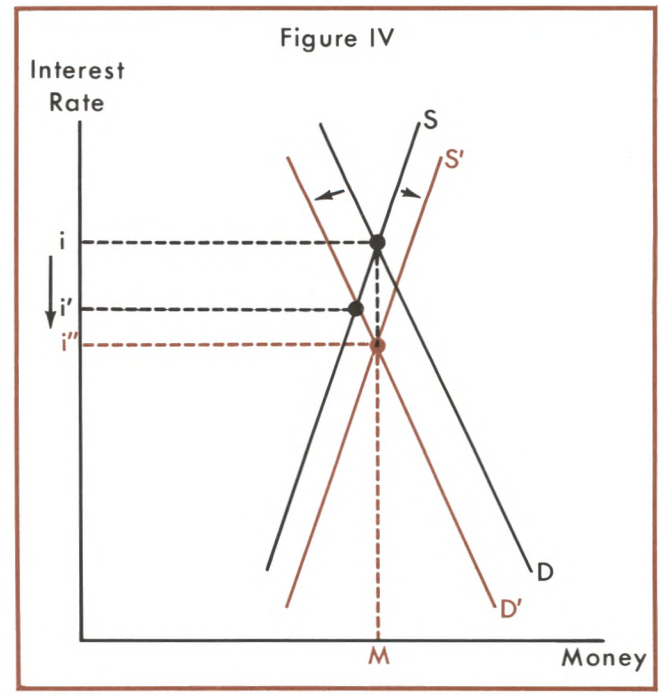
Supply Factors — Consequently, for a more complete analysis of money growth during 1971, behavior of the monetary base must also be considered. Growth of the base accelerated markedly during the first half of 1971, then decelerated sharply in the second half of the year. Therefore, the explanations of Figures I and II must be broadened to include shifts in S.

Figure III illustrates the conditions for the first half of 1971 taking the supply factors into account. From December 1970 to July 1971 the monetary base grew at a 9.4 percent annual rate. As the base grew rapidly, the money supply function (S) was substantially shifted to the right to S′. Taking supply effects into account, the interest rate rises only to i″, but the money stock expands to M″ instead of only to M′.

Figure IV illustrates the case for the latter part of 1971. From July to December the monetary base grew



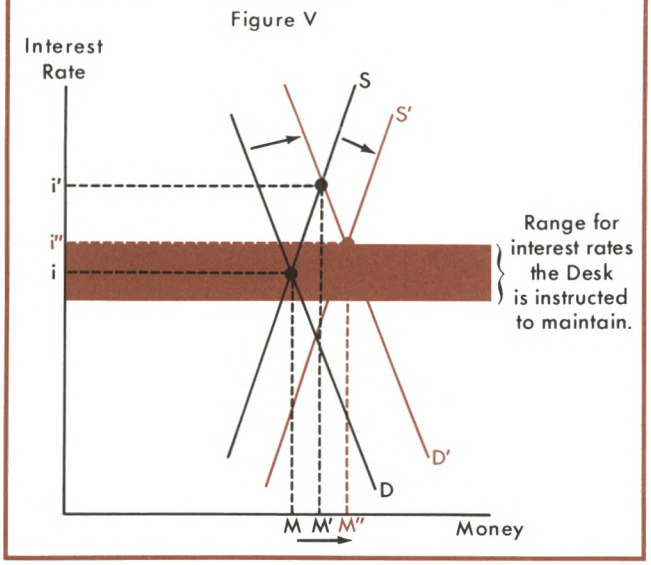
at only a 3.6 percent rate, and from September to December at only a 2.3 percent rate. The supply curve shifted only slightly to the right, as compared



to the first half of the year, and the money stock remained at M (no change) while market interest rates fell.[8]

[8]The money stock averaged $228 billion in August 1971 and $228.2 billion in December.

Figure V



Effect of Operating to Offset Changes In Interest Rates

Figure V may be used to illustrate problems that can arise in controlling the growth of money when the Desk is instructed to use open market operations to maintain a narrow range for short-term interest rates or permit only gradual changes in interest rates. Suppose that there is an increase in the money demand curve from D to D′, as illustrated in Figure V, and the Desk has been instructed to prevent the interest rate from rising above i″. If no offsetting action is taken the interest rate will rise to i′, above the upper bound of the Desk's instructions. To keep the interest rate below i″ the Desk would buy securities, which would increase the growth of the base and shift S to S′ as shown in Figure V. The interest rate temporarily rises only to i″, but as shown in Figure V, money rises to M″ rather than M′. Assuming the growth of income is positively related to the growth of money, then the growth of income accelerates, the demands for money and credit rise, and the Desk must again increase the growth of the base to prevent a further rise in interest rates. By reversing this analysis, it can be seen that if market rates are falling and the Desk is given instructions to operate within too narrow a range on the interest rate then the opposite situation could arise.

Therefore, FOMC instructions to the Desk to prevent demand induced changes in market interest rates result in amplifying the fluctuations in the rate of growth of the money stock. When in the face of demand induced changes in interest rates the FOMC gives the Desk instructions to maintain interest rates within a narrow band, the growth of the money stock can be considered demand determined. However, "demand determined" in this case has quite a different meaning from that in Figures I and II where no change occurred in the money supply function, that is, no change in the monetary base. The money stock is demand determined in the case where the base changes because the Desk is instructed to resist demand induced changes in market interest rates which are not desired by the FOMC. In this circumstance the FOMC faces the decision of whether to control the growth of money or temporarily offset demand induced changes in interest rates. If the decision is made to control market interest rates, then the growth of money may deviate significantly from the expected growth rate.

The relative weights attached by members of the Committee to money stock growth and interest rates were given careful consideration in the decisions of the FOMC. For example, at the May 11 and June 29 meetings the possible short-run interest rate effects of open market operations necessary to substantially slow the growth of money influenced the decisions of the Committee.

May 11 Meeting

In the discussion Committee members expressed concern both about the recent high rates of growth in the monetary aggregates and about the marked increases that had occurred in long-term interest rates. The view was widely held among members that expansion in M_1 at the first-quarter pace for an extended period would be inconsistent with an orderly reduction in the rate of inflation. Also widely held, however, was the view that sharp increases in long-term rates at this juncture might have adverse consequences for spending, particularly in the residential construction and State and local government sectors, and might thus pose a threat to the economic recovery under way.

Although there were some rather marked differences in the stress that individual members placed on these two types of considerations, the Committee agreed that it would not be desirable at present either to revert to the money market conditions that had prevailed until the end of April or to seek the amount of firming that evidently would be required to achieve a substantial slowing of growth in the aggregates over to the second quarter.

June 29 Meeting

In the Committee's discussion considerable concern was expressed about the rapid growth in the monetary aggregates, particularly in light of the persistence of inflationary pressures and expectations. At the same time, concern was expressed about the recent upward pressures on interest rates, in view of the dependence of the current economic recovery on continued expansion in such interest-sensitive sectors of the economy as residential construction.

FEDERAL OPEN MARKET COMMITTEE ECONOMIC POLICY DIRECTIVES

Date of FOMC Meeting	Policy Consensus	Operating Instructions	Proviso Clause of Directive
January 12	In light of the foregoing developments, it is the policy of the Federal Open Market Committee to foster financial conditions conducive to the resumption of sustainable economic growth, while encouraging an orderly reduction in the rate of inflation and the attainment of reasonable equilibrium in the country's balance of payments. Dissents: Mr. Francis	To implement this policy, the Committee seeks to promote accommodative conditions in credit markets and moderate expansion in monetary and credit aggregates. System open market operations until the next meeting of the Committee shall be conducted with a view to maintaining bank reserves and money market conditions consistent with those objectives, taking account of the forthcoming Treasury financing.	no proviso clause
February 9	No Change Dissents: Mr. Francis	. . . System open market operations until the next meeting of the Committee shall be conducted with a view to maintaining prevailing money market conditions while accommodating additional downward movements in long-term rates;	provided that money market conditions shall promptly be eased somewhat further if it appears that the monetary aggregates are falling short of the growth path desired.
March 9	No Change Dissents: None	. . . System open market operations until the next meeting of the Committee shall be conducted with a view to maintaining prevailing money market conditions while accommodating any downward movements in long-term rates;	provided that money market conditions shall be modified if it appears that the monetary and credit aggregates are deviating significantly from the growth paths expected.
April 6	In light of the foregoing developments, it is the policy of the Federal Open Market Committee to foster financial conditions conducive to the resumption of sustainable economic growth, while encouraging an orderly reduction in the rate of inflation, moderation of short-term capital outflows, and attainment of reasonable equilibrium in the country's balance of payments. Dissents: Mr. Hayes Mr. Kimbrel	. . . while taking account of the Treasury financing the terms of which are to be announced late in the month, System open market operations until the next meeting of the Committee shall be conducted with a view to attaining temporarily some minor firming in money market conditions, while continuing to meet some part of reserve needs through purchases of coupon issues in the interest of promoting accommodative conditions in long-term credit markets;	provided that money market conditions shall be modified if it appears that the monetary and credit aggregates are deviating significantly from the growth paths desired.
May 11	No Change Dissents: None	. . . the Committee seeks to moderate growth in monetary and credit aggregates over the months ahead, taking account of the current Treasury financing, developments in capital markets, and uncertainties in foreign exchange markets. System open market operations until the next meeting of the Committee shall be aimed initially at maintaining currently prevailing money market conditions, and thereafter conducted with a view to maintaining bank reserves and money market conditions consistent with the above-cited objectives.	no proviso clause
June 8	No Change Dissents: None	. . . the Committee seeks to moderate growth in monetary aggregates over the months ahead, taking account of developments in capital markets. System open market operations until the next meeting of the Committee shall be conducted with a view to achieving bank reserve and money market conditions consistent with those objectives.	no proviso clause

June 29	No Change Dissents: None	. . . the Committee seeks to achieve more moderate growth in monetary aggregates over the months ahead, taking account of developments in capital markets. System open market operations until the next meeting of the Committee shall be conducted with a view to achieving bank reserve and money market conditions consistent with those objectives.	no proviso clause
July 27	In light of the foregoing developments, it is the policy of the Federal Open Market Committee to foster financial conditions conducive to sustainable economic growth, while encouraging an orderly reduction in the rate of inflation, moderation of short-term capital outflows, and attainment of reasonable equilibrium in the country's balance of payments. Dissents: None	. . . taking account of the current Treasury financing and of developments in capital markets, the Committee seeks to achieve more moderate growth in monetary aggregates over the months ahead. System open market operations until the next meeting of the Committee shall be conducted with a view to achieving bank reserve and money market conditions consistent with those objectives.	no proviso clause
August 24	In light of the foregoing developments, it is the policy of the Federal Open Market Committee to foster financial conditions consistent with the aims of the new governmental program, including sustainable real economic growth and increased employment, abatement of inflationary pressures, and attainment of reasonable equilibrium in the country's balance of payments. Dissents: None	. . . the Committee seeks to achieve more moderate growth in monetary and credit aggregates over the months ahead. System open market operations until the next meeting of the Committee shall be conducted with a view to achieving bank reserve and money market conditions consistent with that objective.	no proviso clause
September 21	No Change Dissents: None	. . . the Committee seeks to achieve moderate growth in monetary and credit aggregates, taking account of developments in capital markets. System open market operations until the next meeting of the Committee shall be conducted with a view to achieving bank reserve and money market conditions consistent with that objective.	no proviso clause
October 19	No Change Dissents: None	. . . the Committee seeks to achieve moderate growth in monetary and credit aggregates over the months ahead. System open market operations until the next meeting of the Committee shall be conducted with a view to achieving bank reserve and money market conditions consistent with that objective, taking account of the forthcoming Treasury financing.	no proviso clause
November 16	No Change Dissents: None	. . . the Committee seeks to promote somewhat greater growth in monetary and credit aggregates over the months ahead. System open market operations until the next meeting of the Committee shall be conducted with a view to achieving bank reserve and money market conditions consistent with that objective.	no proviso clause
December 14	No Change Dissents: None	. . . the Committee seeks to promote the degree of ease in bank reserve and money market conditions essential to greater growth in monetary aggregates over the months ahead, while taking account of international developments.*	no proviso clause

SOURCE: "Record of Policy Actions" of the Federal Open Market Committee, published in the Federal Reserve *Bulletin*

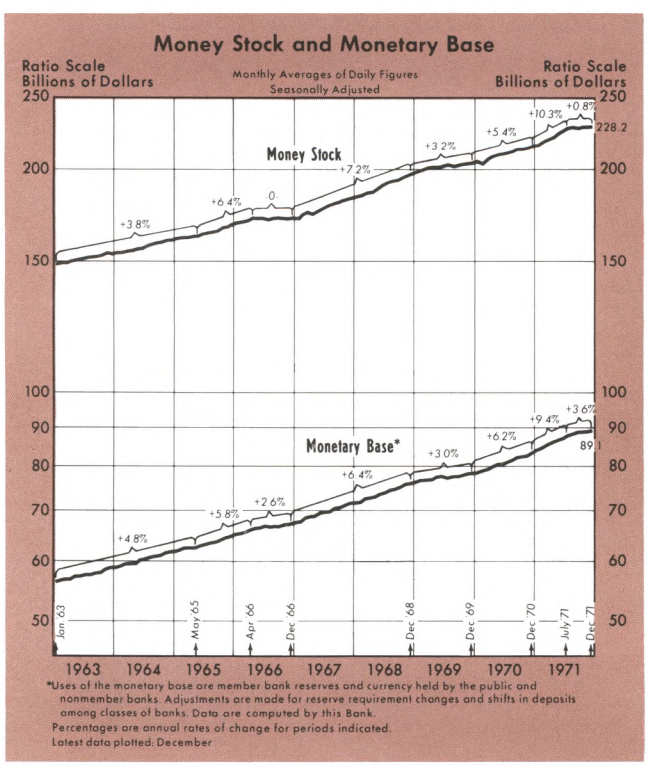
*Subsequent to the December meeting, on December 20, 1971, Committee members voted unanimously to amend the economic policy directive by adding the clause "while taking account of international developments."

While the members agreed that an unduly sharp firming of money market conditions should be avoided because of the risk of undesired repercussions on market interest rates, the Committee decided that open market operations in the coming period should be directed at achieving more moderate growth in monetary aggregates over the months ahead. As at the preceding meeting, it was agreed that account should be taken of developments in capital markets in the conduct of operations.

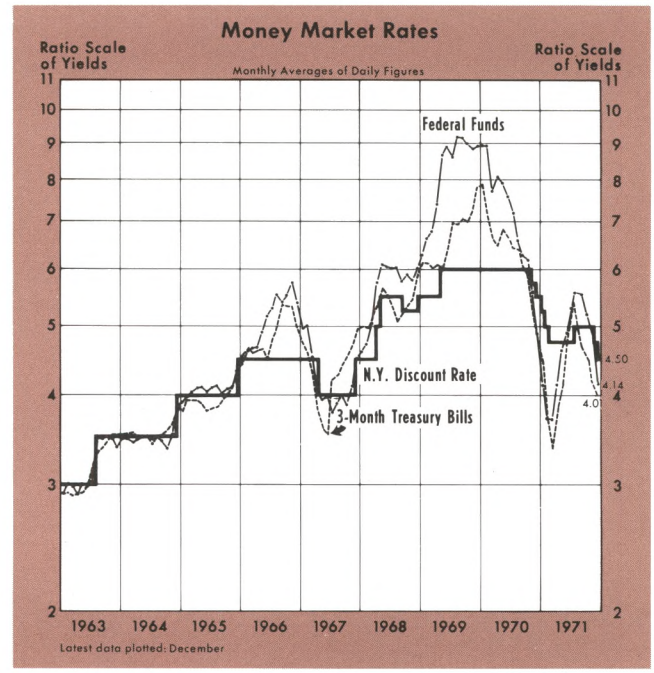
Every open market operation, regardless of its purpose, affects the base. Open market operations aimed at offsetting market determined movements in interest rates result in accelerations or decelerations of the growth of the base and hence, shifts in the money supply function. If greater short-run variations in interest rates were permitted, the FOMC would be better able to control the growth trend of money.

Money, Base, and Money Market Conditions

Movements in the base paralleled movements in the money stock in 1971, as shown in Table II and the accompanying chart. This close relationship between growth of the monetary base and money is not unique to this period. Table II also presents the pattern of movements in the base and money over the recent periods of sharp accelerations and decelerations.



Federal Reserve actions, primarily open market operations, dominate the growth pattern of the monetary base.[9] Over any period of time, there will be a set of money market conditions, a growth rate of base, and a growth rate of money consistent with a given course of open market actions. However, open market operations that achieve a set of money market conditions desired by the Committee may not be consistent with a growth of the base necessary to achieve the growth rate of money also desired by the Committee.



As shown in Table I, money market conditions firmed in the period March through July. However, as shown in Table II, the growth rate of the base accelerated from 8.4 percent in March to 10 percent in May and then remained at about a 9 percent rate through July. Such a growth path for the base clearly did not imply a much slower growth of money. Over the second half of the year money market conditions eased markedly, but the base decelerated drastically. The growth path of money paralleled the growth path of the monetary base, not the pattern of money market conditions.

The situation where the growth pattern of money deviated from that expected from specified money market conditions is not a situation peculiar to 1971. This same pattern can be traced in the Policy Record of the FOMC in prior years.[10]

[9]Other Federal Reserve actions that influence the monetary base include Federal Reserve lending to membr banks and changes in member bank reserve requirements.

[10]See Reprints 22, 28, 39, 57, and 68 for annual reviews of monetary actions by the FOMC for the years 1966-70, available on request from this Bank. See also Brimmer, "The Political Economy of Money," pp. 48-53, for a discussion of the problems encountered in 1966.

Table II

GROWTH RATES OF MONEY AND THE MONETARY BASE: SELECTED PERIODS

(Growth Rates Are Based On Six-Month Periods)*

Money

1971		Mid 1965-Early 1966 Acceleration		1967 Acceleration		1966 Deceleration		1969 Deceleration	
December 1970	5.2%	May 1965	2.4%	December 1966	-0-%	April 1966	6.5%	October 1968	8.4%
January 1971	4.8	June	3.3	January 1967	0.5	May	5.6	November	8.1
February	5.8	July	3.5	February	2.5	June	4.5	December	7.8
March	6.6	August	3.8	March	3.4	July	2.1	January 1969	7.4
April	7.7	September	4.4	April	3.2	August	1.7	February	7.4
May	9.8	October	5.5	May	5.4	September	1.6	March	7.3
June	10.2	November	5.9	June	6.6	October	—0.3	April	7.0
July	11.6	December	6.1	July	8.7	November	—0.4	May	5.6
August	9.7	January 1966	6.8			December	-0-	June	4.9
September	7.3	February	6.8					July	4.6
October	6.0	March	6.5					August	2.9
November	3.5	April	6.5					September	2.4
December	2.4							October	2.2
								November	2.1
								December	1.5

Monetary Base

1971		Mid 1965-Early 1966 Acceleration		1967 Acceleration		1966 Deceleration		1969 Deceleration	
December 1970	7.3%	May 1965	4.1%	December 1966	2.7%	April 1966	6.1%	October 1968	6.8%
January 1971	8.1	June	4.5	January 1967	1.9	May	6.0	November	7.4
February	8.4	July	4.7	February	3.9	June	4.5	December	7.2
March	8.4	August	4.6	March	5.2	July	5.4	January 1969	6.8
April	8.7	September	4.5	April	5.7	August	3.9	February	5.9
May	10.1	October	5.2	May	5.9	September	4.0	March	5.6
June	9.1	November	5.4	June	6.0	October	2.3	April	4.5
July	8.9	December	6.2	July	6.3	November	2.0	May	4.8
August	7.9	January 1966	6.1			December	2.7	June	3.6
September	7.4	February	6.0					July	2.3
October	6.5	March	6.0					August	2.2
November	5.2	April	6.5					September	1.8
December	4.9							October	2.3
								November	1.9
								December	2.4

*For each month the growth rates of both money and the monetary base are a compound annual rate based on a month six months earlier. For example, the growth rate for December 1970 is computed by comparing the average for June 1970 to December 1970 and then converting to an annual rate. The rate for January 1971 is computed by comparing July 1970 to January 1971.

Long-Run Compared To Short-Run Effects of Changes in the Growth of the Base

When implementing monetary policy, a careful distinction has to be made between the short-run effect of a change in the base and the longer-run effects of such actions. The short-run effect of accelerating the growth of the base is to lower market interest rates, while a deceleration of the base puts upward pressure on market rates and results in firming of other money market conditions. However, longer-run effects of such actions are opposite from their initial effect. For example, suppose that market rates are moving upward and the FOMC decides to resist such a trend. The Desk may be instructed to maintain prevailing money market conditions; in other words use open market operations to resist a further rise in market rates. To do so, the Desk probably would have to accelerate its purchase of securities, and thus growth of the base would accelerate. The initial effect would be to slow or to lower market interest rates.

This acceleration of the base leads to an acceleration in the growth of money, and over time total spending rises more rapidly. An increased demand for credit develops, and thus additional upward pressures on market interest rates follow. "Maintaining existing money market conditions," or even permitting only "some moderate firming in money market conditions" may require a further acceleration in the base. This process creates severe problems when the FOMC attempts to control the growth of money by using a money market strategy.

If money market conditions are firmed enough to actually slow the growth of the base, then the growth of money slows. However, if the slowdown of money is maintained, then longer-run effects of this policy on income and the demand for credit lead to falling market rates and easier money market conditions. As rates fall the FOMC may reason that its open market operations have caused the easing in the money market and that the decline in market interest rates indicates that open market operations are exerting a more expansionary (or less restrictive) effect on their policy objectives. The FOMC may therefore be reluctant to increase its purchases of securities to halt a rapid deceleration of the base. Again, from a money market operating strategy, it appears the Desk is attempting to achieve a reversal in the growth trend of money. However, from an analysis that emphasizes growth of the base as the primary determinant of the growth of money, the money market operating strategy again spells considerable problems for money control.[11]

Conclusions

To attain its policy objectives in 1971 the FOMC sought to use open market operations to achieve moderate growth rates for the monetary aggregates and moderately declining interest rates. However, if one looks at the pattern of interest rates or the growth of money over 1971 both these series resemble a roller coaster. Market rates fell early in the year, reversed their course in February and March, then rose rapidly until early August when they began a rapid decline that carried into 1972. The growth of the money stock accelerated at extremely rapid rates over the first half of the year then decelerated at very rapid rates over the second half of 1971.

The Committee's intermediate objectives for interest rates and growth of the monetary aggregates were often in conflict in 1971. One conclusion of this article is that the operating strategy based on allowing only small changes in money market conditions in seeking to avoid possible undesired movements in long-term rates resulted in sharper accelerations and decelerations in the growth of money in 1971 than desired by the FOMC. The problems of trying to implement monetary policy with money market conditions as the primary target of open market operations had been forcefully brought to the Committee's attention by the Maisel Committee Report completed in early March 1970.[12] The report was not adopted formally by the FOMC, nor has it been published. However, the general content of the Maisel Report may be obtained from a speech by Governor Brimmer:

> In general, the issue the Maisel Committee focused on is the one already identified: if money market conditions are the primary target of open market operations, the FOMC has no clear and definitive way of giving instructions to the Manager of the

[11] These results are implied by considerable theoretical and empirical research. For example, in a study of several large econometric models Professor Joseph R. Zecher found the following (where B^a denotes the net source base or nonborrowed base):

> (1) Although the adjustment patterns differ among the models, all of the models imply that in the second and later quarters after the change in B^a the responses of both the short-term interest rate and the long-term interest rate decay rapidly.
>
> (2) Using B^a to control the term structure of interest rates is effective only in the quarter of the policy action. By the second quarter most of the effect of the policy action disappears and may actually be reversed if income is especially responsive to changes in B^a.
>
> (3) A constant interest rate policy has the following characteristics according to these models: (a) control of demand deposits is forfeited in the quarter in which the policy is instituted; (b) control of time deposits is forfeited after the first quarter; and (c) the sharp reversal of the response to B^a after the first quarter, and the resulting shift in the relative influence on the short-term interest rate of the initial changes in B^a and income, make the conduct of an interest rate policy in succeeding quarters increasingly complicated.

See Joseph R. Zecher, "An Evaluation of Four Econometric Models of the Financial Sector," Dissertation Series Number 1 in Federal Reserve Bank of Cleveland *Economic Papers* (January 1970). The models studied were two versions of a model by Ronald L. Teigen, the Brookings model financial section, and the FRB-MIT model group. Results similar to the first item cited above were also obtained using the Ando-Goldfeld model in Zecher, "Implications of Four Econometric Models for the Indicator Issue," *American Economic Review* (May 1970), pp. 47-54, especially Table 3, p. 50. Also see William E. Gibson, "The Lag in the Effect of Monetary Policy on Income and Interest Rates," *Quarterly Journal of Economics* (May 1970), pp. 288-300; William P. Yohe and Denis S. Karnosky, "Interest Rates and Price Level Changes, 1952-69," this *Review* (December 1969), pp. 18-38; and Albert E. Burger, "The Implementation Problem of Monetary Policy," this *Review* (March 1971), pp. 20-30.

[12] The Maisel Committee was a Subcommittee appointed by Chairman Martin in the Spring of 1969 for the purpose of exploring means of improving open market operations. The Committee was under the leadership of Governor Sherman Maisel and also included Presidents Frank Morris (Boston), and Eliot Swan (San Francisco). Papers prepared for the Maisel Committee are available in *Open Market Policies and Operating Procedures – Staff Studies*, Board of Governors of the Federal Reserve System, 1971.

SOMA [System Open Market Account]. If he achieved specified goals in terms of interest rates and other money market conditions, he had no sure way of reaching the Commiteee's objectives with respect to bank credit and the money supply. The reverse is also true. Thus, given this conflict, the need for basic reform of the FOMC's approach to monetary management was indicated.[13]

Past experience with a money market operating strategy has not led to stable interest rates and has frequently resulted in a discrepancy between actual and desired growth rates of money. Prolonged rapid increases and decreases of the money stock that accompanied this strategy, through their effects on total spending, price expectations and consequently the demand for credit, have been a major factor in the marked fluctuations in market rates during the past six years. Also, sharp accelerations and decelerations of the monetary base which have been necessary at times to offset wide swings in the growth of money have induced short-run instability into the money market.

If the growth of the money stock in 1971 was completely demand determined (no shift in the money supply), then this would imply that very substantial shifts occurred in money demand in 1971. Although the evidence is not conclusive on the stability of the demand for money, there is very little evidence that suggests it is subject to very frequent and erratic shifts.[14]

During 1971 the FOMC, on balance, resolved the conflict between their desired path for interest rates and their desired growth paths for monetary aggregates by cautiously adjusting money market conditions and hence accepting greater accelerations and decelerations in money than they initially desired. The resulting open market operating strategy led to a rapid growth of the monetary base in the first half of 1971 and a rapid deceleration in the growth of the base in the latter part of 1971. Although changes in the demand for money may have exerted some direct influence on growth of the money stock, changes in the supply of money induced by these marked changes in the growth of the monetary base were the dominant influence on the growth of money in 1971.

[13]Brimmer, "The Political Economy of Money," pp. 59-60.

[14]See David E. W. Laidler, *The Demand for Money: Theories and Evidence* (Scranton: International Textbook Co., 1969), pp. 105-106.

SUPPLEMENT

Federal Open Market Committee Decisions – 1971*

The Federal Open Market Committee met thirteen times during 1971 to review and evaluate developments in the economy, and to prescribe what objectives open market operations should try to achieve until the next FOMC meeting in order to further the longer-run goals of monetary policy. The 1971 FOMC meetings are grouped into three periods. The decisions of January through April were conditioned by the shortfall of money in the fourth quarter of 1970 and by an explicit desire for lower long-term interest rates. The directives of the May through August meetings called for more moderate growth of monetary aggregates, although aggregates grew rapidly during most of the period. The directives of the September through December meetings called for moderate or somewhat greater growth in monetary aggregates, yet money was almost unchanged over the period.

January Through April: Desire For Moderately Expansive Monetary Actions

The Committee desired that monetary actions accommodate the economic recovery which was expected to occur in the first quarter. Early in this period, several members of the Committee were concerned about the slower than desired growth in money in the fourth quarter of 1970 and also desired to see further declines in long-term interest rates. Money market rates fell substantially during January and February.

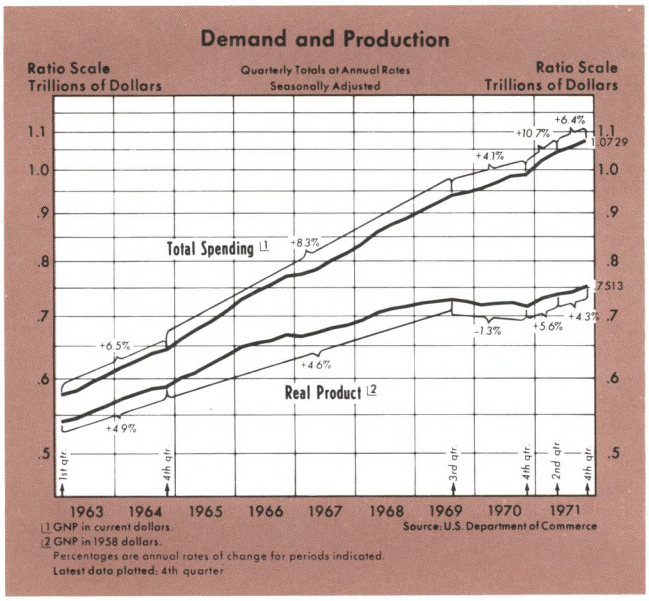
Beginning in February, money began to grow very rapidly and several long-term interest rates began to rise. At the last three meetings of this period, the Committee called for accommodation of any decline in long-term rates. Proviso clauses were added to the directives calling for an adjustment of money market conditions should the growth of aggregates deviate significantly from the desired paths.

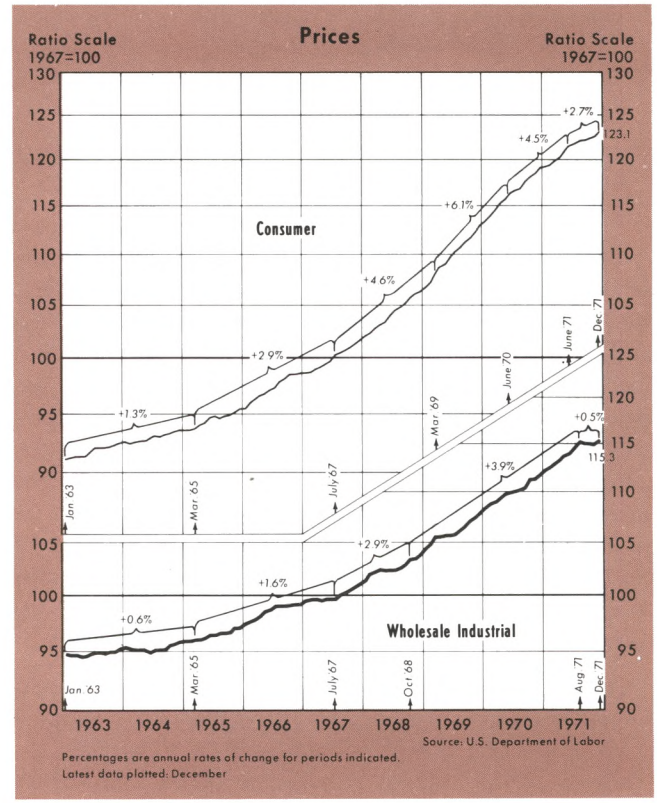
January 12 Meeting

The 1970 recession was clearly in evidence at this meeting. For example, real GNP was expected to show a decline in the fourth quarter of 1970, largely due to the automobile industry strike. The unemployment rate rose to 6 percent in December 1970, and the U. S. trade balance was reported to have deteriorated further in November. The fourth quarter deficit in the balance of payments on a liquidity basis was estimated to be about the same as in the third quarter, that is, about $3 billion.

Projections by the staff of the Board of Governors indicated a sharp recovery would begin in the first quarter, primarily as a result of a resumption of auto

*Data presented are those available to the Committee at the particular meeting. Subsequent revisions may have occurred in some figures.





production. The rate of increase of real GNP was expected to slow in subsequent quarters. Part of the strength in the economy was expected to come from residential construction and state and local spending. Consumer expenditures were expected to increase only moderately, apart from the anticipated return to a higher rate of new car purchases early in the year, while defense spending and fixed investment were not expected to bolster economic activity over the first half of the year.

Although money growth viewed over a longer time period was about in line with the desired rate, a shortfall had occurred in the fourth quarter of 1970. The Committee had desired a 5 percent rate of money growth, compared with an actual rate of 3.8 percent. Analysis presented to the Committee at the January meeting indicated more easing of money market conditions would be necessary in order to expand M_1 in the first quarter at a 7.5 percent rate. The Committee decided to seek "some moderate easing of money market conditions." Although a proviso clause was not directly included in the directive, the "Record of Policy Actions" indicates that members desired enough easing in money market conditions to be able to make up for the slower fourth quarter growth in money.

Mr. Francis dissented from this decision. He desired a continuation of a 5 percent growth rate of money, which was about the average rate in the second half of 1970. With this rate of growth of money he felt that the "longer-run performance of production and prices would be better than if money were to expand at some faster rate." In addition, he desired less emphasis on money market conditions in implementing open market operations.

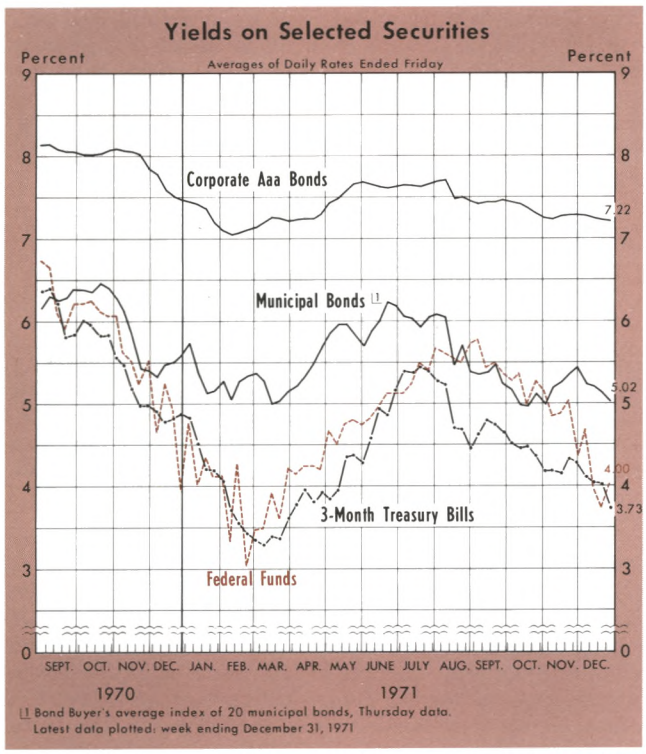
February 9 Meeting

Some renewed evidence of upward pressure on prices was given at this meeting. The consumer price index rose considerably in December, and wholesale prices rose rapidly in January, due in part to an increase in agricultural prices.

Following the January meeting both long- and short-term interest rates fell, which was thought to reflect the reports of weak economic activity and market expectations of lower rates which had been buttressed by reductions in the prime lending rate and the discount rate. It was noted at this meeting that money had increased less in January than had been expected earlier. The Policy Record stated that open market operations had been aimed at somewhat easier money market conditions initially after the January meeting, and then sought more easing as money fell short of Committee expectations.

Even with the slow January increase, growth of money was expected to be at about a 6 percent annual rate in the first quarter, assuming the prevailing money market conditions were maintained. Although the Committee agreed to "accommodate further declines in long-term interest rates," the February "Record of Policy Actions" reported that members of the Committee differed in their views concerning objectives for money and short-term credit markets and monetary and credit aggregates. Some members continued to want more easing in money market conditions, while other members wanted these conditions unchanged in view of the recent and prospective rapid growth of monetary aggregates other than money and the undesirable consequences of lower short-term rates for international capital flows. Also, some members expressed a desire for less emphasis on short-run fluctuations in money in the period ahead.

The Committee directed open market operations to "be conducted with a view to maintaining prevailing



money market conditions while accommodating additional downward movements in long-term rates." In addition, the Committee added a proviso clause stating that it desired to have money market conditions "promptly" eased if growth of monetary aggregates fell below their desired paths. "The Committee also agreed that its objectives for interest rates would be facilitated if, to the extent feasible, needs to supply reserves were met by purchases of longer-term Treasury securities."

Mr. Francis dissented from the February directive for reasons similar to those at the previous meeting. Namely, he preferred a 5 percent growth rate for money and less emphasis on money market conditions in implementing monetary policy.

March 9 Meeting

Yields on new issues of corporate and municipal bonds began to rise in early February, although short-term rates continued to fall. Several Committee members expressed concern about the increases in long-term rates. The desirability of renewed declines in long-term rates was generally agreed upon, but it was also recognized that "further sizable declines in short-term interest rates would not serve a useful purpose." Some members indicated a desire to have some modest increase in short-term rates in view of recent large capital outflows and the expected rapid growth of monetary and credit aggregates.

At the March meeting it was noted that M_1, M_2 and the adjusted credit proxy grew more rapidly in February than had been expected at the previous meeting. Analysis presented at the March meeting indicated M_1 would grow at about a 7 percent annual rate in the first quarter of 1971 if prevailing money market conditions were maintained, and that a more rapid rate could be expected in the second quarter.

Various views were expressed in regard to the emphasis that should be given monetary and credit aggregates and on the appropriate rate of growth for these aggregates. Some members were concerned about the projected rapid growth of aggregates in the second quarter. Others "stressed the uncertainties attached to the projections . . . and indicated that they were not disturbed by the near-term outlook for the aggregates."

The directive called for "maintaining prevailing money market conditions while accommodating any downward movements in long-term rates." A proviso clause was also included stating that money market conditions should be modified if it appeared the expected growth paths were not achieved for monetary and credit aggregates.

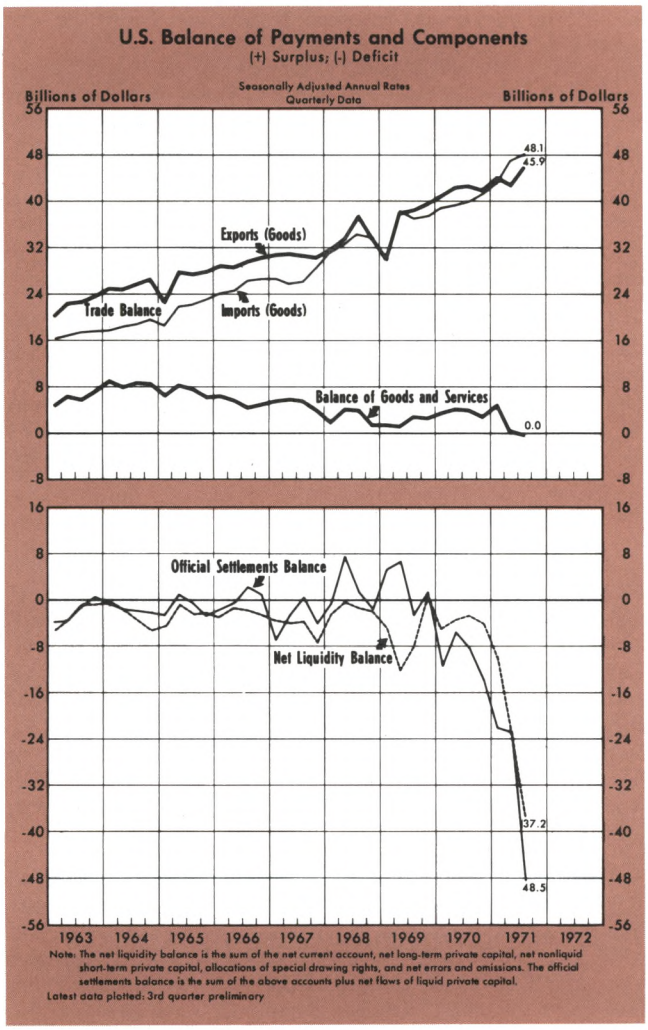
April 6 Meeting

Real GNP was reported at this meeting to have risen substantially in the first quarter; however, unemployment moved back up to 6 percent. Slower real GNP growth was still expected in the second quarter, primarily due to slower growth in sales of motor vehicles and a decline in defense expenditures. The outlook for the second half of 1971 was clouded by the possibility of a steel strike, but assuming a strike of no more than 60 days, projections indicated the growth of real GNP would be somewhat higher than the anticipated growth for the second quarter.

The U. S. foreign trade account showed only a small surplus in January and February. The deficit in the balance of payments on the liquidity basis was expected to be much larger in the first quarter than in the second half of 1970, while on an official settlements basis the first-quarter deficit in the payments balance was exceptionally large. These deficits were bolstered by heavy capital flows of interest-sensitive funds.

Following the March meeting, short-term interest rates began to rise. For example, 3-month Treasury bill rates rose about 40 basis points. After rising considerably in previous weeks, yields on new corporate and municipal bonds fell after the March meeting, then later on began to advance again. Both M_1 and M_2 were reported to have increased considerably more than had been expected at the previous meeting, while the adjusted credit proxy grew less rapidly than was expected. It was estimated that M_1 grew at about an 8 percent annual rate in the first quarter, M_2 at a 17.5 percent rate, and the adjusted credit proxy at an 11 percent rate. In response to the "considerably faster than expected" growth of M_1 and M_2, some "slight firming of money market conditions" was sought after the March meeting.

Under the assumption of maintaining prevailing money market conditions, analysis indicated M_1 would grow even faster in the second quarter than the 8 percent in the previous quarter. Growth of various time deposits, however, was expected to slow substantially, leading to moderation in the growth of M_2 and the credit proxy. The Committee agreed that open market operations should be aimed at "attaining temporarily some minor



firming in money market conditions." Some members wanted this firming in order to narrow the difference between short-term interest rates here and abroad so as to moderate capital outflows. The Committee stated its desire to have "more moderate expansion in the monetary aggregates in the second quarter than had occurred in the first," that is, less than 8 percent.

Two members dissented from this directive, favoring in both cases "more firming of money market conditions" than implied in the Committee's directive. Mr. Hayes thought there was a "need for moving toward somewhat higher short-term interest rates in light of the international financial situation" as well as the "risk of excessive growth in the money stock." Mr. Kimbrel thought "higher short-term interest rates would be desirable mainly to hold growth in the monetary and credit aggregates to a moderate pace in order to avoid a rekindling of inflationary expectations."

The "Record of Policy Actions" for the May 11 meeting states that initially after the April meeting "somewhat firmer conditions in the money market" were sought. Then as aggregates, primarily M_1, grew faster than expected, "some slight additional firming was sought." The Federal funds rate advanced from about around 3¾ percent following the March meeting to about 4¼ percent in the first part of April and remained there until the end of April. "Subsequently, however, despite large-scale, reserve-supplying operations by the System, the Federal funds rate advanced to a range around 4½ per cent."

May Through August: Moderating the Growth of Monetary Aggregates and the Rise of Long-Term Interest Rates

Evidence of economic recovery was presented during the meetings of this period, with retail sales and housing starts among the strongest indicators. Unemployment, however, remained around the 6 percent level, and there was little evidence of an abatement of inflationary pressures.

The directives of each meeting during this period called for "moderate" or "more moderate" growth in monetary aggregates. However, except for August, the Committee modified this objective in each directive by stating that "developments in capital markets" should be taken into account. This modifying clause might be interpreted as meaning to minimize upward pressures on long-term rates as firmer money market conditions were sought in order to moderate growth of aggregates.

May 11 Meeting

Preliminary Commerce Department figures indicated that real GNP had increased at a 6.5 percent annual rate in the first quarter, after declining at a 3.9 percent rate in the fourth quarter of 1970. More moderate growth in real GNP was expected in the second quarter.

The deficits in the balance of payments were described as "extremely large" for the first quarter. These deficits were attributed to short-term capital outflows resulting from the differential between interest rates here and abroad as well as speculation concerning changes in exchange rates. Heavy flows of dollars into European currencies, such as the German mark, were reported in the first few days of April, but had subsided during the next three weeks. In early May several countries, including Germany, Switzerland, the Netherlands, Belgium, and Austria, suspended sales of their currencies for dollars; the German mark and Dutch guilder were floated; and the Swiss franc and Austrian schilling were revalued upward.

Short- and long-term interest rates rose sharply following the April meeting. Growth of the money stock was revised upward for March, bringing M_1 to a 9 percent annual rate in the first quarter. Assuming money market conditions similar to those prevailing during most of April, analysis indicated M_1 would increase at about a 9 percent annual rate in the second quarter. Even with somewhat firmer money market conditions, M_1 was expected to grow at about an 8.5 percent rate in the second quarter.

Members of the Committee expressed concern about both rapid growth in monetary aggregates as well as

the marked increases in long-term interest rates. Because of these concerns, the Committee decided neither to revert to the money market conditions which prevailed in April, nor to seek a sharp firming in money market conditions considered necessary to attain a sharp reduction in the growth of aggregates in the second quarter. Initially, the Desk was instructed to maintain prevailing money market conditions in view of even-keel considerations. Thereafter, if significant deviations from the expected paths for the aggregates occurred, money market conditions were to be firmed, but in a *cautious* manner "with a view to avoiding undue reactions in capital markets." Because of uncertainties prevailing in domestic financial and foreign exchange markets, the Account Manager was given more than usual discretion in carrying out open market transactions.

June 8 and 29 Meetings

Short-term interest rates continued to increase during May and June, a trend begun in March. Yields on new issue corporate bonds were, on average, about the same in late June as in early May, while yields on municipal bonds were somewhat higher.

At the early June meeting, it was reported that the money stock, as well as other aggregates, increased in May at substantially more rapid rates than had been expected at the May meeting. At the late June meeting, preliminary data indicated money was growing rapidly in June, but less rapid than in May. Thus in view of this rapid growth, open market operations were directed towards "somewhat firmer conditions." The Federal funds rate advanced from about 4½ percent at the time of the May meeting to about 5⅛ percent at the time of the late June meeting.

At the early June meeting projections indicated that money would increase at about a 12 percent annual rate in the second quarter, and around 10 or 11 percent in the third quarter, assuming unchanged money market conditions. With somewhat firmer conditions, little change was expected in the second quarter growth rate of money, and a reduction of only about one percent was expected in the third quarter projections. Projections for the growth of money at the late June meeting were similar to those of the early June meeting.

At both of these meetings, members continued to express concern about the rapid growth of aggregates and the rise in interest rates. With regard to monetary aggregates, at the early June meeting the Committee stated its desire to seek "somewhat slower growth over coming months than appeared likely to eventuate if prevailing money market conditions were maintained." The directive of the late June meeting also called for more moderate growth in monetary aggregates. With regard to interest rates the Committee stated at both meetings that a sharp firming of money market conditions should be avoided, so as to minimize upward pressures on long-term interest rates.

July 27 Meeting

Preliminary Commerce Department estimates indicated that real GNP increased in the second quarter at about half the rate of the first quarter. Projections by the staff indicated that real GNP would slow somewhat in the third quarter, but would accelerate in the fourth quarter. Wholesale industrial and consumer prices increased "substantially" in June. It was noted that these price measures had risen at a faster rate in the second quarter than earlier in 1971.

The U.S. balance-of-payments deficit for the second quarter was described as "extraordinarily large." This deficit reflected partly the capital outflows, which resulted more from expectations of a further realignment of currencies and less from interest differentials than in the first quarter, and partly a deficit in the trade balance compared with a surplus in the previous quarter. Renewed tensions in foreign exchange markets were also noted in July.

Short-term interest rates generally rose after the June 29 meeting, while long-term rates changed little on balance after rising in the second quarter. The money stock rose at an 11.5 percent rate in the second quarter, compared with a 9 percent rate in the first quarter. Growth of other monetary aggregates (M_2 and the bank credit proxy) were noted to have decelerated in the second quarter.

Analysis presented at the July meeting indicated money would expand at about a 9 percent annual rate in the third quarter and at a much slower rate in the fourth quarter. The Committee agreed *more moderate* growth of aggregates remained the appropriate objective. However, even-keel considerations were noted as a constraint on open market operations until the next meeting. Also, as in several previous meetings, developments in capital markets were to be taken into account. With these short-term objectives, the Account Manager was again given more than usual discretion in conducting open market operations.

August 24 Meeting

The President's New Economic Program was announced on August 15, leading to a tentative reappraisal of the economic outlook by the staff. Expectations of a faster growth in real GNP in the rest of 1971 were enhanced when the President announced the new program. The rate of advance of prices was expected to slow, thus reducing somewhat the current-dollar GNP for the remainder of the year. The balance-of-payments deficit was noted to be increasing sharply after mid-year, and was described as "massive" in the first half of August.

Analysis presented at this meeting indicated money growth "would moderate somewhat in August and September and would slow substantially further in the fourth quarter," assuming prevailing money market conditions were maintained. It noted that because of the new program, projections for growth of aggregates were subject to sizable errors. The Committee decided in view of the difficulties in assessing the impact of the New Economic Program on economic activity, that a "marked change in the stance of policy would be premature." However, the Committee agreed to seek growth in aggregates "well below" the rates of previous months.

September-December: Cautious Move Toward Restoring Money Growth

In the remainder of 1971 there was a reversal of trends for interest rates and monetary aggregates. Interest rates fell considerably from mid-August 1971 to mid-January 1972, while the money stock exhibited almost no growth. During this period the Committee desired to have moderate growth in monetary aggregates, but also desired that the easing of money market conditions necessary to achieve this growth be made in a cautious manner. Later in this period, as the substantial reversal in the growth of the aggregates became more apparent, somewhat more emphasis was placed on achieving renewed moderate growth in aggregates.

September 21 and October 19 Meetings

At the September meeting the outlook for real GNP was for a "significantly slower" rate of increase in the third quarter than the estimated 4.8 percent rate in the second quarter. Projections for the fourth quarter indicated growth of real GNP would accelerate and price increases would moderate, partly in response to the New Economic Program.

Staff projections reported at the October meeting were optimistic for the first half of 1972. Real GNP was expected to grow at, or slightly below, the expected fourth quarter rate. This projection was based on an expected growth of consumer spending and business capital outlays. Projections of real GNP for both the fourth quarter of 1971 and the first half of 1972 were "appreciably faster" than those before the announcement of the New Economic Program.

Short- and long-term interest rates fell immediately following the President's announcement. The downward trend in interest rates, in general, continued through the October 19 meeting. At these meetings it was noted that both M_1 and M_2 had grown at slower rates in August and September than had been anticipated.

Analysis presented at the September meeting indicated that M_1 and M_2 would grow in the third quarter at rates well below those of the second quarter. If prevailing money market conditions were maintained, money growth was expected to "slow further in the fourth quarter." At the October meeting, analysis suggested that money would increase in the fourth quarter at about the same rate as the third, and that money growth was likely to accelerate in the first quarter of 1972.

Directives issued at these two meetings called for "moderate growth in monetary and credit aggregates." The September meeting also contained a modifying clause specifying that developments in the capital market should be taken into account. Although the Committee recognized the need for easing money market conditions in order to achieve this moderate growth of aggregates, the Committee at both meetings wanted to avoid an "aggressive" or a "marked" easing in order to achieve moderate growth of money in the near-term.

One reason given for avoiding an aggressive easing of money market conditions was "to minimize the risk of rekindling inflationary expectations." A second reason given was that in view of the rapid growth of money in the first seven months of the year, "a marked easing designed to stimulate faster growth in the near term would not be warranted." A gradual easing of money market conditions was undertaken by the Desk following the September and October meetings.

November 16 Meeting

Price indexes showed a marked improvement for September and October, reflecting the price-wage freeze. Staff projections of real GNP growth for the fourth quarter of 1971 and the first half of 1972 were reduced slightly from the projections presented at the previous meeting. Following the October meeting, market interest rates continued to decline.

Money declined slightly in September and October. Growth of M_1 was anticipated to resume in December and accelerate in the first quarter of 1972, assuming money market conditions were maintained similar to or somewhat easier than those prevailing. It was expected that M_2 would grow somewhat faster in the fourth quarter than the 4.5 percent rate in the third quarter.

The uncertainty surrounding the transition from Phase I to Phase II of the President's New Economic Program and the international situation was recognized by the Committee as adversely affecting consumer confidence. Some members felt that persistence of weak performance in the monetary aggregates might add to this uncertainty. Some members continued, however, to warn against "unduly aggressive action to stimulate monetary expansion."

The Committee directed that "somewhat greater growth" of monetary aggregates should be attained over the months ahead. The Committee recognized that "appreciably easier money market conditions" might be necessary in order to achieve this growth.

December 14 Meeting

Commerce Department estimates of real GNP growth were revised upward to 4 percent for the third quarter. Growth of real GNP appeared to be somewhat faster in the fourth quarter as well. The rates of increase in prices and wages were sharply lower during the "freeze" period.

Money changed little in November and, on balance, no growth in money occurred from August to November. Some short- and long-term interest rates rose slightly following the November meeting, but most rates began to decline again before the December meeting. Following the November meeting, the Federal funds rate fell from about 4¾ percent to about 4⅜ percent at the time of the December meeting.

Analysis indicated that easing of money market conditions would likely be required to achieve moderate growth of M_1 in December and January. The weakness of M_1 and total member bank reserves over the previous four months was of "considerable concern" to some of the Committee. Some members urged "more aggressive actions" be taken, while others desired a "more cautious and gradual" approach. The Committee agreed, however,

> . . . to promote the degree of ease in bank reserve and money market conditions essential to greater growth in monetary aggregates over the months ahead.

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Has Monetarism Failed? – The Record Examined

**Speech by DARRYL R. FRANCIS, President,
Federal Reserve Bank of St. Louis,
Before the Indiana Association of Certified Public Accountants,
Southern Indiana Chapter, Evansville, Indiana, February 23, 1972**

I AM PLEASED to have this opportunity to discuss with you some of the problems of economic stabilization. As government grows larger, it becomes both a potential stabilizer and destabilizer of the economy. Individuals bear higher and higher costs of economic instability, particularly in the form of unemployment and inflation. It thus becomes imperative that the economic profession, along with policymakers, investigate all alternative theories of stabilization and consider all available policy recommendations.

In recent years, doctrinaire and political bickering have clouded the use of a scientific approach to economic stabilization and have hindered the consideration of some actions which may offer acceptable solutions. Recent attacks on monetarist views of economic stabilization are a case in point, and I would like to examine the merit of these attacks.

For a number of years, I have accepted the description of economic behavior which is summarized by the "monetarist tradition" and, since my appointment to the presidency of the St. Louis Federal Reserve Bank in 1966, I have advocated stabilization policies consistent with this tradition. I would like to emphasize that my stance is not merely a belief, but an outgrowth of empirical observation and testing. This does not mean that I necessarily accept all the tenets or all the pronouncements of monetarists. But the work and research that has been done at our Bank for the past thirteen years has produced overwhelming evidence which has helped to confirm my views of the functioning of our economy and of the proper conduct of economic stabilization efforts.

Attacks on monetarist positions are not new, but recently they have become particularly strident, although no more precise than in the past. Examples of such criticism can be found in both the widely read popular press and professional publications. Paul A. Samuelson, a prominent economist and Nobel prize winner, said in a *Newsweek* column last summer (August 2, 1971), and I quote:

> There are monetarists advising the President who genuinely believe that the rapid growth in the money supply so far in 1971 is bound to lead to rapid rates of money and real growth, far beyond what the bulk of the forecasters expect. All the President needs is patience. This raises the question as to why the President has confidence in such advisers. It is no secret that the forecasting ability of monetarism is selling at a huge discount on the markets of informed opinion.

And again in a DePaul University publication, *Issues in Fiscal and Monetary Policy: The Eclectic Economist Views The Controversy*, Samuelson states:

> . . . in none of the modern sciences would it be respectable to believe in the pseudopositivism which prevails among the monetarists. It makes one ashamed for one's science, and provides us with still another reason why the peculiar tenets of monetarism have to be rejected.[1]

Federal Reserve Board Governor Andrew F. Brimmer, in a paper entitled "The Political Economy of Money: Evolution and Impact of Monetarism in the Federal Reserve System," delivered at the Eighty-Fourth Meeting of the American Economic Association on December 27, 1971, concludes:

> . . . I am convinced that it would be a disastrous error for the Federal Reserve to try to conduct monetary policy on the basis of a few simple rules governing the rate of expansion of the money supply. In

[1] "Reflections on the Merits and Demerits of Monetarism," in *Issues in Fiscal and Monetary Policy: An Eclectic Economist Views the Controversy*, ed. James J. Diamond (DePaul University Press, 1971), p. 21.

> the first place, I find serious deficiencies in the theoretical and empirical analysis on the basis of which the monetarists reach their conclusions and policy recommendations. Put quite simply, they have not demonstrated convincingly that the relationship between the money supply and economic activity is especially close.

An article in the *Business Week* magazine of December 11, 1971, states:

> For the second year in a row, the monetarists followed their theory to an erroneous conclusion. They expected the economy to be stronger than it was, and they were looking for a pronounced subsidence in inflation.

As mixed and oblique as these criticisms are, they nevertheless have received a great deal of attention in the popular press and are instrumental in molding public opinion.

The criticisms mentioned here, as well as those appearing elsewhere, seem to make two separate and distinct points: one, that the monetarist description of economic behavior, that is, theory, is incorrect, and two, that monetarist policy recommendations have been followed in recent years and have not produced the desired results. These two assertions have led many to conclude that the monetarist view should no longer be given serious consideration in economic stabilization efforts.

I think it is time to take a hard look at the record and let you draw your own conclusions. The record I wish to discuss is that compiled by the Federal Reserve Bank of St. Louis. Although firmly in the monetarist camp, it may not represent all monetarist thought nor all of its policy recommendations.

In order to provide some background for the examination of the record, I shall first briefly describe the body of thought referred to as the "monetarist tradition" and the stabilization policy implications generated by this view. Next, I shall discuss the record of economic predictions emanating from St. Louis research as a test of the validity of the monetarist view of economic processes. Then, I will examine the public record of monetary policy decisions to ascertain the extent to which monetarist recommendations were put into effect. Finally, I will offer some prognostications about the future of stabilization policy.

Monetarist Approach to Stabilization

Monetary Goals

Let us now review the "monetarist tradition." The monetarist view is not new – it can be traced back at least as far as David Hume in the 17th century and has its roots in all accepted theories of economic behavior. Recent interest in this view is primarily a reaction to the thirty-year dominance of Keynesian thought and the depression-oriented policies which held sway during that period.

In capsule form, the monetarist view is the following. In the long run the growth of output and employment is determined by the growth of resources of a society. The price level is simply the rate at which money can be exchanged for this output. The trend growth of prices is determined by the trend growth of money stock relative to growth in output. Thus, the rate of inflation and the value of total nominal spending are dominated by the quantity of money supplied.

Deviations from a trend rate of growth of money, however, cause short-run deviations in output and employment. A departure of the money stock from a given trend affects spending within approximately one year. If this change in money growth is sustained, it will result in a change in the rate of inflation which will be fully manifested in approximately five years. During this period of adjustment to a new rate of inflation, output and employment growth will be changed. But once the adjustment is completed, output and employment will resume their longer-run growth paths.

The implications of this behavior are more complex than is apparent at first glance. A sustained increase in the growth rate of money will generate inflation and inflationary expectations. An attempt at slowing inflation by reducing the rate of money growth will decrease output and employment temporarily, but given inflationary expectations, insistence on higher wages and prices will remain for some time. Thus, a response in spending will result in a decline in output and employment but not an immediate decline in the price level. This is the way in which inflation and larger unemployment can and do exist simultaneously for some time.

The policy implications of this view are relatively simple. Since the time lags of the response of total spending, output and the price level to a monetary shock are of various lengths, with some being relatively long, monetary policy should not be used for "fine tuning" the economy. An attempt to increase output in the short run by accelerating the growth of money will result in inflation; an attempt to reduce inflation by decelerating the growth of money will, in the short run, result in unemployment and continued inflation.

One might infer from this that monetary policy is totally ineffective. On the contrary, it is extremely

effective, but its use as a short-run stabilizing tool produces costs in terms of lost employment and output and undesired price level movements. On the other hand, its long-run effects are powerful *and* tend to minimize these costs.

By pursuing a steady and moderate growth of money, we can assure that inflation and expectations of inflation do not develop. This would assure that inflationary premiums on wages, prices and interest rates do not interfere with any adjustment process. Other policies can more appropriately be used to correct short-run fluctuations in output and employment, and they will be much more effective if expectations of price level movements do not interfere. Thus, the fundamental policy implied by monetarist thought is a steady trend rate of monetary growth. It must be noted that this rate may be chosen to produce no inflation whatsoever or some predetermined rate of inflation, if so desired.

Monetary Tools

In order to produce this relatively stable growth, monetary authorities must be able to control the money stock. It is our view that the money stock can be controlled by regulating its ultimate source — one of the several variants of the monetary base. Much criticism is leveled at the monetarists with respect to this facet of the theory. But this control mechanism is not unique to monetarist thought. Irrespective of whatever theory of income determination one subscribes to, regulation of the money stock can best be accomplished by producing desired movements in the monetary base.

Unfortunately there are critics who contend, with little empirical evidence, that the money stock cannot be controlled with any precision. Therefore, they conclude that monetary policy can make little contribution to economic stabilization efforts. These critics usually assume that controlling interest rates is synonymous with controlling the money stock. Such a statement is equivalent to saying that the amount of beef sold can be affected by the regulation of the price of pork. There is no doubt that they are interrelated, but precision is definitely lacking. Since the monetary base is almost totally dependent on Federal Reserve policies, and since it is very closely correlated with the money stock, the regulation of both is possible and feasible.

To sum up, the monetarist view, as developed and tested at the Federal Reserve Bank of St. Louis, implies a monetary policy which is directed towards a relatively steady growth of the money stock controlled through regulation of the monetary base.

The Validity of St. Louis Hypotheses

I will now examine the validity of the allegation that the monetarist concept of economic behavior bears little relationship to reality. All our behavior can be described by some kind of theory. For example, we are told that by pressing the accelerator pedal in an automobile we can increase its speed. A description is given to us which relates the pressure on the accelerator to injections of gas, other internal workings of a car and all external conditions. This constitutes a theory.

Now how do we know whether the theory is true or false? Essentially, we go out and test two hypotheses: one, that the speed of the car will indeed increase if the accelerator is pressed, and two, that it won't. Our test consists of actually pressing the accelerator and observing the response. The result which occurs with the greatest frequency would determine the theory to be accepted, and until proven otherwise, we would behave accordingly.

The point of all this is that economic theories are tested in the same manner. We accept or reject a hypothesis on the basis of its ability to predict, as compared with some alternative hypothesis. If monetarist theory predicts total spending, prices and output as well or better than other theories, then it may not be rejected as an appropriate description of such economic behavior. The crux of the matter, then, is the success of the theory in the explanation and prediction of those selected variables.

With this background, let us examine the predictions that were generated by the monetary research of the Federal Reserve Bank of St. Louis. The success of these predictions will help us to evaluate the validity of our view of economic processes.

In order to avoid the usual innuendos that accompany debates about forecasts, I will restrict myself to predictions which are of public record, that is, published materials. Until 1969 the Federal Reserve Bank of St. Louis did not have a formal forecasting model, but some earlier publications of the Bank did include qualitative predictions, analyses and recommendations which were made on the basis of the monetarist tradition.

In December 1966 we suggested that despite the restrictive monetary actions of the last eight months of 1966, the lagged effects of the rapid monetary expansion of late 1965 and early 1966 would cause

inflation to continue. The price level rose by 3.2 percent from 1966 to 1967.

In April 1967 we predicted that the restrictive monetary actions of 1966 would cause a decline in output in late 1967, while the rapid monetary expansion of early 1967 would put additional fuel into inflation in 1968. The rate of growth in output declined from 4.4 percent in the middle of 1967 to a 2.8 percent rate in the last quarter of 1967. The rate of increase in the price level accelerated to 4.6 percent per annum in the fourth quarter of 1968.

In September 1967 we predicted that the rapid monetary expansion of 1967 would cause inflation to continue unabated even if the proposed surtax were adopted. The surtax went into effect in July 1968, and inflation continued at a 4.7 percent rate through 1968.

Our first forecast based on a formal model was published in April 1970, although it was made earlier in the year.[2] At that time, the predictions for 1969 were made on the basis of data in existence prior to 1969, and the following two years were forecast on the basis of information available in 1969.[3] During a period of a forecast there occur many unforeseen natural, political and economic events which affect behavior and which inject errors into a forecast. Thus, most of the economic forecasters update their information to take account of these external shocks. But since the monetarist approach assigns pervasive, but not total, importance to the growth rate of money stock, our forecasts must be based on various assumptions concerning this growth.

Since a 6 percent growth figure most closely approximates the actual rate of increase in the money stock during the last three years, I shall use forecasts associated with that rate. As an alternative, I have chosen the so-called "consensus" forecast.[4] It is a consensus of many economists, espousing many different theories and many different methods of prediction. Historically, it has been consistently more accurate than the individual forecasts which make up the consensus, and I would like to make my case with the strongest alternative. Obviously, this choice does not permit us to reject other views of economic behavior, but it provides a strong test of whether the monetarist view should be rejected, as it has been by many observers.

At this point I apologize for the liberal use of numbers that I have to resort to. But the point must be made with comparative prediction figures. So if you will bear with me, I shall make these comparisons for the years 1969, 1970 and 1971. The forecasts of our model are selected so as to be consistent with the consensus frame of reference.

In the GNP forecasts, the predictions and actual figures are for the fourth quarter of the respective years. For the last quarter of 1969 we predicted a GNP level of $957 billion. Our forecast was $9 billion above the actual level, while the consensus forecast was $8 billion too low. For the fourth quarter of 1970 our prediction was $997 billion, or $9 billion too high. The consensus was $19 billion above the actual figure. For the end of 1971 the St. Louis prediction was $1077 billion. It overshot its mark by $4 billion, compared with a $7 billion shortfall by the consensus.

Table I

The Record of Prediction

		St. Louis[1]	Consensus[2]	Actual
1969	GNP (Billions)[3]	$957.2	$940.0	$948.0
	Prices[4]	4.1%	3.5% (6.0)[4]	5.1%
	Unemployment[5]	3.5%	4.1%	3.6%
1970	GNP	$997.2	$1007.0	$988.4
	Prices	4.6%	4.0% (5.6)	5.7%
	Unemployment	5.4%	4.6%	5.9%
1971	GNP	$1076.9	$1066.0	$1072.9
	Prices	4.0%	4.0% (3.3)	3.4%
	Unemployment	5.7%	5.6%	5.9%

[1]St. Louis predictions were made in "A Monetarist Model," this *Review* (April 1970), pp. 18-19. These predictions are based on the assumption of 6 percent money growth.

[2]Consensus predictions are from J. A. Livingston, *American Banker*, December 30, 1968, December 29, 1969 and December 28, 1970.

[3]GNP predictions and actual figures are for the fourth quarter of the year.

[4]Rate of change of prices for St. Louis predictions is the change in the GNP deflator from fourth quarter to fourth quarter, and the "actual" figure is GNP deflator. Consensus' price predictions are for the consumer price index from December to December. Actual consumer price index changes are in parentheses.

[5]The St. Louis predictions and the actual rate are for the fourth quarter, while the consensus prediction is for December.

For the unemployment rate, our predictions and the actual rates are for the fourth quarter of the respective years, while consensus' forecast is for December. We predicted that the unemployment rate would be 3.5 percent in late 1969, while the consensus said 4.1 percent, and the actual rate was 3.6 percent. For the end of 1970 we projected 5.4 percent, consensus 4.6 percent, and the actual was 5.9 percent. For the end

[2]Leonall C. Andersen and Keith M. Carlson, "A Monetarist Model of Economic Stabilization," this *Review* (April 1970), p. 7.

[3]Even though 1969 was "predicted" in 1970, the forecast was made strictly on the basis of data available through 1968, and no adjustments of known events were included. For example, if this Bank had been making quantitative predictions in 1968, this would have been our prediction.

[4]J. A. Livingston, *American Banker*, December 1968, 1969 and 1970.

of 1971, we forecast 5.7 percent, consensus 5.6 percent, and the actual was 5.9 percent.

In predicting the rate of increase in price levels, I will use the rate of change in the GNP deflator from fourth quarter to fourth quarter, while the consensus used a December to December change in the Consumer Price Index. Our predictions must be compared with the corresponding actual GNP deflator and the consensus' forecasts with the corresponding actual Consumer Price Index. For 1969 we projected a price level change of 4.1 percent, while the actual was 5.1 percent. Consensus projected 3.5 percent, while the actual was 6 percent. For 1970 our prediction was 4.6 percent and in reality prices rose by 5.7 percent, consensus forecast an increase of 4 percent, while the actual rate was 5.6 percent. For 1971 we predicted an increase in prices of 4 percent and the actual was 3.4 percent, while the consensus predicted 4 percent and their actual change was 3.3 percent.

You can see that St. Louis predictions were consistently closer to actual figures, except in the 1971 price prediction, where they were the same, and in the 1969 GNP forecast, where the consensus did a shade better. Please also remember that the St. Louis forecast for each of the last three years was reported in April 1970, while the consensus' was made in December of each preceding year.

Given this record, I cannot see how the monetarist view can be rejected as having ". . . not demonstrated convincingly that the relationship between the money supply and economic activity is especially close." I have deliberately chosen as an alternative hypothesis a consensus of many views. By using the generally accepted criterion of acceptance or denial of hypotheses, we cannot reject all other views as being false, but we certainly cannot reject the view that the relationship between the money supply and economic activity is at least as predictable as the relationships incorporated in these other views. The existing record, I believe, supports this beyond a shadow of a doubt. It has not been proven that the growth of money stock is *all* that matters. On the other hand, I believe that there is overwhelming evidence that policymakers can disregard money growth only at the peril of their policies.

I would like to stress that a forecast which is based on the influences of money stock does not automatically produce correct predictions. One recent example was a monetarist forecast of a 1971 GNP of $1,065 billion, while the actual GNP turned out to be $1,046.8 billion. Our methods, which we have consistently applied since 1969, predicted a 1971 GNP of $1,046 billion.[5] This prediction was made in early 1970.

I also would like to call to your attention that our forecasts have been better for longer periods than for quarter-to-quarter movements. However, I believe that stabilization efforts are best implemented over a longer-time horizon.

The Success of Monetarist Recommendations

Have Monetarist Policies Been Implemented?

Let us now examine the second criticism implied by many current writings – that policy recommendations arising out of the monetarist view have been followed and have produced an untenable situation consisting of simultaneous inflation, unemployment and international crises.

Before proceeding further, let me review the monetarist policy recommendations. As described earlier, there are only two – that the money stock should grow at a steady, moderate rate and that this rate of growth can be best produced by controlling the growth rate of the monetary base. The money stock does not have to grow at an absolutely constant rate week after week, but an average rate within a quarter must be within agreed-upon tolerances.

Let us now consider if these recommendations were accepted and enacted by policymakers. Evidence must be produced that such was the case, if the claims of our critics are to have any validity. So let us again look at the record.

In terms of long-term growth, or a trend if you please, the money stock grew at a 1.7 percent rate from first quarter 1952 to third quarter 1962, at a 3.7 percent rate from third quarter 1962 to fourth quarter 1966 and at a 6.1 percent rate from fourth quarter 1966 to second quarter 1971. This can hardly be considered a steady long-run growth.

Moreover, there have been substantial short-run variations in the rate of monetary expansion since 1968, a period when monetarist policies supposedly were followed. The yearly rate of growth during 1968 was 7.4 percent with a quarterly range between 5.6 and 8.8 percent. During 1969 it was 3.9 percent with a range of 1.6 to 7.3 percent. Then, during 1970 it grew at a 5.1 percent rate with quarterly growth ranging between 4.2 and 6.6 percent. And in 1971 the course of monetary expansion diverged the most from monetarist prescription. Average growth was 6.6 per-

[5]On the basis of 6 percent money growth.

cent with a quarterly range of 0.4 to 11.3 percent. I think the record shows conclusively that the monetarist recommendation of steady monetary growth was not put into effect.

Table II

Directive Targets

		Money Market Conditions Alone	Money Market Conditions and Bank Reserves	Bank Reserves Alone	Bank Credit	Monetary Base
1967	Primary	15	0	0	0	0
	Proviso	0	0	0	11	0
1968	Primary	17	0	0	0	0
	Proviso	0	0	0	16	0
1969	Primary	14	0	0	0	0
	Proviso	0	0	0	14	0
1970	Primary	5	8	0	0	0
	Proviso	2	0	0	2	0
1971	Primary	2	11	0	0	0
	Proviso	3	0	0	0	0

Source: Board of Governors of the Federal Reserve System, Annual Report, 1967-1970 Federal Reserve *Bulletin*, 1971
Federal Reserve Press Release: "Record of Policy Actions" of FOMC, Feb. 7, 1972

Has There Been An Attempt to Implement Monetarist Policy Recommendations?

As mentioned earlier, the second major recommendation is that growth of the money stock be controlled through management of some version of the monetary base. This base, which consists of the reserves of commercial banks and currency held by the nonbank public, is almost totally determined by the buying, selling, and lending transactions of monetary authorities. These transactions are solely the prerogative of policymakers. The relation between the monetary base and the money supply, on the other hand, is determined by the behavior of the public, banks, and the Treasury. The bone of contention between competing theories is the stability of this relationship. Our evidence concludes that this relationship is relatively stable and predictable.

On the other hand, the critics argue that it is not. They contend that the money stock cannot be controlled because it depends primarily upon economic activity rather than upon the actions of policymakers. Thus, the critics may argue that monetary authorities tried to control money but were unsuccessful.

But our discussion at present is not concerned with whether changes in the monetary base do indeed cause desired changes in the money stock, but whether the policy recommendations of the monetarist view have been put into effect or at least attempted. Namely, have policymakers attempted to regulate the level of the monetary base or even some reasonable facsimile as a means of controlling monetary expansion?

As a background for examining this issue, let me summarize the process of implementing monetary policy. The monetary policy of the United States is formulated by the Federal Open Market Committee (FOMC) of the Federal Reserve System and implemented by the Manager of the System Open Market Account. Thus, the monthly instructions by the Federal Open Market Committee to the Manager is where policy decisions can be found and evaluated.

FOMC instructions consist of a general statement of goals and a specific operating directive to the Account Manager at the New York Federal Reserve Bank. This operating directive in recent years has generally been divided into specification of a primary target to be achieved, and into a proviso clause which states the conditions under which the primary target is to be modified. It does not state, however, the specific point at which the proviso clause becomes effective. The monetary variables used as primary or proviso targets have usually been expressed as the following: money market conditions, which refer to interest rates, member bank borrowings and the net reserve position; bank credit, that is, the amount of bank loans and investments; and bank reserves and monetary aggregates, which refer to a conglomeration of reserves, money stock and the level of bank credit.

Again, we turn to the record to judge the validity of the ciritics' position. I shall consider actions of the past five years only, a period during which the results of monetarist research received some prominence, and during which it is alleged that monetarist policy prescriptions were tried.

During the years 1967, 1968 and 1969, the Committee met 46 times and issued a primary directive to maintain or change money market conditions 46 times. The proviso clause which modifies these instructions was stated 41 times in terms of bank credit and only once in terms of "money."

Since early 1970, all of the released instructions issued have stated that the goals of monetary policy are to achieve desired growth patterns of money stock, monetary aggregates or bank reserves; but the specific directive of what to use as the operating target by the Account Manager to achieve these goals has never been consistent with monetarist recommendations. Neither some form of the monetary base nor some form of bank reserves has been used as the sole operat-

ing target. In spite of apparent concern with the growth of monetary aggregates, the FOMC continued the use of money market conditions either as a sole target or in conjunction with bank reserves. The monetary base, the target suggested by our research and recommended frequently, at no time appeared as a primary target or in the proviso clause.

If the above evidence is not sufficient to convince you of the nature of the operating strategy of the FOMC over this period of time, let me quote from the analysis of Governor Brimmer:

> They (the views of the members of the FOMC) would also probably contain enough common elements relating to operating tactics to add up to a pattern of behavior which can be described as the pursuit of a money market strategy in the conduct of open market operations.[6]

In view of the behavior of the money stock and the record of policy implementation for the past five years, I need only to let you draw your own conclusions as to whether monetarist recommendations were put into effect and whether the current economic situation is due to the following of "monetarist policies."

Conclusions

I started this discussion by giving you some examples of criticism of the monetarist view. This criticism has been heeded by many policymakers and by the public in general, and therefore has been reflected in recent stabilization actions. Some of the critics allege to be scientific in their pronouncements, but refuse to apply the scientific criterion for acceptance or denial of monetarist hypotheses. Since the generally accepted criterion is the ability of a theory or hypothesis to predict actual events, I invite you to examine the record of predictions compiled by the St. Louis version of monetarist research and compare it with alternative views. The evidence is overwhelming that the monetarist view cannot be rejected.

The question of whether monetarist policy recommendations have been implemented can be judged on two criteria: one, has the money stock grown at a moderate rate and with the stability prescribed by monetarists, and two, have the policymakers attempted to implement such a prescribed growth rate but failed to succeed because the control mechanism is unreliable? One has only to look at the growth rates of the money stock over the past four years to see that monetarist recommendations were not implemented. It is also amply apparent that the recommended control mechanism for the stabilization of the money stock has not been used. Under these circumstances it is difficult, if not impossible, to suggest that monetarist policy recommendations have been put into effect and have thus produced the current economic predicament.

I am convinced that future stabilization of our economy depends heavily upon a moderate and stable growth of the money stock. But if the pronouncements of critics of the monetarist view are heeded, the result will most likely be erratic fluctuations in the money stock caused by attempts to "fine tune" the economy. Such fluctuations will necessarily cause periods of inflation and will be frequently accompanied by unacceptable levels of unemployment.

If monetarist recommendations are put into effect immediately, we are not going to have an immediate solution to all economic problems currently plaguing us. As I have noted previously, inflationary pressures develop slowly and recede slowly. In 1971 these pressures began to decline, but were accompanied with a high rate of unemployment. If we can have enough patience to allow a moderate and steady growth rate of the money stock, unemployment will gradually decline and we will be assured that future external shocks to the economy will be absorbed with minimum cost. If, on the other hand, we use monetary policy to wipe out slack in the economy in the short run, there could very well be continuous economic fluctuations, and perhaps fluctuations with a consistently larger amplitude.

Thus, this response to the critics is not a defense of a doctrinaire point of view, but a plea to the policymakers and their advisers to re-examine the evidence regarding the validity of the monetarist view. In our economy's present situation, all alternatives must be explored if our citizens are not to run the risk of having to pay a massive economic price in terms of lost output and employment and continued inflation.

[6]Andrew F. Brimmer, "The Political Economy of Money: Evolution and Impact of Monetarism in the Federal Reserve System" (Paper presented at the Eighty-fourth Annual Meeting of the American Economic Association, December 27, 1971).

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